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U.S. Fish and Wildlife Service

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Coastal Plain Oil and Gas Leasing Program Supplemental Environmental Impact Statement

FINAL

Volume 4: Appendix U (Response to Comments)

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Bureau of Land Management
U.S. Fish and Wildlife Service

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Appendix U

Response to Comments

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TABLE OF CONTENTS

Section	Page
APPENDIX U. RESPONSE TO COMMENTS	U-1
U.1 Draft Leasing SEIS Comment Process	U-1
U.1.1 Letter Campaigns	U-3
U.2 How to Read This Volume	U-3
U.3 Substantive Public Comments and BLM Responses	U-5
U.3.1 Acoustic Environment	U-5
U.3.2 Air Quality	U-8
U.3.3 Alternatives	U-23
U.3.4 ANILCA	U-140
U.3.5 Appendixes	U-146
U.3.6 Best Available Information (BAI)	U-174
U.3.7 Biological Resources	U-196
U.3.8 Birds	U-197
U.3.9 Climate and Meteorology	U-205
U.3.10 Comment Period Extension Requests	U-228
U.3.11 Consultation	U-234
U.3.12 Cultural Resources	U-235
U.3.13 Cumulative Impacts	U-240
U.3.14 Direct/Indirect Impacts	U-247
U.3.15 Economy	U-256
U.3.16 Environmental Justice	U-265
U.3.17 Executive Summary	U-271
U.3.18 Fish and Aquatic Species	U-272
U.3.19 Geology and Minerals	U-279
U.3.20 GIS Data and Analysis	U-280
U.3.21 Government-to-Government Consultation	U-282
U.3.22 Irreversible and Irretrievable Commitments of Resources	U-291
U.3.23 Landownership and Use	U-294
U.3.24 Lead and Cooperating Agencies	U-296
U.3.25 Mailing List	U-303
U.3.26 Marine Mammals	U-304
U.3.27 NEPA	U-310
U.3.28 Notice of Appeal or Litigation	U-317
U.3.29 Other Laws and International Agreements	U-318
U.3.30 Petroleum Resources	U-346
U.3.31 Physical Environment	U-347
U.3.32 Polar Bears	U-348
U.3.33 Public Health	U-396
U.3.34 Public Meetings	U-399
U.3.35 Public Outreach	U-401
U.3.36 Purpose and Need	U-403
U.3.37 Reasonably Foreseeable Development (RFD)	U-411
U.3.38 Recreation	U-412
U.3.39 Requests for Information	U-414
U.3.40 Sand and Gravel Resources	U-415
U.3.41 Sociocultural Systems	U-418

U.3.42	Soil Resources.....	U-427
U.3.43	Solid and Hazardous Waste	U-432
U.3.44	Special Designations.....	U-434
U.3.45	Subsistence Uses and Resources.....	U-435
U.3.46	Technical Edit and Formatting	U-454
U.3.47	Terrestrial Mammals.....	U-455
U.3.48	Transportation	U-481
U.3.49	Vegetation and Wetlands	U-483
U.3.50	Visual Resources.....	U-488
U.3.51	Water Resources	U-490
U.3.52	Wild and Scenic Rivers.....	U-500
U.3.53	Wilderness Characteristics, Qualities, and Values	U-502

Appendix U. Response to Comments

This volume presents comments the Bureau of Land Management (BLM) received on the Draft Coastal Plain Oil and Gas Leasing Program Supplemental Environmental Impact Statement (Leasing SEIS). It also includes a description of the public comment process, how the joint lead agencies considered all comments, and responses to all substantive comments.

U.1 DRAFT LEASING SEIS COMMENT PROCESS

The National Environmental Policy Act (NEPA) requires that all substantive comments received before reaching a decision must be considered to the extent feasible, and that agencies must respond to all substantive written comments submitted during the public comment period for a SEIS (40 CFR 1503.4). Comments must be in writing (including paper or electronic format or a court reporter's transcript taken at a formal public meeting or hearing), substantive, and timely, in order to merit a written response. Although the joint lead agencies diligently considered each comment letter, the comment analysis process involved determining if a comment was substantive or non-substantive. In performing this analysis, the joint lead agencies relied on Section 6.9.2, Comments, in the BLM NEPA Handbook H-1790-1 to determine what constituted a substantive comment. A substantive comment does one or more of the following:

- Questions, with a reasonable basis, the accuracy of the information or analysis in the SEIS
- Questions, with a reasonable basis, the adequacy of the information or analysis in the SEIS
- Presents reasonable alternatives other than those in the SEIS that meet the purpose of and need for the proposed action and addresses significant issues
- Questions, with a reasonable basis, the merits of an alternative or alternatives
- Causes changes in or revisions to the proposed action
- Questions, with a reasonable basis, the adequacy of the planning process itself

Additionally, the BLM's NEPA handbook identifies the following types of substantive comments:

- Comments on the Adequacy of the Analysis—Comments that express a professional disagreement with the conclusions of the analysis or assert that the analysis is inadequate are considered substantive; they may or may not lead to changes in the Final SEIS. Interpretations of analyses should be based on professional expertise. Where there is disagreement within a professional discipline, a careful review of the various interpretations is warranted. In some cases, public comments may necessitate a reevaluation of analytical conclusions. If, after reevaluation, the decisionmakers responsible for the SEIS do not think that a change is warranted, the response should provide the rationale for that conclusion.
- Comments That Identify New Impacts, Alternatives, or Mitigation Measures—Public comments on a Draft SEIS that identify impacts, alternatives, or mitigation measures that the draft did not address are considered substantive. This type of comment requires the decisionmakers to determine if it warrants further consideration; if so, he or she must determine if the new impacts, new alternatives, or new mitigation measures should be analyzed in the Final SEIS, in a supplement to the Draft SEIS, or in a completely revised and recirculated Draft SEIS.

- Disagreements with Significance Determinations—Comments that directly or indirectly question, with a reasonable basis, determinations on the significance or severity of impacts are considered substantive. A reevaluation of these determinations may be warranted and may lead to changes in the Final SEIS. If, after reevaluation, the decisionmakers do not think that a change is warranted, the response from the joint lead agencies should provide the rationale for that conclusion.

Comments that failed to meet the above description were considered non-substantive. After publishing the Draft SEIS on September 8, 2023, the initial 45-day public comment period to receive comments on the Draft SEIS was extended by an additional 15 days. With the extension, the public comment period officially ended on November 7, 2023. The joint lead agencies received written comments by mail, fax, email, the online comment form via ePlanning, and handwritten and verbal testimony at public meetings.

The joint lead agencies held public meetings on the Draft SEIS during the comment period in North Slope communities, Anchorage, and Fairbanks. Pursuant to ANILCA Section 810(a)(1) and (2), the BLM also conducted hearings in Utqiagvik, Venetie, Arctic Village, Fort Yukon, and Kaktovik to gather comments regarding potential impacts on subsistence use resulting from the alternatives considered in the Draft SEIS. In order to capture all relevant comments, court reporters were available in all meeting locations to capture verbal testimony. A list of the meetings and meeting dates are provided below.

- September 25, 2023: Utqiagvik
- September 26, 2023: Venetie
- September 28, 2023: Arctic Village
- October 9, 2023: Fort Yukon
- October 16, 2023: Anchorage
- October 23, 2023: Fairbanks
- March 21, 2024: Kaktovik (Section 810 hearing only)

Comments received covered a wide spectrum of thoughts, opinions, ideas, and concerns. The joint lead agencies recognize that commenters invested considerable time and effort to submit comments on the Draft SEIS. The agencies developed a comment analysis method to ensure that all comments were considered, as directed by NEPA regulations. This systematic process ensured the joint lead agencies tracked and considered all substantive comments.

On receipt, each comment letter was assigned an identification number and logged into a database that allowed the agencies to organize, categorize, and respond. Substantive comments were coded from each letter to appropriate categories, based on content, and the link to the commenter was retained. The categories generally follow the sections presented in the Draft SEIS, though some related to the planning process or editorial concerns.

Similar comments were grouped together, and one response was prepared for each group of similar comments. The responses were crafted to respond to the comments and to note if a change to the SEIS was warranted.

The joint lead agencies received a total of 112,963 comment letter submissions; 792 of these were considered unique submissions, and 112,171 were part of form letter campaigns (discussed further, below, in **Section U.1.1**). Many comments received throughout the comment analysis process expressed personal

opinions or preferences, had little relevance to the adequacy or accuracy of the SEIS, or represented commentary on management actions that are outside the scope of the SEIS. These commenters did not provide specific information to assist the joint lead agencies in making a change to the existing action alternatives, did not suggest new alternatives, and did not take issue with methods used in the SEIS; these comments were not addressed further in this document.

The joint lead agencies read, analyzed, and considered all comments of a personal or philosophical nature and all opinions, feelings, and preferences for one element or one alternative over another. Because such comments were not substantive, they did not receive a response. It is also important to note that, while the joint lead agencies reviewed and considered all comments, none were counted as votes. The NEPA public comment period is neither an election nor does it result in a representative sampling of the population. Therefore, public comments are not appropriate to be used as a democratic decision-making tool or as a scientific sampling mechanism.

Subject matter experts reviewed comments that recommended additional studies, data, or scientific literature to be incorporated into the analysis; new information and citations were incorporated into the Final SEIS as appropriate. Comments citing editorial changes to the document were reviewed and incorporated. The Final SEIS has been technically edited and revised to fix typos, missing references, definitions, and acronyms and provides other clarifications as needed.

U.1.1 Letter Campaigns

Several organizations and groups held standardized letter campaigns to submit comments during the public comment period for the Draft SEIS. Through this process, their constituents were able to submit the standard letter or a modified version of the letter indicating support for the group's position on the BLM management actions. Individuals who submitted a modified standard letter generally added new comments or information to the letter or edited it to reflect their main concerns. The BLM received 112,171 submissions from form letter campaigns, most of which were identical to the master letter. Modified letters with unique substantive comments were given their own submission number and were coded appropriately.

U.2 HOW TO READ THIS VOLUME

A letter number was assigned to every unique communication received during the Draft SEIS public comment period. The following tables contain all substantive comments with the joint lead agencies' responses; comments are organized by the category that comments regarded. Commenter names and applicable organization or agency are provided for letter submissions that did not request that their information be withheld. Complete transcripts of public meetings and copies of all substantive comment letters are available on the project's ePlanning website, which can be accessed through: <https://eplanning.blm.gov/eplanning-ui/project/2015144/510>.

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U.3 SUBSTANTIVE PUBLIC COMMENTS AND BLM RESPONSES**U.3.1 Acoustic Environment**

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Bright	Roselie	-	20475	1	The DSEIS mostly restricts itself to local impacts, and covers most of them well. However, the assessment of the impact of noise is outdated. Recent studies have shown serious health impacts on people of all ages, from human-made environmental noise, including increased blood pressure, heart disease, raised stress hormones, brain damage, cancer, and death [1-45]. The noise surely will also impact the health of wildlife.	Section 3.2.3 has been updated to discuss human health impacts from noise. Impacts of noise on wildlife are described in Sections 3.3.2, 3.3.3, 3.3.4, and 3.3.5 of the Draft and Final SEISs.
Freitas	Benjamin	World Wildlife Fund	79957	40	Shipping Noise. The Draft SEIS contains several important gaps in its evaluation of the scope and impacts of underwater noise generated by shipping activities associated with the proposed development of the Coastal Plain. The agencies must fill these gaps in its Final SEIS. For example, the impacts of noise in general and on fish, birds, marine mammals, and subsistence focus heavily on noise-generating activities within or near the program area. As a result, they largely fail to address shipping noise along the entire 1,600-nm marine barge route and its resulting impacts on wildlife, habitat, and subsistence activities throughout the many important marine areas along that route.(79) Additionally, icebreaking noise and disturbance are not addressed anywhere in the Draft SEIS. Underwater noise arising from the construction of shipping-related facilities offshore, such as pile-driving, which can disturb, displace or harm cetaceans and other marine mammals, was also not addressed. (79) The International Maritime Organization (IMO) has adopted guidelines to help protect marine life from the harmful impacts of noise from commercial shipping. The IMO guidelines state that the "international community recognizes that underwater-radiated noise from commercial ships may have both short and long-term negative consequences on marine life, especially marine mammals." IMO Marine Env't. Prot. Comm., Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life, MEPC.1/Circ.833, Gothenburg-Sweden, annex § 1.1 (July 30, 2014), available at http://www.ascobans.org/sites/default/files/document/AC21_Inf_3.2.1_IMO_NoiseGuidelines.pdf .	Section 3.2.3 has been updated to discuss impacts from underwater noise generated by shipping activities, icebreaking, and construction of offshore shipping-related facilities.
Freitas	Benjamin	World Wildlife Fund	79957	41	Relatedly, there is no recognition of icebreaking noise and other disturbance on marine mammals in the Draft SEIS. Studies document impacts of icebreaking by ships on Arctic cetaceans. For instance, beluga whales have been deflected by icebreaker noise and have left the area with active icebreaking for as long as two days thereafter. Ringed and bearded seals hauled out on ice showed avoidance behavior when an icebreaking vessel was more than 1 kilometer away, and icebreakers can also adversely affect ice-breeding seals during pupping and lactation periods through direct collision and destruction of pupping lairs or separation of mothers and pups. Studies also document the impacts of icebreaking on Arctic ice habitat by crushing or displacing ice used by ice-breeding nursing seal pups. Noise and Arctic ice habitat disturbances from icebreaking are not addressed anywhere in the Draft SEIS, and these omissions represent a major substantive gap that must be addressed in the Final SEIS. More generally, shipping-related noise is not comprehensively addressed, and where it is addressed in a piecemeal fashion, such as in the marine mammal section, it understates the potential impacts and inappropriately concludes that they will be minimal. These represent major substantive gaps in agencies' analysis. The Final SEIS should include a substantial and realistic discussion of icebreaking noise, shipping, and construction noise impacts near the program area and along the marine shipping route, and an analysis of the impact of icebreaking on sea ice habitat loss and alteration and subsistence.	Section 3.2.3 has been updated to discuss impacts from underwater noise generated by shipping activities, icebreaking, and construction of offshore shipping-related facilities.
Proescholdt	Kevin	Wilderness Watch	80104	8	The FWS CCP for the Arctic National Wildlife Refuge recognized that, "Natural quiet and natural sounds are intrinsic elements of the Wilderness character of designated Wilderness and the wilderness characteristics of the entire Refuge." However, the DSEIS remains inadequate because it has little baseline information on the soundscape. Site-specific information on some of the development activities is also missing as is modeling for each alternative.	The gathering of baseline ambient noise level data is beyond the scope of this programmatic-level SEIS. Because the hypothetical development scenario represents a level of development and not the actual locations of future project elements, no noise modeling was undertaken. Noise analyses will occur at the project level once specific projects have been proposed. Baseline ambient noise information would be gathered at that time to more accurately reflect actual background conditions; noise analyses, which may include modeling, would reflect actual development proposals.
Brisson	Brook	Trustees for Alaska	80131	131	As FWS recognizes in the CCP, preservation of natural soundscapes is an important component of achieving the Refuge's purposes of conserving wildlife, habitat, wilderness, and recreation. The agencies cannot ensure compliance with those Refuge purposes or with NEPA absent a robust evaluation of foreseeable noise impacts on the natural soundscape and on wildlife, wilderness, and recreation.(498) (498) See, e.g., S. Utah Wilderness Alliance v. U.S. Dep't of Interior, No. 2:13-cv-01060-EJF, 2016 U.S. Dist. LEXIS 140624, *20-*24 (Oct. 3, 2016); Izaak Walton League of Am. v. Kimbell, 516 F. Supp. 2d 982, 995-97 (D. Minn. 2007); BLM Manual 7300.06D.	The SEIS includes a comprehensive evaluation of the noise impacts related to the RFFAs as a whole.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	132	First, the draft SEIS's discussion of the affected environment remains highly incomplete. Most significantly, the agencies include no meaningful information about the baseline acoustic environment of the Coastal Plain, instead relying on dated background acoustic monitoring from Point Thomson - an area outside the Refuge Coastal Plain that is affected by noise associated with nearby oil production and associated industrial sites. The failure to include Coastal Plain specific acoustic information is particularly disappointing given that the University of Alaska Fairbanks conducted four years of baseline acoustic monitoring in the Coastal Plain and elsewhere across the North Slope of Alaska. (501) This monitoring was funded by the National Science Foundation's Navigating the New Arctic program(502) and was coordinated with FWS Arctic Refuge staff. These data provide the best available information on background sound levels in the Coastal Plain, at least during the summer season. The agencies should include this data in the final SEIS and compare them with the data reported from Point Thomson to determine if reliance on Point Thomson data is supportable. In addition, the agencies should conduct their own baseline acoustic monitoring consistent with existing methodologies.(503) This would ensure that monitoring remains ongoing during implementation of any oil and gas leasing program that is established and impacts could be better understood over time. (501) Personal communication from Dr. Todd Brinkman to Tim Fullman on 2023-09-21. (502) See https://humanwildliferesearch.com/projects/#Soundscape . Accessed 2023-10-06. (503) E.g., Betchkal 2015; Stinchcomb 2017; Stinchcomb et al. 2020.	The gathering of baseline ambient noise level data is beyond the scope of this programmatic-level SEIS. Because the hypothetical development scenario represents a level of development and not the actual locations of future project elements, no noise modeling was undertaken. Noise analyses will occur at the project level once specific projects have been proposed. Baseline ambient noise information would be gathered at that time to more accurately reflect actual background conditions; noise analyses, which may include modeling, would reflect actual development proposals.
Brisson	Brook	Trustees for Alaska	80131	133	The affected environment section also continues to suffer from an incomplete explanation of the impacts of non-natural noise on wildlife, wilderness, and recreation. The draft SEIS still fails to address best available science on how anthropogenic noise, including from oil and gas development, can impact species in ways crucial to survival and reproductive success.(504) For instance, it is notable that caribou can hear a wide range of types of human activity. This is acknowledged in the draft SEIS,(505) but additional sources should be added, such as a study finding that reindeer (the same species as caribou) can hear noise from powerlines.(506) Recent research has expanded the known range of caribou hearing beyond previous studies,(507) which could expand the potential for different types of disturbance. Those authors note that additional studies at lower frequencies, especially infrasonic, are needed. They also warn that some individuals may be more sensitive to noise than others, which could lead to broader implications for populations if leaders are disturbed during herd movements. (508) The relative scarcity of studies of auditory capacity and disturbance responses for caribou means additional precaution should be taken to avoid auditory disruption of caribou. (504) E.g., Larson et al. 2020; Keyel et al. 2017; Drolet et al. 2016; Shannon et al. 2016; Halas 2015; Francis and Blickley 2012; Barber et al. 2009; Wolfe et al. 2000; Maier et al. 1998; Bradshaw et al. 1997, 1998; Georgette and Loon 1988; Calef et al. 1976. (505) DSEIS at 3-40. (506) Flydal et al. 2003. (507) Perra et al. 2022. (508) Id.	Impacts of noise on wildlife are described in Sections 3.3.2, 3.3.3, 3.3.4, and 3.3.5 of the Draft and Final SEISs.
Brisson	Brook	Trustees for Alaska	80131	134	To help address the gap in knowledge and inform the effectiveness of noise mitigation efforts, a study of caribou auditory responses should be added to the requirements under the Adaptive Management Plan described in Lease Stipulation 6 for Alternative D. Perra et al. describe an approach that could be taken where acoustic recorders are combined with GPS collars deployed on caribou to simultaneously record sound exposure and caribou behavioral responses.(509) A scientific study using such collars should be part of the Adaptive Management Plan, funded by the lessee and conducted by the agencies or an organization they hire, with review by independent scientists. This would add to the available scientific knowledge and would be important for better understanding impacts of any future development. (509) Id.	Alternative D and D2 require that the lessee/operator/contractor develop Adaptive Management Plans (AMP) would be developed in coordination with to identify research needs, carry out monitoring and research efforts, evaluate existing/ongoing management and mitigation efforts, quantify impacts, and identify management changes when necessary. This plan would be submitted to USFWS (including Arctic Refuge staff), BLM, and the International Porcupine Caribou Herd Technical Committee for review and approval. Site-specific data collection could be performed at the time a project is proposed and added to the AMP as deemed appropriate/necessary.
Brisson	Brook	Trustees for Alaska	80131	135	While the draft SEIS properly acknowledges Alaska Native communities' long-standing concerns regarding the effects of aircraft noise and activity on caribou and subsistence,(510) it still fails to address sound impacts on subsistence across all phases of development, including, for instance, impacts of activities such as stick picking to clean up after winter exploration and construction, which often takes place during the sensitive summer period and is helicopter supported. And while the draft SEIS acknowledges how low-flying aircraft noise can cause annoyance to humans,(511) it still fails to provide any meaningful discussion of acoustic impacts on recreationists who visit the Coastal Plain to escape non-natural noises. As Groups pointed out at scoping, studies have found that anthropogenic noise interferes with the quality of the visitor experience and even impacts the perceived visual and aesthetic qualities of the landscape.(512) Non-natural noise also degrades wilderness characteristics, including apparent naturalness and opportunities for solitude.(513) (510) DSEIS at 3-40. (511) Id. (512) E.g., Mace 1999. (513) See 16 U.S.C. § 1131(c).	Impacts of noise on subsistence and recreation are described in Sections 3.4.3 and 3.4.6 of the Draft and Final SEISs, respectively.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	136	Second, the agencies' impact analysis likewise remains deficient. Despite repeated requests from Groups, the draft SEIS does not utilize acoustic modeling to fully analyze the impacts of each alternative on the natural soundscape and various resources - including wildlife, wilderness, and recreation - that would be affected by anthropogenic noise associated with oil and gas development. The final SEIS should utilize existing data on background ambient noise levels to establish the necessary baseline, as described above, and then conduct a proper noise impact study, including acoustic modeling of development scenarios under each alternative. Various models and methodologies that constitute the best available scientific information are available for purposes of conducting soundscape modeling.(514) Based on the results of the modeling, the agencies can then utilize acoustic ecologists and wildlife biologists to fully assess the reasonably foreseeable direct, indirect, and cumulative impacts of increased anthropogenic noise on various wildlife species. The agencies must also use the results of the modeling to fully analyze the reasonably foreseeable acoustic impacts on the Refuge's wilderness resources, the Mollie Beattie Wilderness, and on recreationists' experiences. Based on this analysis, the agencies must consider and fully analyze all options for avoiding, minimizing, and mitigating adverse impacts to natural soundscapes to ensure compliance with Refuge purposes. At a minimum, the agencies should require in a stipulation or ROP adopted as part of the oil and gas leasing program this type of baseline monitoring, modeling, and analysis prior to any project-level approvals. (514) E.g., Keyel et al. 2017; Keyel et al. 2018.	Acoustic modeling of all development scenarios to accurately forecast foreseeable noise impacts is out of scope for this programmatic level of analysis, but may be performed during site-specific analyses of future project specific development proposals.
Brisson	Brook	Trustees for Alaska	80131	137	The draft SEIS impacts analysis also fails to meaningfully apply the estimated noise levels for project equipment included in Table 3-16. While it discusses in a highly qualitative comparison across alternatives potential types and extent of noise by decibel level, the draft SEIS makes no effort to articulate what those noise levels may mean for different wildlife species, subsistence activities, or recreation activities in different locations. For instance, the agencies can and should - even absent acoustic modeling - address how anticipated noise levels from activities like summertime gravel mining across different alternatives may impact priority recreation and subsistence areas identified in the draft SEIS. The final SEIS impact analysis should also make clear that anticipated sound levels in Table 3-16 greatly exceed ambient noise levels and may extend significant distances, impacting much of the Coastal Plain and transcending into the Mollie Beattie Wilderness.	This type of analysis would occur at the site-specific NEPA level. Impacts of noise on subsistence and recreation are described in Sections 3.4.3 and 3.4.6 of the Draft and Final SEISs, respectively. Impacts of noise on wildlife are described in Sections 3.3.2, 3.3.3, 3.3.4, and 3.3.5 of the Draft and Final SEISs.
Brisson	Brook	Trustees for Alaska	80131	138	Finally, the draft SEIS fails to include adequate stipulations and required operating procedures to ensure protection of the natural soundscape and compliance with Refuge purposes that depend on maintenance of that soundscape. For instance, Stipulation 10 may buffer to a certain extent noise impacts within and immediately adjacent to the Mollie Beattie Wilderness. However, the distance of this buffer (3 miles) is far shorter than the distances listed in Table 3-16 required for oil and gas-related sounds to dissipate to ambient levels, indicating the insufficiency of Stipulation 10 to protect the Wilderness soundscape. Furthermore, this stipulation would do nothing to address the adverse acoustic impacts on the wilderness values of the Coastal Plain itself. Alternative D's ROP 34 provides a starting point for mitigating noise and other impacts from low-flying aircraft on wildlife, subsistence activities, local communities, and recreationists. These mitigation measures must be strengthened and adopted in the final SEIS and Record of Decision.(515) For instance, vague language such as that in ROP 34 requirement/standard c. to keep "to a minimum" use of aircraft near known subsistence camps and cabins, during sensitive subsistence periods, or when recreationists are present should be clarified and strengthened to require complete avoidance of those areas as the default expectation. The final SEIS should also require acoustic monitoring, modeling, and noise mitigation planning prior to project-level approvals. This requirement should include, but not be limited to, the recommendation above to add to Alternative D's Stipulation 6 a requirement to study caribou auditory responses as a component of the Adaptive Management Plan. (515) See also infra Section VI.I.4 for additional recommendations.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures. As described in Section 3.3.2, acoustic impacts would be mitigated through stipulations and ROPs that institute TLs, NSO, and other requirements restricting oil and gas development, drilling, seismic exploration, and testing from specific areas and during certain times of the year (see Table 2-3). These additional requirements would collectively reduce noise produced in the program area, preserving the natural acoustic environment. Site-specific acoustic monitoring could be performed at the time a project is proposed and added to the AMP as deemed appropriate/necessary by the Authorized Officer.

U.3.2 Air Quality

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Bright	Roselie	-	20475	2	Furthermore, even though local air pollution is projected by the DSEIS to remain within standards, the impacts of increased air pollution will have impacts on public health, as have been shown in recent studies [46-91]. The air pollution surely will also impact the health of wildlife.	Air quality involves complex physical and chemical transformations at a local/regional level, so impacts would vary considerably depending on background concentrations, meteorology, and other local pollutant sources. As noted in Section 3.2.2, Air Quality, in the Downstream non-GHG Impacts on Air Quality and Public Health, BLM incorporates by reference the extensive downstream non-GHG air quality and public health impacts analysis performed for the 2023 Willow Master Development Plan Final SEIS since it is representative of a future large development in the Alaska North Slope and thus downstream impacts from a potential future project in the Coastal Plain are expected to be comparable to or less than those from the Willow project. The public health impacts section examines the subset of chemicals which are likely, either due to their concentration or their toxicity, to contribute the most to potential health effects: CO, PM2.5, PM10, NO2, SO2, benzene, 1,3-butadiene, formaldehyde, and n-hexane. A detailed analysis of downstream non-GHG impacts to air quality was presented in Appendix E.3C of the 2023 Willow Master Development Plan Final SEIS. The analyses presented in the Draft SEIS do not indicate that significant adverse impacts could occur. Air quality impacts were conservatively modeled for the peak year of emissions under high and low development scenarios that bound Alternatives B, C, and D. Air quality impacts for Alternative D2 are projected to be lower than those modeled under the low development scenario. The air quality analyses performed reflected all of the development scenarios in the Draft SEIS. As reported in the Section 3.2.2, Air Quality, of the Draft SEIS, the cumulative air concentrations of criteria pollutants following hypothetical development are expected to be below the NAAQS and AAAQS. There is a modeled exceedance of the annual PM2.5 NAAQS approximately 320 miles west of the program area near Wainwright, Alaska, with a modeled impact of 0.001 µg/m3 due to the hypothetical oil and gas development scenarios in program area. Therefore, the contribution of program area development to the exceedance is low. Modeled cumulative nitrogen deposition fluxes are below or within the range of critical loads for atmospheric deposition (levels of deposition below which no harmful effects to an ecosystem are expected).
Boldrick	Lauren	EPA Region 10	80058	28	In summary, because of the possible sensitivity of populations within and in near proximity to ANWR, we recommend emphasizing focused localized air quality impact analysis for any proposed developments. EPA recommends the FSEIS consider the sensitive and protected flora and wildlife that could come into near proximity to developments and disclose any known air quality or deposition thresholds of air pollutants, if available, to compare to the tiered impacts. If this information is not reasonable or feasible to include in the NEPA analysis, include why and describe any potential future analyses of flora and fauna impacts during the implementation of the proposed project (e.g., requirements of ROP 6).	Localized air quality impacts were assessed in the SEIS by tiering to the AERMOD modeling conducted for the Willow project, which is representative of a fairly large oil and gas development on the North Slope. Air quality impacts were compared against the primary and secondary NAAQS. Primary NAAQS are designed to safeguard public health with a reasonable margin for safety, while secondary NAAQS are designed to safeguard public welfare from a variety of adverse effects, including those related to effects on soils, water, crops, vegetation, animals, wildlife, weather, visibility, and climate. The modeled ambient air concentrations of criteria air pollutants were lower than the primary and secondary NAAQS thresholds as well as the AAAQS. Modeled localized cancer risk and hazard index due to the hazardous air pollutants were lower than relevant thresholds. Impacts to terrestrial and aquatic ecosystems were assessed in the regional modeling by comparing to critical loads of deposition. Modeled cumulative nitrogen deposition fluxes are below or within the range of critical loads for atmospheric deposition (levels of deposition below which no harmful effects to an ecosystem are expected).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Proescholdt	Kevin	Wilderness Watch	80104	7	The DSEIS fails in adequately looking at air quality. Baseline information is sparse and dates back only to 2021. BLM failed to model the impacts among alternatives.	BLM rigorously assessed impacts to both air quality and air quality related values in the program area by conducting a quantification of emissions due to construction, drilling, and operation oil and gas activities, incorporating near-field modeling of the Willow Master Development Plan SEIS, which is representative of a future large oil and gas development on the North Slope, and performing regional modeling and impact analysis for low and high oil and gas development scenarios to provide a lower and upper bound around Alternatives B, C, and D. Air quality impacts for Alternative D2 are projected to be lower than those modeled under the low development scenario. An emissions inventory was developed for each action alternative using information from the RFD. The emissions are estimated for pre-development and production years for each hypothetical development using the Willow project Alternative E for a conservatively high estimate of the potential emissions. Far-field modeling was conducted with the CAMx photochemical grid model to assess a range of potential air quality and AQRV impacts resulting from oil and gas development. Three future-year scenarios were considered: a baseline scenario, a high-development scenario, and a low-development scenario. The modeled cumulative air concentrations for criteria pollutants are below the NAAQS and AAAQS in hypothetical development scenarios, indicating no significant deterioration of air quality. There is a modeled exceedance of the annual PM2.5 NAAQS approximately 320 miles west of the program area near Wainwright, Alaska with a modeled impact of 0.001 µg/m3 due to the hypothetical oil and gas development scenarios in program area. Therefore, the contribution of program area development to the exceedance is low. For a closer assessment of the localized air pollution impacts, near-field modeling was performed by tiering to the Willow project as a representative development scenario. The modeling assessed concentrations of select criteria and hazardous air pollutants within 31 miles (50 km) of the project for five development scenarios: construction, two pre-drilling scenarios, developmental drilling, and routine operations. Model results assessed at a representative community near the oil and gas development, show all criteria and hazardous air pollutant results are below the applicable standards and thresholds. The near-field modeling used ambient air quality monitoring data from a nearby monitoring station (Nuiqsut Monitoring Station, approximately 25 miles from Willow project site) as representative ambient air background concentrations. BLM used the most recent three years of data at the time of publication, from 2018-2020, to calculate background concentrations in the form of the NAAQS. Moreover, ambient air quality monitoring data from five air quality monitoring stations located within approximately 100 miles of the Coastal Plain with verified data in the last 5 years or at least 3 years of data within the past 10 years was provided in Section 1.1.2, Ambient Air Quality Monitoring Data, of the Air Resources Technical Support Document (Appendix Q). The data availability varies by station, but ranges from 2014-2022.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	113	An adequate NEPA analysis and compliance with the Clean Air Act requires BLM and FWS to quantitatively analyze the air pollution impacts associated with each alternative considered in the SEIS, ensure prevention of significant deterioration of air quality, fully analyze a suite of enforceable mitigation measures, and address impacts from greenhouse gas emissions. In order to adequately analyze these issues, BLM and FWS were required to perform a quantitative analysis of criteria pollutants for all alternatives but failed to do so.(480) Further exacerbating this issue, BLM and FWS's proposed mitigation measures in the draft SEIS are deficient. (480) See Williams Air Quality Comments, attached, secs. I & III (regional photochemical modeling does not reflect action alternatives and incorporation of Willow near-field modeling likely under-estimates impacts).	BLM rigorously assessed air quality impacts in the program area by quantifying emissions due to oil and gas activities, incorporating near-field modeling impact analysis for a representative future large oil and gas development on the North Slope, and performing regional modeling and impact analysis for the peak year of emissions under the low and high oil and gas development scenarios to provide a lower and upper bound around Alternatives B, C, and D. Thus, Alternatives C and D are bounded by the low and high development scenarios that were modeled and air quality impacts were assessed for all action alternatives, including Alternatives C and D. Air quality impacts for Alternative D2 are projected to be lower than those modeled under the low development scenario. An emissions inventory of criteria and hazardous air pollutants was developed for each action alternative using information from the RFD scenario. Therefore, an air quality impact analysis was completed for all alternatives. Regional photochemical modeling was conducted with the CAMx photochemical grid model to assess a range of potential air quality and AQRV impacts resulting from oil and gas development. Air quality impacts are evaluated through the regional photochemical modeling of hypothetical low and high oil and gas development scenarios that bound the potential levels of development in the Coastal Plain described in the RFD scenario. In addition to an air quality analysis of the criteria air pollutants (Section 3.2.2 of the Draft SEIS), a detailed analysis of GHG emissions and potential climate change impacts was presented in Section 3.2.1, Climate and Meteorology, of the Draft SEIS. A Prevention of Significant Deterioration analysis is performed at the time of project-specific modeling and not a program-area analysis such as this one. As noted in ROP 6, "the modeling shall compare predicted impacts to all applicable local, State, and federal air quality standards and increments." The near-field under-estimation comment is not correct here because: (1) the PM under-estimation cited was not from near-field modeling, and (2) the concentrations after accounting for the background are well below the relevant health thresholds and therefore future changes in the timing of background concentrations are unlikely to result in non-compliance. The specification of mitigation measures is decided at the time of the ROD by the DOI decision-maker.
Brisson	Brook	Trustees for Alaska	80131	114	Baseline levels of air quality must be established prior to allowing development on the Coastal Plain. In the absence of a baseline monitoring data record that is representative of ambient air conditions on the Coastal Plain, BLM and FWS should ensure that quality-assured monitoring data are collected within the program area in accordance with EPA and State data quality criteria and that the data are made available to the public, prior to allowing oil and gas activities on the Coastal Plain.	Ambient air quality monitoring data for the Coastal Plain was presented in Section 1.1.2 of the Air Resources Technical Support Document, Appendix R of the Draft SEIS. Data are reported for five air quality monitoring stations which are located within approximately 100 miles of the Coastal Plain and have verified data in the last 5 years or at least 3 years of data within the past 10 years. In particular, baseline air monitoring is being conducted at Kaktovik in the Coastal Plain. In addition, due to the large size of the Coastal Plain region, regional modeling helps inform baseline ambient air quality analysis.
Brisson	Brook	Trustees for Alaska	80131	115	BLM and FWS do not explain what the differences may be between background air quality within the project area and these other areas which are many miles away and not within a protected National Wildlife Refuge.	Background air concentrations within a protected National Wildlife Refuge would be lower than those other areas (discussed in the Draft SEIS) which are closer to existing oil and gas activity. Therefore, using background air concentrations from those areas would lead to a conservatively high estimate of background and cumulative impacts. Moreover, ambient air quality data gathered from stations within the program area demonstrate that criteria air pollutants are below the NAAQS for the years of available data, which vary per station, but range from 2014-2022.
Brisson	Brook	Trustees for Alaska	80131	116	These monitoring stations are also located near rural communities. BLM and FWS do not discuss how human-induced air pollutant emissions from industrial processes and mobile emissions may alter the air quality near these stations. This information is necessary to ground truth the agencies' assumptions that this background data is representative of air quality within the areas in which it is considering leasing. Establishment of a comprehensive monitoring network within the program area is necessary to serve as a backstop to track and ensure air quality protection throughout the Coastal Plain and to help identify areas of concern with regard to air impacts.	Ambient air quality monitoring data for the Coastal Plain was presented in Section 1.1.2 of the Air Resources Technical Support Document, Appendix R of the Draft SEIS. Data are reported for five air quality monitoring stations which are located within approximately 100 miles of the Coastal Plain and have verified data in the last 5 years or at least 3 years of data within the past 10 years. In particular, baseline air monitoring is being conducted at Kaktovik in the Coastal Plain.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	117	Beyond establishing baseline air quality monitoring data, BLM and FWS must also complete a more comprehensive, quantitative modeling analysis of future development in the final SEIS in order to prevent significant impacts throughout the Coastal Plain (as opposed to taking corrective action after a significant impact is identified by an air quality monitor). At a minimum, the agencies must commit to remedying the lack of representative baseline monitoring data and comprehensive, quantitative modeling prior to any project-level approvals. At a minimum, the agencies must commit to remedying the lack of representative baseline monitoring data and comprehensive, quantitative modeling prior to any project-level approvals.	The Draft SEIS included a rigorous quantitative modeling analysis of potential impacts from future development scenarios in the Coastal Plain using regional photochemical modeling. Additionally, as noted in Section 3.2.2, Air Quality, in the Impacts Common to All Alternatives section in the Draft SEIS, project-specific terms and conditions required prior to authorizing any future oil and gas activity in the program area would be determined as part of site-specific NEPA analyses and would include one or more of the following from ROP 6 (Chapter 2): minimum of 1 year baseline air monitoring, emissions inventory, air modeling, emissions reduction plan and control strategies, project lifetime monitoring, and providing timely data to communities, Tribes, state, and other entities. Additionally, for site-specific development proposals, the ADEC would require air emission permits and dispersion modeling to assess the potential impacts of specific facilities in accordance with the EPA and Alaska rules and guidance. Air pollutant emissions and impacts from a proposed future project would be subject to federal and state air quality regulations under the Clean Air Act. In Alaska, air pollution impacts are managed by ADEC under the Alaska Air Quality Control Regulations (18 AAC 50) and the EPA-approved state implementation plan. Future projects would be required to obtain all applicable state air quality permits.
Brisson	Brook	Trustees for Alaska	80131	118	The draft SEIS is deficient because BLM and FWS failed to conduct the modeling necessary to adequately analyze air quality impacts, compare alternatives, and support conclusions about compliance with the Clean Air Act. The absence of modeling for each alternative deprives the public and decision makers from understanding and evaluating the potential tradeoffs and differences between alternatives. Air quality modeling is a necessary tool for assessing future air pollutant impacts under NEPA and supporting BLM's conclusion that oil and gas activities would be unlikely to exceed health-based National Ambient Air Quality Standards and thresholds set to protect against adverse impacts to air quality related values. A quantitative modeling assessment of the air quality impacts from each of the alternative development scenarios, based on modeling of emissions associated with the specific assumptions for the development alternatives - including the location and density of development - is needed to understand whether impacts would be greater under certain alternatives for some pollutants, in some locations. The draft SEIS demonstrates that emissions, as well as the location of these emissions, from these three alternatives differ. (483) Therefore, as Ms. Williams explains, the only way to accurately know the air quality impacts from the various alternatives would be for BLM to have modeled the emissions from the various development scenarios.(484) This should be rectified in the final SEIS. (483) DSEIS at 3-27 to 3-34. (484) Williams Air Quality Comments, sec. I.	BLM rigorously assessed impacts to both air quality and air quality related values in the program area by conducting a quantification of emissions due to construction, drilling, and operation oil and gas activities, incorporating near-field modeling of the Willow EIS, which is representative of a future large oil and gas development on the North Slope, and performing regional modeling and impact analysis for low and high oil and gas development scenarios to provide a lower and upper bound around Alternatives B, C, and D. Air quality impacts for Alternative D2 are projected to be lower than those modeled under the low development scenario. An emissions inventory was developed for each action alternative using information from the RFD. The emissions are estimated for pre-development and production years for each hypothetical development using the Willow project Alternative E for a conservatively high estimate of the potential emissions. Far-field modeling was conducted with the CAMx photochemical grid model to assess a range of potential air quality and AQRV impacts resulting from oil and gas development. Three future-year scenarios were considered: a baseline scenario, a high-development scenario, and a low-development scenario. The modeled cumulative air concentrations for criteria pollutants are below the NAAQS and AAAQS in hypothetical development scenarios, indicating no significant deterioration of air quality. There is a modeled exceedance of the annual PM2.5 NAAQS approximately 320 miles west of the program area near Wainwright, Alaska with a modeled impact of 0.001 µg/m3 due to the hypothetical oil and gas development scenarios in program area. Therefore, the contribution of program area development to the exceedance is low. For a closer assessment of the localized air pollution impacts, near-field modeling was performed by tiering to the Willow project as a representative development scenario. The modeling assessed concentrations of select criteria and hazardous air pollutants within 31 miles (50 km) of the project for five development scenarios: construction, two pre-drilling scenarios, developmental drilling, and routine operations. Model results assessed at a representative community near the oil and gas development, show all criteria and hazardous air pollutant results are below the applicable standards and thresholds.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	119	BLM and FWS are required to independently estimate the emissions inventory, model air pollution impacts associated with each of the action alternatives and compare these results to the baseline of Alternative A. But BLM and FWS only conducted a quantitative air quality impact analysis for Alternative B - the highest potential development scenario. No independent impact assessment was completed for Alternatives C or D, despite BLM and FWS providing a projected emissions inventory for these alternatives.(485) The agencies simply assume that because Alternatives C and D would offer less lands for leasing, there would be a corresponding reduction in impacts. But this fails to account for the possibility that more infrastructure and development could be concentrated in certain areas, and thus increase emissions and impacts in areas that are open for leasing, and potentially lead to exceedances of air quality standards. Moreover, because Alternative D emissions are significantly higher, especially for NOx, it is likely that the Alternative D development scenario would result in higher impacts than the draft SEIS's hypothetical "low" oil and gas development scenario.(486) This is confusing given that Alternative D purportedly presents the least amount of development. The agencies should closely review their modeling assumptions as part of completing modeling of all alternatives in the final SEIS. (485) See DSEIS at 3-27 to 3-34. (486) Williams Air Quality Comments, sec. I.	As part of the impact assessment, an emissions inventory was developed for each action alternative using information from the RFD scenario with the peak year of emissions selected so as to be conservatively high. Regional modeling was conducted to assess a range of potential air quality and AQRV impacts resulting from oil and gas development for three future-year scenarios: a baseline scenario, a high-development scenario, and a low-development scenario. To effectively estimate potential impacts given considerable uncertainty regarding the location and magnitude of development, the alternatives were bounded by low and high development scenarios, which together provide a lower and upper bound around Alternatives B, C, and D. The modeling was performed for the baseline, low, and high development scenarios to assess the range of possible impacts in Alternatives B, C, and D. Air quality impacts for Alternative D2 are projected to be lower than those modeled under the low development scenario. Given that there is considerable uncertainty around where hypothetical development may occur, the modeling is based on BLM's best judgment on the potential distribution of development and infrastructure. The modeled cumulative air quality concentrations for all criteria pollutants are below the NAAQS and AAAQS in hypothetical development scenarios, indicating no significant deterioration of air quality. There is a modeled exceedance of the annual PM2.5 NAAQS approximately 320 miles west of the program area near Wainwright, Alaska with a modeled impact of 0.001 µg/m3 due to the hypothetical oil and gas development scenarios in program area. Therefore, the contribution of program area development to the exceedance is low.
Brisson	Brook	Trustees for Alaska	80131	120	BLM should explain more generally how it determined that Willow is representative of future development on the Coastal Plain.	The Willow project is representative of a future large development in the Alaska North Slope. As it includes one processing facility, three drill pads, one operating center, one airstrip, gravel site, roads, and associated infrastructure, it is a conservatively high representation (i.e., protective of the environment) of a future potential development in the Coastal Plain. Thus, results from the Willow project modeling are used to conservatively represent a future development on the Coastal Plain. Near-field impacts from a future development in the Coastal Plain of the same scale as Willow with similar nearby RFFAs are expected to be generally similar to those modeled for the Willow project.
Brisson	Brook	Trustees for Alaska	80131	120	The potential for Coastal Plain development to have significantly higher air quality impacts than Willow should be addressed in the final SEIS, and BLM should include a near-field modeling requirement in ROP 6 to ensure air quality impacts are quantitatively considered for all future development proposals.	As noted in ROP 6 (Chapter 2 of the Draft SEIS), project-specific terms and conditions required prior to authorizing any future oil and gas activity in the program area would be determined as part of site-specific NEPA analyses and would include one or more of the following: air modeling to analyze direct, indirect, and cumulative impacts, minimum of 1 year baseline air monitoring, emissions inventory, emissions reduction plan and control strategies, project lifetime monitoring, and providing timely data to communities, Tribes, state, and other entities. Future project-level EAs may require near-field modeling on a case-by-case basis. As noted in ROP 6, "the modeling shall compare predicted impacts to all applicable local, State, and federal air quality standards and increments." The Willow project is representative of a future large development in the Alaska North Slope. As it includes one processing facility, three drill pads, one operating center, one airstrip, gravel site, roads, and associated infrastructure, it is a conservatively high representation (i.e., protective of the environment) of a future potential development in the Coastal Plain. Thus, the air quality impact results from the Willow project modeling are used to conservatively represent a future development on the Coastal Plain.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	121	The draft SEIS identifies essentially the same mitigation measures presented in the Willow final SEIS. As a result, the agencies fail to analyze or condition leasing on a comprehensive set of required, measurable, and enforceable mitigations to ensure there will be no significant impacts to air quality associated with leasing and development. (490) Without such mitigation measures, it is unclear how BLM and FWS will ensure there will be no significant impacts to air quality - i.e., that oil and gas activities will not adversely impact human health and the natural environment and will not result in significant deterioration of air quality as required by the Clean Air Act. While the draft SEIS contains some proposed mitigation meant to address air quality, the measures largely mirror those from the prior EIS and do not go far enough.(491) (490) See Megan Williams, Willow FSEIS Review of Certain Air Pollution Mitigation Measures (Mar. 2023). (491) DSEIS at 3-24 to 3-25; 2019 DEIS Comment Letter at 147-50.	Localized (near-field) air quality impacts were assessed in the SEIS by tiering to the AERMOD modeling conducted for the Willow project, which is representative of a fairly large oil and gas development on the North Slope. Air quality impacts were compared against the primary and secondary NAAQS. Primary NAAQS are designed to safeguard public health with a reasonable margin for safety, while secondary NAAQS are designed to safeguard public welfare from adverse effects, including those related to effects on soils, water, crops, vegetation, animals, wildlife, weather, visibility, and climate. The modeled ambient air concentrations of criteria air pollutants were lower than the primary and secondary NAAQS thresholds as well as the AAAQS. The specification of mitigation measures is decided at the time of the ROD by the DOI decision-maker.
Brisson	Brook	Trustees for Alaska	80131	122	At the outset, unnecessary and undue degradation is the appropriate standard for the Western Arctic Reserve, but the Refuge is subject to different standards and statutory mandates.(492) These highly protective management objectives must be considered and enforced via mitigation measures. These elements are largely discretionary and, therefore, do not assure measurable and enforceable impact avoidance or minimization.(492) Supra Section IV.C	The Arctic National Wildlife Refuge is not classified as a Class I area. The specification of mitigation measures is decided at the time of the ROD by the DOI decision-maker.
Brisson	Brook	Trustees for Alaska	80131	123	Element "c" requires that, "[f]or an application to develop a potential substantial air pollutant emission source, the proponent shall prepare an emissions inventory that includes quantified emissions of regulated air pollutants from all direct and indirect sources related to the proposed project." BLM and FWS do not specify what level of emissions would trigger the requirement to develop such an emissions inventory - i.e., BLM does not define "substantial air pollutant emission source," thereby leaving this element sufficiently vague as to be unenforceable as a practical matter. This element, as written, appears to leave it up to BLM or the operator's discretion as to what constitutes a "substantial emissions source." BLM should define this term and clearly require publicly-available emissions inventories for all air pollutant emissions sources related to oil and gas activities. Similarly, element (c)(ii) allows BLM to require modeling of air quality impacts from a "potential substantial air pollution emissions source." Again, BLM and FWS do not specify what will trigger this element and do not provide assurance that any modeling required will be conducted following rigorous standards and practices. BLM and FWS should require comprehensive modeling of all proposed air pollution emissions sources following the latest guidelines on air quality modeling from EPA and considering representative background concentrations and cumulative impacts.	ROP 6 in Section 2.3.5 of the Draft SEIS notes that BLM may require modeling for purposes of analyzing direct, indirect, and cumulative impacts on air quality and that they would consult with appropriate federal, state, and/or local agencies. Future project-level EAs may require detailed emissions inventory on a case-by-case basis (see ROP 6). Localized air quality impacts were assessed in the SEIS by tiering to the AERMOD modeling conducted for the Willow project, which is representative of a fairly large oil and gas development on the North Slope. Air quality impacts were compared against the primary and secondary NAAQS. Primary NAAQS are designed to safeguard public health with a reasonable margin for safety, while secondary NAAQS are designed to safeguard public welfare from adverse effects, including those related to effects on soils, water, crops, vegetation, animals, wildlife, weather, visibility, and climate. The modeled ambient air concentrations of criteria air pollutants were lower than the primary and secondary NAAQS thresholds as well as the AAAQS.
Brisson	Brook	Trustees for Alaska	80131	124	Regarding monitoring measures, element "b" states that BLM may require one year of baseline monitoring data if no representative data is available, and that if required, baseline ambient air monitoring data "must meet DEC and EPA air monitoring standards." Besides requiring such data be gathered, BLM should further outline and/or reference specific standards with regard to: (1) siting and design criteria; (2) monitoring methods; (3) quality assurance requirements; and (4) data reporting and certification requirements. Similarly, the life-of-project monitoring outlined in element "e" should be required to meet the same specific standards. In addition, BLM should clearly specify: the magnitude of the emissions; the distance to Class I and sensitive Class II areas, and to nonattainment and maintenance areas; and types of meteorological or geographic conditions that will trigger when monitoring will be required for the life of the project. BLM should also include a requirement to monitor during the life of the project in subsistence use areas that will be impacted by the proposed development.	Ambient air monitoring requirements and triggering conditions would be considered during the project-level NEPA process or at the permit stage.
Brisson	Brook	Trustees for Alaska	80131	125	Regarding additional emissions reductions measures, element (c)(iii) allows BLM to seek an emissions reduction plan and additional mitigation measures but does not specify what will trigger these elements and what the specific requirements are of the emissions reduction plan or additional mitigation measures and strategies. BLM should outline the specific objectives of these elements - e.g., what additional measures will be required, when measures will be required, and what level of emissions reductions will be required.	Emission reduction requirements and triggering conditions would be considered during the project-level NEPA process or at the permit stage.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	126	Regarding significant air quality impacts, element "f" allows the authorized officer to require "changes" to reduce emissions if ambient air monitoring indicates project-related emissions are causing or contributing to unnecessary or undue degradation, exceedances of NAAQS, or fail to protect human health. But BLM and FWS do not specify how it will know if project-related emissions are causing or contributing to these trigger events or define what it means to fail to protect health. BLM and FWS should require that any monitored exceedance of the NAAQS in the impacted area would immediately trigger an adaptive management plan requiring additional analysis and mitigation. And as discussed above, unnecessary or undue degradation is the incorrect standard.	Ambient air monitoring data and modeling analyses will be reviewed at the project-level permitting stage to determine a need for adaptive management.
Brisson	Brook	Trustees for Alaska	80131	129	Further, mitigation should include restrictions on flaring. As Ms. Williams' comments address, the agencies' analysis of potentially significant air pollution impacts from flaring is deficient in a number of respects.(494) BLM and FWS should require documentation of any and all flaring episodes, as well as adequate public records of the amount of gas flared and the causes of flaring. BLM and FWS should also require lessees to notify local communities and Tribes when flaring occurs. These measures will provide opportunities to minimize flaring events. In addition, BLM should require detailed control techniques for flares to ensure optimal flare efficiency and performance. BLM should also require that flares be operated at all times in a manner consistent with good air pollution control practices for minimizing emissions, and that flares be monitored to ensure they are operated and maintained according to their design.(495) (494) Williams Air Quality Comments, sec. IV. (495) See EPA, Enforcement Alert, EPA Enforcement Targets Flaring Efficiency Violations at 2 (Aug. 2012), available at: https://www.epa.gov/sites/production/files/documents/flaringviolations.pdf ; see also 40 C.F.R. § § 63.172(e), 60.482-10	Mitigation measures on flaring would be considered during the project-level NEPA process or at the permit stage.
Brisson	Brook	Trustees for Alaska	80131	130	Finally, BLM should require lessees to implement an enforceable fugitive dust control plan that reflects the assumptions for fugitive dust control used in the modeling for the draft SEIS. There are also a number of measures BLM should require to minimize NOx, PM10, hazardous air pollution (HAP), ozone, and greenhouse gas emissions, as described in the attached report. (496) In addition to mitigation, BLM should consider an alternative aimed at minimizing air quality impacts, e.g., one that would reduce criteria pollutants and greenhouse gas emissions. For example, as described above, BLM should consider an alternative that makes only 400,000 acres of lands available for oil and gas leasing, an alternative that would not allow any waivers, exceptions, or modifications to the lease stipulations and ROPs, or an alternative that SEIS emissions at net zero. Such alternatives would have a corresponding benefit to air quality which should be fully analyzed. (496) Williams 2022 Willow DSEIS Review.	Fugitive dust control plans would be decided at the project-level permitting stage. Land use in the Alternatives is a BLM decision.
Brisson	Brook	Trustees for Alaska	80131	535	The analyses presented in the DSEIS indicate that significant adverse impacts on air quality and ecosystems could occur. Further, the air quality analyses underestimate impacts and do not reflect all of the development scenarios in the DSEIS. As a result, it is likely that air quality and ecosystem impacts would be more extensive than what is presented in the DSEIS. The agencies should establish enforceable mitigation measures in the SEIS that align with the assumptions that were made in the impact analyses and should more clearly address the potentially significant air pollution impacts from flaring that could occur with any future development in the Coastal Plain.	The analyses presented in the Draft SEIS do not indicate that significant adverse impacts would occur. Air quality impacts were conservatively modeled for the peak year of emissions under high and low development scenarios that bound Alternatives B, C, and D. Air quality impacts for Alternative D2 are projected to be lower than those modeled under the low development scenario. The air quality analyses performed reflected all of the development scenarios in the Draft SEIS. As reported in the Section 3.2.2, Air Quality, of the Draft SEIS, the cumulative air concentrations of criteria pollutants following hypothetical development are expected to be below the NAAQS and AAAQS. There is a modeled exceedance of the annual PM2.5 NAAQS approximately 320 miles west of the program area near Wainwright, Alaska with a modeled impact of 0.001 µg/m3 due to the hypothetical oil and gas development scenarios in program area. Therefore, the contribution of program area development to the exceedance is low. Modeled cumulative nitrogen deposition fluxes are below or within the range of critical loads for atmospheric deposition (levels of deposition below which no harmful effects to an ecosystem are expected).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	536	The only way for the agencies and the public to be able to accurately understand and evaluate the air quality impacts from the various alternatives in the DSEIS would be for the agencies to model the emissions and source parameters from each of the development scenarios and clearly present the results in a comparative format, providing a clear basis for choice among alternatives. So, in addition to the No Action Alternative and the High Development Scenario that reflects development under Alternative B, the agencies should also model the specific development scenarios in Alternatives C and D and present the results alongside the three scenarios modeled in the DSEIS.	BLM rigorously assessed air quality impacts in the program area by conducting a quantification of emissions due to oil and gas activities, incorporating near-field modeling impact analysis for a representative future large oil and gas development on the North Slope, and performing regional photochemical modeling and impact analysis for a baseline scenario, and for the peak year of emissions under the low and high oil and gas development scenarios to provide a lower and upper bound around Alternatives B, C, and D. Thus, Alternatives C and D are bounded by the low and high development scenarios that were modeled and air quality impacts were assessed for all action alternatives, including Alternatives C and D. Air quality impacts for Alternative D2 are projected to be lower than those modeled under the low development scenario. An emissions inventory was developed for each action alternative using information from the RFD.
Brisson	Brook	Trustees for Alaska	80131	537	The following table shows the difference between the modeled emissions for the Low Development Scenario compared to emissions from the most restrictive alternative presented in the DSEIS (i.e., Alternative D). Not only are emissions for all pollutants less than Alternative D, but emissions for the Low Development Scenario are not less by the same amount across all pollutants-i.e., emissions of NOx and VOC for the Low Development Scenario are less than corresponding emissions for Alternative D by a larger amount than for the other pollutants, as shown below: COASTAL PLAIN DSEIS OIL AND GAS EMISSIONS NOx CO VOC SO2 PM10 PM2.5 MODELED LOW DEVELOPMENT SCENARIO 771 731 712 61 199 93 ALTERNATIVE D 1,011 956 1,154 79 258 121 °A) DIFFERENCE 43% 31% 62% 30% 30% 30%	An emissions inventory was developed for each action alternative (including Alternative D) using information from the RFD. BLM performed regional photochemical modeling and impact analysis for a baseline scenario, and for the peak year of emissions under the low and high oil and gas development scenarios to provide a lower and upper bound around Alternatives B, C, and D. Thus, Alternatives C and D are bounded by the low and high development scenarios that were modeled and air quality impacts were conservatively assessed for all action alternatives, including Alternative D. Air quality impacts for Alternative D2 are projected to be lower than those modeled under the low development scenario.
Brisson	Brook	Trustees for Alaska	80131	538	The agencies should have modeled the impacts from Alternative C and should also have either modeled the impacts from the Alternative D development scenario, or simply modified Alternative D to align with the Low Development Scenario modeled in the DSEIS.	Three future-year scenarios were modeled: a baseline scenario, a high-development scenario, and a low-development scenario. Together the low and high development scenarios in the modeling provide a lower and upper bound around Alternatives B, C, and D. This ensured that impacts from Alternative C and Alternative D were also conservatively assessed in the Draft SEIS. Air quality impacts for Alternative D2 are projected to be lower than those modeled under the low development scenario.
Brisson	Brook	Trustees for Alaska	80131	541	Potential near-field impacts for the DSEIS are tiered to the near-field modeling performed for the Willow project. Specifically, the agencies chose to use Alternative E of the Willow Master Development Plan to represent "a conservative estimate of a future potential development in the Coastal Plain."(7) The Alternative E development scenario for the Willow project includes one processing facility, three drill pads, one operating center, one airstrip, and associated infrastructure. Even the lowest impact alternative in the Coastal Plain DSEIS (i.e., Alternative D) includes more potential facilities-e.g., six additional satellite pads beyond the one central processing facility and anchor well pad. And Alternative B of the Coastal Plain DSEIS includes up to four central processing facilities, 14 satellite pads, and 172 miles of roads. It does not appear that the agencies' use of the Willow project Alternative E modeling is necessarily representative of the Coastal Plain development scenarios considered in the DSEIS and, as a result, would likely underestimate potential project impacts. (7) DSEIS at 3-25	The tiering to the near-field modeling performed for Alternative E of the Willow Master Development Plan SEIS was done specifically to assess potential impacts from a single project like Willow. The regional photochemical modeling discussed in the Draft SEIS addresses the multiple pads/facilities discussed in the comment and in the action alternatives in the Coastal Plain Draft SEIS. Given that there is considerable uncertainty around where hypothetical development may occur, the modeling is based on BLM's best judgment on the potential distribution of development and infrastructure. As noted in ROP 6 (Chapter 2 of the Draft SEIS), project-specific terms and conditions required prior to authorizing any future oil and gas activity in the program area would be determined as part of site-specific NEPA analyses and would include one or more of the following: air modeling to analyze direct, indirect, and cumulative impacts, monitoring, emissions reduction plan and control strategies, etc.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	542	The agencies describe the emissions and emissions sources associated with potential development projects in the DSEIS-including during exploration, construction, development, production, and reclamation phases-and note that the emissions, "would occur in multiple locations in the Coastal Plain during overlapping time frames as additional fields are explored, developed, put into production, and subsequently abandoned and reclaimed."(8) The near-field air quality impacts must account for these overlapping emissions sources, including the potential for emissions from multiple processing facilities (e.g., up to four in Alternative B of the Coastal Plain DSEIS) occurring alongside exploration activities, and construction and development of wells and well sites. (8) DSEIS at 3-24	The air quality impacts from the overlapping emissions sources, including the potential for emissions from multiple processing facilities, were modeled in the regional photochemical modeling. Given that there is considerable uncertainty around where hypothetical development may occur, the modeling is based on Agencies' best judgment on the potential distribution of development and infrastructure. As noted in ROP 6 (Chapter 2 of the Draft SEIS), project-specific terms and conditions required prior to authorizing any future oil and gas activity in the program area would be determined as part of site-specific NEPA analyses and would include one or more of the following: air modeling to analyze direct, indirect, and cumulative impacts, monitoring, emissions reduction plan and control strategies, etc. The most recent and relevant analysis for near-field air quality impacts of oil and gas developments on the North Slope is the Willow Master Development Plan Final SEIS and ROD. There is considerable uncertainty around the specific features of a future development project in the program area, the modeling is based on BLM's best judgment on the potential distribution of development and infrastructure as well as appropriate bounding analysis of the potential emissions from the program area. If and when specific individual projects are developed in the program area, they would go through their own NEPA assessment.
Brisson	Brook	Trustees for Alaska	80131	543	Emissions estimates for all pollutants, with the exception of PM emissions under Alternative D, are significantly higher in the DSEIS than the Willow project (Alternative E). The DSEIS and Air Resources Technical Support Document only include a narrative description of the emission inventory development methodology and a summary table with peak annual emissions by Alternative, so it's unclear what assumptions and calculation methodologies lead to the variations in emissions estimates, by pollutant, for the DSEIS. And since the agencies did not model the near-field concentrations that could result from these emissions and source parameters, in the DSEIS, it is also not known what the potential air quality impacts from development under the alternatives in the DSEIS would be. It's possible, e.g., that NOx impacts could be much greater than what was shown for the Willow project since the NOx emissions modeled for Willow were significantly less than the NOx emissions in any of the alternatives in the DSEIS. And since there is no discussion of the potential differences between the Willow project and potential development in the Coastal Plain-e.g., the proximity of centralized processing facilities to well production sites, travel distances on unpaved roads, the density of development sites, etc.-it is possible that potential near-field impacts from Alternatives B, C, and D would be greater than what was estimated for the Willow project and relied upon in the DSEIS.	The air quality impacts from the various emissions sources, including emissions from multiple centralized processing facilities, well production sites, and unpaved roads were assessed in the regional photochemical modeling. Given that there is considerable uncertainty around where hypothetical development may occur, the modeling is based on BLM's best judgment on the potential distribution of development and infrastructure. As noted in ROP 6 (Chapter 2 of the Draft SEIS), project-specific terms and conditions required prior to authorizing any future oil and gas activity in the program area would be determined as part of site-specific NEPA analyses and would include one or more of the following: air modeling (of emissions and source parameters) to analyze direct, indirect, and cumulative impacts, monitoring, emissions reduction plan and control strategies, etc.
Brisson	Brook	Trustees for Alaska	80131	544	Not only is the reliance on the near-field Willow project modeling not a conservative representation of the scale of potential future development projects in the Coastal Plain under Alternatives B, C, and D, but the modeling BLM conducted of the Willow sources likely underestimated the potential air quality impacts from these sources. BLM did not explicitly model the impact of emissions from Willow's Alternative E; instead, BLM relied on previous modeling of Alternative B as representative of its Alternative E development scenario, despite key differences in the potential magnitude and location of emissions for these two development scenarios. Compared to Willow's Alternative B, Alternative E included, among other things: (1) longer drill sites (by 100 feet) to accommodate up to 80 extra wells; (2) significantly more air traffic trips during construction and developmental drilling; both (3) fewer on-road vehicle trips during construction and more trips during developmental drilling; (4) deferred drilling of one of the potential five well sites such that development of that site may occur during peak drilling and operations emissions; (5) relocation of one drill site, closer to the processing facility; etc. Many of these differences between Willow's Alternatives B and E have the potential to result in greater air quality impacts for Alternative E compared to Alternative B, depending on when and where emissions occur from the various project activities.	The most recent and relevant analysis for near-field air quality impacts of oil and gas developments on the North Slope is the Willow Master Development Plan Final SEIS and ROD. There is considerable uncertainty around the specific features of a future development project in the program area, the modeling is based on BLM's best judgment on the potential distribution of development and infrastructure as well as appropriate bounding analysis of the potential emissions from the program area. If and when specific individual projects are developed in the program area, they would go through their own NEPA assessment. In addition, as noted in ROP 6 (Chapter 2 of the Draft SEIS), project-specific terms and conditions required prior to authorizing any future oil and gas activity in the program area would be determined as part of site-specific NEPA analyses and would include one or more of the following: air modeling (of emissions and source parameters) to analyze direct, indirect, and cumulative impacts, monitoring, emissions reduction plan and control strategies, etc.

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Brisson	Brook	Trustees for Alaska	80131	545	The near-field modeling results presented for the Willow project likely underestimate air quality impacts in several additional ways. The model performance evaluation concludes that, "PM25 model results are systematically biased low at all sites during all quarters" meaning actual PM25 impacts may be even higher than what is predicted by the modeling results presented for the Willow project.(11) Also, the methods that BLM employed to conduct the NO2 and PM10 modeling for the Willow project-e.g., pairing modeled concentrations in time with temporally-varying background concentrations- are less conservative and may not fully account for meteorological conditions that could occur in future years.(12) Fundamentally, modeling is used as a tool to ensure that adverse impacts will not occur in the future, not simply to determine whether or not an adverse impact occurs over the period of time modeled. (11) BLM Willow Master Development Plan SEIS AQTS Attachment B at B-29. (12) See Megan Williams, Air Quality Review of the BLM's June 2022 Willow Master Development Plan Draft Supplemental Environmental Impact Statement (Aug. 2022)	The most recent and relevant analysis for near-field air quality impacts of oil and gas developments on the North Slope is the Willow Master Development Plan Final SEIS and ROD. There is considerable uncertainty around the specific features of a future development project in the program area, the modeling is based on BLM's best judgment on the potential distribution of development and infrastructure. If and when specific individual projects are developed in the program area, they would go through their own NEPA assessment. In such site-specific NEPA analyses, as noted in ROP 6 (Chapter 2 of the Draft SEIS), project-specific terms and conditions would be required prior to authorizing any future oil and gas activity in the program area and include one or more of the following: air modeling (of emissions and source parameters) to analyze direct, indirect, and cumulative impacts, monitoring, emissions reduction plan and control strategies, etc. Moreover, cumulative concentrations (which include project and background sources) of NO2 and PM10 were projected to be lower than the NAAQS and AAAQS from the regional photochemical modeling.
Brisson	Brook	Trustees for Alaska	80131	546	The near-field modeling for the Willow project looked at community impacts in Nuiqsut, which is approximately 25 miles from the Willow project area. In comparison, impacts to Kaktovik from development in the Coastal Plain could likely be more significant than the community impacts presented for the Willow project due to Kaktovik's closer proximity to potential emissions sources in the Coastal Plain. While Alternative B of the Coastal Plain DSEIS includes the greatest number of central processing facilities (four), even the potential impacts to Kaktovik under Alternative D could result in significant impacts depending on the proximity of the central processing facility sources to that community. Emissions from a central processing facility (or facilities) are significant, as discussed in more detail, below, in the context of flaring.	There is considerable uncertainty around the specific features of a future development project in the program area; the analysis is based on BLM's best judgment on the potential distribution of development and infrastructure. The air quality impacts at Kaktovik from all sources (program area sources and others) were addressed in the regional photochemical modeling which was used in the subsequent impact analysis for all alternatives and showed cumulative concentrations well below the relevant ambient air quality thresholds.
Brisson	Brook	Trustees for Alaska	80131	549	For all these reasons, BLM's modeling for the Willow project may underestimate potential air quality impacts, and therefore is likely to also represent an underestimate of potential air quality impacts from development in the Coastal Plain. The only way to know what the potential impacts of future development in the Coastal Plain will be is for the agencies to conduct a comprehensive quantitative near-field modeling analysis for all Alternatives in the DSEIS. At a minimum, the agencies should require the collection of representative background monitoring data and a modeling analysis of air quality impacts prior to any project-level approvals. The agencies should also consider additional mitigations to further reduce near-field short-term NO2 and PM impacts from any future development projects in the Coastal Plain to help ensure that significant air quality impacts do not occur.	BLM's assessment of air quality impacts included a quantification of emissions due to oil and gas activities for each action alternative using Alternative-specific RFD data. The most recent and relevant analysis for near-field air quality impacts of oil and gas developments on the North Slope is the Willow Master Development Plan Final SEIS and ROD. There is considerable uncertainty around the exact features (which need to be specified for near-field modeling) of a future development project in the program area, the modeling is based on BLM's best judgment on the potential distribution of development and infrastructure. If and when specific individual projects are developed in the program area, they would go through their own NEPA assessment, as noted in Section 3.2.2, Air Quality, in the subsection Impacts Common to All Alternatives. In such site-specific NEPA assessments, as noted in ROP 6 (Chapter 2 of the Draft SEIS), project-specific terms and conditions would be required prior to authorizing any future oil and gas activity in the program area and include one or more of the following: air modeling (of emissions and source parameters) to analyze direct, indirect, and cumulative impacts, baseline air monitoring, emissions reduction plan and control strategies, etc. Ambient air monitoring data will be reviewed at the project level permitting stage to determine a need for additional mitigation. Data are reported for five air quality monitoring stations which are located within approximately 100 miles of the Coastal Plain and have verified data in the last 5 years or at least 3 years of data within the past 10 years. In particular, baseline air monitoring is being conducted at Kaktovik in the Coastal Plain.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	551	BLM estimated flaring volumes for the Willow Processing Facility based on flare data from 2015 to 2017 at the Alpine Central Facility.(22) As with the 2020 and 2021 data, the annual flare volumes in 2015, 2016, and 2017 varied significantly from year to year, meaning the 3-year average used as the basis for BLM's estimate is significantly lower than the maximum flared volume in some years.(23) BLM also assumes a constant annual amount of flared gas for the proposed Willow development project, starting in year 6 and continuing until the end of the project. Since the amount of flared gas at the Alpine Central Facility varies significantly from year to year, the emissions estimates for flaring in the Willow project-and also assumed for future development in the Coastal Plain- are likely to be both more significant and more variable than what is presented in the DSEIS. The agencies should either assess potential impacts more in line with maximum flare volumes at the Alpine Central Facility, or cap flaring activity at the 3-year average levels assumed in the modeling. The SEIS cannot ignore the impacts from significantly higher flaring volumes that could occur. (22) BLM Willow Master Development Plan SEIS AQTSD Table 2.1-10 at 2-40 (23) Specifically, BLM reports that the Alpine Central Facility low-pressure flare 2015-2017 three-year average flare volume was 101.3 million cubic feet per year (MMSCF/year), with maximum flare volumes in each year of 173, 44, and 87 MMSCF in 2017, 2016, and 2015. The maximum flare volume in 2017 is 70% higher than the 3-year average value used in BLM's estimate. Similarly, the Alpine Central Facility high-pressure flare 2015-2017 three-year average flare volume was 76.9 MMSCF/year, with maximum flare volumes in each year of 24.9, 160.4, and 45.3 MMSCF in 2017, 2016, and 2015. The maximum flare volume in 2016 is 109% higher than the 3-year average value used in BLM's estimate.	The Willow project flaring assumptions and volumes have been addressed in Section 3.3.2.2 of the published 2023 Willow Master Development Plan Final SEIS and ROD.
Brisson	Brook	Trustees for Alaska	80131	552	Moreover, BLM's estimates for annual flaring emissions under Alternative B of the Willow development project-from the processing facility and drill sites-significantly changed from the draft SEIS to the final SEIS, with annual estimates of: (1) NOx emissions changing from over 300 tons to just 15 tons; (2) PM emissions changing from over 70 tons to just under 3 tons; (3) VOC emissions changing from over 3,000 tons to 161 tons; (4) hazardous air pollutants (HAP) emissions changing from over 600 tons to 68 tons; and (5) greenhouse gas emissions changing from over 800,000 tons to 37,619 tons.(24) It's not clear what this 95% reduction in emissions estimates across all pollutants can be attributed to, since BLM provided very little detail in its draft SEIS on how it estimated flaring emissions. Again, it would be important for the agencies to restrict flaring to the levels used in the development of the revised inventory in order to ensure that actual impacts from flaring align with the scenarios modeled. (24) See BLM Willow Master Development Plan DSEIS AQTSD Table 2.1-11 at 2-24 compared to BLM Willow Master Development Plan SEIS AQTSD Table 2.1-11 at 2-41	The Willow project flaring assumptions and volumes have been addressed in Section 3.3.2.2 of the published 2023 Willow Master Development Plan Final SEIS and ROD.
Brisson	Brook	Trustees for Alaska	80131	555	EPA has described control techniques for flares, based on the federal requirements in EPA's New Source Performance Standards (NSPS) (at 40 C.F.R. §60.8) and EPA's National Emission Standards for Hazardous Air Pollutants (NESHAPs) (at 40 C.F.R. §63.11).(28) (28) See EPA, Enforcement Alert, EPA Enforcement Targets Flaring Efficiency Violations, August 2012 at 1, https://www.epa.gov/sites/production/files/documents/flaringviolations.pdf . In addition, flares should be operated-at all times-in a manner consistent with good air pollution control practices for minimizing emissions, and flares should be monitored to ensure they are operated and maintained according to their design.(29) EPA has listed several other more detailed guidelines to ensure flares are properly operated.(30) Proper training of employees is also an important part of ensuring the flares are properly operated. (29) Id. at 2; see also 40 C.F.R. §63.172(e) and 60.482-10 (30) See, e.g., EPA, Enforcement Alert, EPA Enforcement Targets Flaring Efficiency Violations, August 2012 at 3 Finally, to enhance transparency and accountability the agencies should require operators to make flaring plans public and should require periodic, detailed reporting on flaring events, also shared with the public. Specifically, the agencies should require documentation of flaring episodes, as well as adequate public records of: (1) the amount of gas flared; and (2) the causes of flaring. Public documentation is critical in monitoring whether the agencies' assumption that upset flaring will only occur 10 hours per year is, in fact, a reasonable assumption. The agencies could also require operators to notify local communities and Tribes when flaring occurs. The final SEIS should adopt all of these measures through relevant stipulations and required operating procedures to minimize flaring events and mitigate the impacts of any flaring events that do occur.	Mitigation measures on flaring would be considered during the project-level NEPA process or at the permit stage and would consider EPA requirements.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Killo	Harrison	-	80166	4	We recognize the statement within the environmental impact state "Since limited information exists to estimate air quality impacts for all action alternatives, the site-specific analysis would be performed at the time a project is proposed to determine actual impacts at sensitive receptor locations and to identify any measures necessary to reduce impacts on air quality and public health".(U.S. Department of the Interior). Since the emissions air quality is estimated, we believe this is an insufficient analysis of environmental effects and more in-depth research should be conducted prior to approval. Furthermore, as stated in the EIS "Based on previous development projects and studies on the North Slope, the overall potential impact on human health is likely to remain low as all action alternatives are likely to be below applicable air quality standards for all phases of development (Section 3.2.2); however, people who are particularly vulnerable to respiratory problems (such as children, the elderly, and people with certain chronic illnesses) could experience health problems at locations or during episodes with poorer air quality" (U.S. Department of the Interior). We believe the risks to public health have not been fully considered and without proper evaluation of emissions. Estimates of these effects are a disservice to public health.	Site-specific individual community-level analysis of health effects from modelled concentrations of airborne contaminants would be required to accurately ascertain risk. A detailed public health risk assessment is beyond the programmatic scope of the SEIS. Moreover, no emissions data currently exists from which to derive these concentrations. Site-specific analysis would be performed at the time a project is proposed to determine actual impacts at sensitive receptor locations and to identify any measures necessary to reduce impacts on air quality and public health.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	168	The SEIS must rigorously assess the significant air quality impacts associated with all phases of oil and gas development program for the Coastal Plain, including seismic. Adequate NEPA analysis and compliance with the Clean Air Act requires the BLM and USFWS to model the air pollution impacts associated with each alternative, ensure prevention of significant deterioration of air quality, fully analyze a suite of enforceable mitigation measures, consider black carbon emissions, and address greenhouse gas emissions and climate change impacts associated with all phases of oil and gas development. As the Tribes pointed out during the 2018-2020 EIS process, the EIS's discussion of impacts to air quality, and related to contamination in subsistence foods was inadequate.(311) These concerns remain and the final SEIS must do more to model, analyze, and disclose the potential air quality impacts and in particular the localized air pollution impacts. The Tribes deeply understand the connection between air quality and quality of life and have personal experiences with the negative effects of current air pollution on the North Slope.	BLM rigorously assessed air quality impacts in the program area by conducting a quantification of emissions due to oil and gas activities, incorporating near-field modeling impact analysis for a representative future large oil and gas development on the North Slope, and performing regional modeling and impact analysis for the peak year of emissions under the low and high oil and gas development scenarios to provide a lower and upper bound around Alternatives B, C, and D. Thus, Alternatives C and D are bounded by the low and high development scenarios that were modeled and air quality impacts were assessed for all action alternatives, including Alternatives C and D. Air quality impacts for Alternative D2 are projected to be lower than those modeled under the low development scenario. An emissions inventory was developed for each action alternative using information from the RFD. The emissions are estimated for pre-development and production years for each hypothetical development using the Willow project Alternative E for a conservatively high estimate of the potential emissions. Additionally, potential emissions and air quality impacts from seismic activities were assessed in Section 3.2.2, Impacts Common to All Alternatives using data from the Bureau of Ocean Energy Management Arctic Air Modeling Study (a project of similar scale to activities in the Coastal Plain). While a formal Prevention of Significant Deterioration (PSD) increment consumption analysis is under the jurisdiction of the ADEC, information on the PSD analysis from the 2022 Willow Master Development Plan Final SEIS (which is used for tiering here) has been added to the Final SEIS. The PSD results for air concentrations from the Project at a nearby community were compared to PSD Class II increments. A detailed climate analysis was performed in Section 3.2.1, Climate and Meteorology, of the Draft SEIS. Emissions of GHGS were quantified for oil development and production activities as well as the downstream transportation, processing, and combustion of produced oil under each action alternative. Additionally, emissions from the change in foreign oil consumption due to oil production in the program area were estimated. The estimated monetary value of the global climate change impacts of the total net GHG emissions under each alternative was estimated using social cost of GHG metrics. Moreover, the annual net emissions under each alternative were put in context through comparison to other emission sources that the public can more readily comprehend (e.g., number of homes' energy use for one year, gallons of gasoline consumed). As noted in the Draft SEIS, black carbon is a component of the PM2.5 emissions presented for each action alternative in the Direct and Indirect Impacts of Section 3.2.2, Air Quality. As noted in ROP 7 (Chapter 2 of the Draft SEIS), a lessee/operator/contractor proposing a permanent oil and gas development would design and implement a monitoring study of all contaminants that could be associated with the proposed development in locally used subsistence foods. If it is determined that a portion of the increase in contamination is caused by the operator's activities, the BLM Authorized Officer may require changes in the operator's processes to reduce or eliminate emissions of the contaminant. Requiring mitigation measures is decided at the time of the ROD by the DOI decision-maker.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	169	To comply with NEPA, the agencies must do more to analyze the direct, indirect, and cumulative impacts of the project alternatives from all phases of oil and gas development on air quality. Importantly, this analysis must include the cascading effects that localized poor air quality could have on the food chain and ecosystems supporting subsistence foods. Note that the draft SEIS Air Quality section's discussion of the "production phase"(314) fails to mention methane (CH4) emissions, a common emission from venting and fugitive losses and a potent greenhouse gas. The SEIS should review satellite or other remote data measuring methane from comparable facilities-not modelled data because that has proven to underestimate emissions-and quantify likely methane emissions generated under each of the action alternatives (the greenhouse gas analysis does not break out methane emissions(315)). Aerial measurements typically result in greater emission quantities for oil and gas compared to modelled estimates, with aerial measurements approximately 60% higher.(316) (314) 314 Draft SEIS at 3-23. (315) Draft SEIS at 3-12. (316) Alvarez, R. A., Zavala-Araiza, D., Lyon, D. R., Allen, D. T., Barley, Z. R., Brandt, A. R., ... Hamburg, S.P. (2018). Assessment of methane emissions from the U.S. oil and gas supply chain. Science. 361, 186-188, https://www.science.org/doi/10.1126/science.aar7204. This early paper identified the discrepancy between the oil and gas methane estimates reported to U.S. EPA and contained in its greenhouse gas inventory compared to airborne measurements. Airborne measurements were ~60% higher than the inventory. See also the 2023 paper in the Proceedings of the National Academy of Sciences by Negron et al., footnote 13, which shows that the average carbon intensity, including both methane and CO2 throughout the Gulf of Mexico, was over twice the inventories.	BLM rigorously assessed air quality impacts in the program area by conducting a quantification of emissions due to oil and gas activities, incorporating near-field modeling impact analysis for a representative future large oil and gas development on the North Slope, and performing regional modeling and impact analysis for the peak year of emissions under the low and high oil and gas development scenarios to provide a lower and upper bound around Alternatives B, C, and D. Air quality impacts for Alternative D2 are projected to be lower than those modeled under the low development scenario. An emissions inventory was developed for each action alternative using information from the RFD. The emissions are estimated for pre-development and production years for each hypothetical development using the Willow project Alternative E for a conservatively high estimate of the potential emissions. Far-field modeling was conducted with the CAMx photochemical grid model to assess a range of potential air quality and AQRV impacts resulting from oil and gas development. Methane emissions from production (well drilling; air and ground transport for personnel and supplies; drill pad operations; central processing facility operations, support equipment such as turbines, heaters, incinerators, and flares; and power generation and injection turbines) are included in the CO2e emissions presented in Section 3.2.1, Climate and Meteorology, Local and Global Direct and Indirect Impacts of the Draft SEIS. The Air Resources Technical Support Document (Appendix R) separately provides annual methane emissions for oil development and production, transportation and processing, and downstream combustion. In Section 3.2.1 of the Draft SEIS, Climate and Meteorology, the section on Baseline Greenhouse Gas Emissions, discussed that the aerial observations of methane reported by Alvarez et al. (2018) showed an underestimation of methane emissions in the EPA inventory. This point has now been added to the Environmental Consequences section in Section 3.2.1 of the Final SEIS as well. The conclusions of Negron et al. (2023) are for offshore (US Gulf of Mexico) oil and gas production and are therefore not discussed here.
Adoko	Ashlee	State Of Alaska	80221	24	In addition, Chapter 3, page 3-31 discusses the impact on Air Quality Related Values (AQRVs) which look at impacts to surface water, vegetation, wildlife, soil, and visibility. These AQRV visibility standards are only applicable in Class 1 areas such as National Parks or National Wilderness Areas.(63) These Class 1 areas are defined for Alaska at 18 Alaska Administrative Code (AAC) 50.015(c)(2), Table 1. This page discusses visibility impairment on the Coastal Plain due to air emissions but makes comparisons with Denali National Park and Gates of the Arctic National Park. The distance from Kaktovik to Denali National Park is 526 miles, while the distance from Gates of the Arctic is 294 miles. Given that the Coastal Plain is located hundreds of miles away and subject to different meteorological and topographic conditions there does not appear to be any support for the conclusion that the visual impairment for these distant areas has any logical connection to the Coastal Plain. (63) 42 U.S.C. Sec. 7491; 40 C.F.R. Sec. 52.21(p). Please remove these discussions from the Leasing SEIS or provide an explanation that these are only best guesses by the BLM and not supported by available evidence.	AQRV impacts for visibility impairment were assessed in the regional photochemical modeling. While visibility impairment calculation is mandated only for Class I areas, the Class II visibility assessment was performed to set up a baseline for future studies of these areas. These also provide additional information to the decision-maker regarding impacts at these sites. Since the nearest Class I area to the program area, Denali, is outside the modeling domain, modeled visibility impacts at Gates of the Arctic (the closest area to Denali within the domain) are used as a surrogate for evaluation using background extinction and other visibility parameters for Denali.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Peter	Enei Begaye	-	80387	3	Additionally, the climate impacts have not been adequately addressed. As we know from some of our board members and advisory board members from Nuiqsut area on the North Slope, any amount of oil and gas drilling involves flaring. Flaring is significant and having significant impacts on local communities' health. That needs to be addressed within the Supplemental Environmental Impact Statement.	Flaring results in airborne concentrations of hazardous air pollutants (HAPs). Depending on the chemical composition of the gas being burned and the efficiency and temperature of the flare, hydrogen sulfide emissions can occur if hydrogen sulfide is present in large enough amounts in the natural gas. There may also be additional by-products formed if some of the chemicals used during the drilling or hydraulic fracturing process are converted to a gaseous form and are burned along with the natural gas. Flaring is also used to burn gases that would otherwise present a safety problem. It is common to flare natural gas that contains hydrogen sulfide (i.e., sour gas), in order to convert the highly toxic hydrogen sulfide gas into less toxic compounds. Site-specific individual and community-level analysis of health effects from modelled concentrations of airborne contaminants due to flaring would be required to accurately ascertain public health risk. A detailed public health risk assessment is beyond the programmatic scope of the SEIS. Moreover, no emissions data currently exists from which to derive these concentrations. Site-specific analysis would be performed at the time a project is proposed to determine actual impacts at sensitive receptor locations and to identify any measures necessary to reduce impacts on air quality and public health. Furthermore, flaring also contributes to climate change. The effects of climate on communities are described in detail in Section 3.4.11 Public Health, which states; “Further disruptions to subsistence patterns from global environmental and climatic changes could foreseeably have adverse effects on Kaktovik resident health, including changes to subsistence harvests; [...] changes to subsistence migration patterns and changing weather patterns and sea ice conditions could make travel more hazardous, increasing the risk of injury and trauma. Widespread thawing of permafrost would affect Kaktovik residents’ ability to store meat in deep cellars. This would increase the amount of spoiled food and the potential for food-borne illness.”

U.3.3 Alternatives

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Adoko	Ashlee	State Of Alaska	80221	8	Alternative B best accomplishes compliance with the Section 20001(c)(1) of PL 115-97. The Section 20001(c)(1) of PL 115-97 requires a) that BLM "establish and administer"(16) an "area-wide" (17) oil and gas program "for the leasing, development, production, and transportation of oil and gas in and from the Coastal Plain;"(18) and b) "offer...those areas that have the highest potential for the discovery of hydrocarbons."(19) (16) Pub. L. No. 115-97, Sec. 20001(b)(2)(A), 131 Stat. 2054 (2017). (17) Pub. L. No. 115-97, Sec. 20001(c)(1)(A), 131 Stat. 2054 (2017). (18) Pub. L. No. 115-97, Sec. 20001(b)(2)(A), 131 Stat. 2054 (2017). (19) Pub. L. No. 115-97, Sec. 20001(c)(1)(B)(i)(II), 131 Stat. 2054 (2017). Also, Alternative B best ensures compliance with the Section 20001(c)(1) of PL 115-97's requirement that each lease sale include "not fewer than 400,000 acres area-wide." Pub. L. No. 115-97, Sec. 20001(c)(1)(B)(i)(I), 131 Stat. 2054 (2017). In the Section 20001(c)(1) of PL 115-97, Congress directed that the prohibition in ANILCA section 1003 on development and production of oil and gas "shall not apply to the Coastal Plain"(20) and made it an Arctic National Wildlife Refuge (ANWR) purpose under ANILCA section 303(2)(B) "to provide for an oil and gas program on the Coastal Plain."(21) Further, Congress affirmatively mandated establishment of an "oil and gas program for the leasing, development, production, and transportation of oil and gas in and from the Coastal Plain."(22) (20) Pub. L. No. 115-97, Sec. 20001(b)(1), 131 Stat. 2054 (2017). (21) Pub. L. No. 115-97, Sec. 20001(b)(2)(B), 131 Stat. 2054 (2017). (22) Pub. L. No. 115-97, Sec. 20001(b)(2)(A), 131 Stat. 2054 (2017). Alternative B best satisfies the Section 20001(c)(1) of PL 115-97's mandate to "establish and administer" an "area-wide"(23) oil and gas program. BLM should make every effort to ensure that areas offered for lease "have the highest potential for the discovery of hydrocarbons."(24) Alternative B acknowledges the lack of current, conclusive data from exploratory seismic work necessary for identification of such "highest potential" areas but recognizes that such data will be developed during exploratory seismic work in leasable areas. (23) Pub. L. No. 115-97, Sec. 20001(c)(1)(A), 131 Stat. 2054 (2017). (24) Pub. L. No. 115-97, Sec. 20001(c)(1)(B)(i)(II), 131 Stat. 2054 (2017). b - Alternative D should not be considered. The Section 20001(c)(1) of PL 115-97 requires that at least 400,000 acres that "have the highest potential for the discovery of hydrocarbons"(25) be offered in each lease sale. Under the severe restrictions in Alternative D, such as withdrawals, setbacks, and no-surface-occupancy (NSO) stipulations, it appears there may not be enough acreage available for leasing to satisfy the law. Alternative D would designate more than half of the program area (797,700 acres) as unavailable for leasing and most remaining areas as NSO.(26) Offering these remaining areas as NSO, or with restrictive stipulations, may render them undevelopable and, essentially, unleaseable. Further, if Alternative D is selected, the State is concerned that the proposed lease terms and NSO restrictions will be too cumbersome to generate any meaningful interest in hydrocarbon development and, therefore, discourage leasing-thus thwarting the intent of the Section 20001(c)(1) of PL 115-97. The State maintains consideration of Alternative D is inconsistent with applicable law and the Lead Agencies should eliminate Alternative D from consideration in the Final SEIS. (25) Pub. L. No. 115-97, Sec. 20001(c)(1)(B)(i)(II), 131 Stat. 2054 (2017). (26) Leasing SEIS at 3-32. NEPA only requires an agency to consider "reasonable alternatives" to a proposed action, and reasonable alternatives includes alternatives that are technically feasible. 40 C.F.R. § 1508.1(z); 43 C.F.R. § 46.420(b). Here, Alternative D is not technically feasible. The Lead Agencies and many participants seem to have seized upon the potential of extended-reach directional drilling technology as a justification for extreme surface-use restrictions to access subsurface resources. While this technology does exist and has been used to great effect in development of some oil and gas fields, it is not generally appropriate for exploration drilling, nor has it been proven as technically feasible for the Coastal Plain. The existence of extended-reach drilling technology is not a valid basis for justifying such broad and extreme restrictions such as setbacks and NSO leasing for otherwise-indistinguishable areas. It should only be considered as a potential tool for surface impact mitigation during the development planning phase, once the oil and gas resource has been more fully delineated and the feasibility of such technology has been demonstrated in the Coastal Plain. Moreover, Alternative D does not meaningfully comply with the Section 20001(c)(1) of PL 115-97. Oil and gas in the Coastal Plain is underexplored. While best efforts have been made to identify areas of greatest hydrocarbon potential within the Coastal Plain, there is still limited data available to hydrocarbon developers. Once leases are taken, a prudent operator would need to conduct new seismic surveys to better understand the geology before spending significant dollars on drilling and an exploration well. If the area available to conduct seismic surveys is too small, the lessee will not get a good enough picture of the subsurface to identify drilling targets and reduce the high inherent risk of exploration drilling. In 2021, onshore exploration wells had a success rate of one in ten.(27) Couple that with the tens of millions of dollars, at a minimum, to drill an exploration well in the Alaskan arctic, and the economics become very challenging to prospective operators while the risk increases. The challenges of Alternative D are heightened by the fact that it restricts surface occupancy on the western side of the Coastal Plain in the area with the greatest hydrocarbon potential. To have a meaningful oil and gas program in the Coastal Plain, competitive, and fair lease terms must be offered. (27) Energy Institute, Global onshore drilling success rate dips to lowest on record. Accessed November, 7, 2023, available at: https://knowledge.energyinst.org/search/record?id=115186. By limiting where an operator can locate facilities or drill pads, Alternative D will render some reserves unrecoverable, even with horizontal drilling technology. Alternative D would likely require a significant hydrocarbon discovery for a project to be economic and, therefore, developed. Nearly all the acreage available for surface occupancy in Alternative D is not located in the area believed to have the highest hydrocarbon potential.(28) Although Alternative D permits surface occupancy on a minimal amount of acreage, it may not be in the right location to have a successful oil and gas program. Therefore, Alternative D may not provide a viable alternative to generate actual interest in leasing in the Coastal Plain, which contravenes the intent of the Section 20001(c)(1)	Each action alternative is feasible and would allow BLM to offer at least 400,000 acres of accessible subsurface in the second lease sale, in compliance with PL 115-97. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area. Alternative D2, which is a variation on Alternative D, emphasizes environmental protection by offering the minimum allowable acreage for leasing and further reducing potential impacts to key environmental resources such as polar bears via targeted no-leasing areas and other measures. The BLM and USFWS, in developing Alternative D2, took care to ensure that the additional protections contemplated in Alternative D2 do not collectively render the leasing program or associated exploration and development activities infeasible. As described in Section 2.4.5., the BLM and USFWS subject matter experts re-evaluated and adjusted certain Alternative D-derived lease stipulations and ROPs where necessary to ensure that the final version of Alternative D2 facilitates a viable leasing program and thus meets the SEIS purpose and need and the requirements of the Tax Act.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Adoko (cont.)	Ashlee (cont.)	State Of Alaska (cont.)	80221 (cont.)	8 (cont.)	of PL 115-97. (28) Leasing SEIS Map 3-8. An oil and gas developer may look elsewhere around the world to explore where development is more certain before taking the risk to explore in the restrictive Coastal Plain.	(see above)
Adoko	Ashlee	State Of Alaska	80221	14	The Leasing SEIS erroneously considers limiting the total acreage available to seismic operations and imposes restrictions on seismic operations. Alternatives C and D inappropriately constrain seismic operations. The Lead Agencies should not consider any alternative that would limit the total acreage available to seismic operations or impose restrictions on seismic operations. The Tax Act does not permit such an alternative. Rather, it directs that "the Secretary shall manage the oil and gas program on the Coastal Plain in a manner similar to the administration of lease sales under the Naval Petroleum Reserves Production Act of 1976 (42 U.S.C. 6501 et seq.) (including regulations)."(41) Exploration is authorized throughout the National Petroleum Reserve in Alaska - including in areas with significant subsistence, recreational, fish and wildlife, historical, and scenic values - as long as it is conducted in a way that "assure[s] the maximum protection of such surface values to the extent consistent with the requirements of [the Naval Petroleum Reserves Production Act] for the exploration of the Reserve."(42) Congress thus opened the entire Section 1002 Area to seismic exploration, and the Lead Agencies should not consider an overly restrictive alternative. The Lead Agencies therefore should modify Alternatives C and D to eliminate their constraints on seismic operations. (41) Pub. L. No. 115-97, Sec. 20001(b)(3), 131 Stat. 2054 (2017). (42) 42 U.S.C. Sec. 6504(a). In the 2019 EIS, BLM properly elected to analyze proposals for seismic operations on a site-specific basis. BLM authorizes seismic operations upon proposals from permit applicants(43) and must comply with NEPA prior to approving seismic operations.(44) The inclusion of an additional alternative, or additional restrictions, in the Leasing SEIS to address seismic operations would be based on speculation as to where and how seismic operations would occur. This hypothetical exercise risks both delaying completion of the NEPA analysis and imposing overly burdensome management measures. Instead, BLM can more efficiently analyze and manage the potential impacts of seismic operations once concrete plans are proposed. (43) 43 C.F.R. Sec. 3152.2. (44) 43 C.F.R. Sec. 3152.2(a).	The alternatives were developed by subject matter experts from both the BLM and USFWS to implement Section 20001 of PL 115-97 and to account for all five purposes of the refuge, none of which are superseded by any other. Seismic operations are of limited utility in areas not available for leasing but may cause considerable impacts to surface resources.
Adoko	Ashlee	State Of Alaska	80221	15	The lease stipulations and ROPs set forth in all of the action alternatives are overly restrictive and thus inconsistent with the Tax Act. The Lead Agencies must not impose such broad NSO restrictions or limit access to such large areas of the Coastal Plain to the extent that future development is restricted, and Congress's mandate is subverted. Under all of the action alternatives, most lands with the highest hydrocarbon potential are overly burdened with NSO stipulations. It is lawful and prudent to balance surface resource considerations with subsurface resource exploration development. The bias on the part of the Lead Agencies and some other parties involved in this process is so skewed towards preserving surface resources that the concept of "balance" seems to have been ignored. The lease stipulations and ROPs under these alternatives pose unnecessary challenges to future oil and gas activities, including through access limitations. These kinds of administrative limitations would contravene the federal law mandating the Program. Instead, it is incumbent upon the Lead Agencies to provide maximum flexibility to future decision-makers as new, better, or activity-specific information becomes available, and to rely on permitting processes to facilitate responsible development, production, and transportation of oil and gas resources to and from the Coastal Plain. Congress set the applicable limit on surface facility development at 2,000 surface acres: "In administering this section, the Secretary shall authorize up to 2,000 surface acres of federal land on the Coastal Plain to be covered by production and support facilities..."(45) This is a negligible footprint in the 1.5-million-acre Coastal Plain and the 19.3-million-acre ANWR, and significantly protective. Any changes to BLM's analysis of the limitation in the 2019 ROD must acknowledge the interpretative position of the agency taken to date and explain the reasons for the new interpretation. (45) Pub. L. No. 115-97, Sec. 20001(c)(3) (emphasis added).	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to implement Section 20001 of PL 115-97 and to account for all five purposes of the refuge, none of which are superseded by any other.
Adoko	Ashlee	State Of Alaska	80221	16	The State recommends that the Lead Agencies provide specific protection of surface areas where needed and only after areas that have the highest prospectivity acreage has been identified. Identifying areas for oil and gas leasing while restricting surface uses necessary to access subsurface resources is functionally equivalent to designating surface areas as unavailable for "development, production, and transportation of oil and gas in and from the Coastal Plain,"(46) and conflicts with Congress's determination of the permissible footprint for the mandated Program and the appropriate balance for protection of other resources.(47) (46) Pub. L. No. 115-97, Sec. 20001(b)(2)(A). (47) This approach is consistent with the Tax Act, which requires that the Secretary manage the Program "in a manner similar to the administration of lease sales under the Naval Petroleum Reserves Production Act of 1976...(including regulations)." (Pub. L. No. 115-97, Sec. 20001(b)(3).) The Naval Petroleum Reserves Production Act of 1976 and its regulations provide specific protections of surface areas where needed. Instead, the State recommends that the Lead Agencies recognize that additional stipulations needed to protect surface resources and special areas may be imposed at the time the surface use authorizations and permits to drill are approved, and as the NEPA and permitting processes move forward to review specific development proposals. The overlapping regulatory agencies, including the Lead Agencies, the State, and the NSB, with robust participation from North Slope resident stakeholders, including the Native Village of Kaktovik, can develop specific protection of surface areas where needed.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to implement Section 20001 of PL 115-97 and to account for all five purposes of the refuge, none of which are superseded by any other.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Adoko	Ashlee	State Of Alaska	80221	17	The State has demonstrated over many past decades that oil and gas exploration, development, production, and transportation can occur safely and responsibly with the appropriate regulatory controls and environmental protections. The State recommends that the Lead Agencies avoid restrictions on surface areas that would restrict "development, production, and transportation of oil and gas in and from the Coastal Plain"(48) that would violate the Tax Act. Restricting beyond the 2,000-surface-acre limit is functionally equivalent to designating surface areas as unavailable for "development, production, and transportation of oil and gas in and from the Coastal Plain,"(49) and conflicts with Congress's determination of the permissible footprint for the mandated Program and the appropriate balance for protection of other resources. (48) Pub. L. No. 115-97, Sec. 20001(b)(2)(A), 131 Stat. 2054 (2017). (49) Pub. L. No. 115-97, Sec. 20001(b)(2)(A), 131 Stat. 2054 (2017). Instead, the State recommends that BLM recognize that additional stipulations needed to protect surface resources and special areas may be imposed at the time the surface use plan and permit to drill are approved, and as NEPA and permitting processes move forward to review specific development proposals. The regulatory agencies, including BLM, can develop specific protection of surface areas where needed. Therefore, the Lead Agencies should revise the lease stipulations and ROPs under the action alternatives to afford more flexibility to operations once proposed.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to implement Section 20001 of PL 115-97 and to account for all five purposes of the refuge, none of which are superseded by any other.
Adoko	Ashlee	State Of Alaska	80221	28	Document Reference Chapter 2, Table 2.3, Page 2-15 Reviewer MW Agency DFG Resource/Topic Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief Comment: The ADF&G continues to caution against developing lease stipulations in the Coastal Plain Program Area concerning Porcupine Caribou Herd future calving and post-calving distributions based on modeled predictions presented in Severson et al. (2021).	The most recent and best available science is included in the SEIS.
Adoko	Ashlee	State Of Alaska	80221	29	Document Reference Chapter 2, Table 2.3, Page 2-15 Reviewer MW Agency DFG Resource/Topic Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief Comment: The models as presented provide neither tests of key assumptions used in making those projections nor an assessment of the uncertainty in those projections. Without a full accounting of the uncertainty in the projections, which is likely to be substantial, it is not possible to assess whether the projected caribou distributions are any more likely than the current caribou distributions.	All models lack certainty. The most recent and best available science is included in the SEIS.
Adoko	Ashlee	State Of Alaska	80221	30	Document Reference Chapter 2, Table 2.3, Page 2-15 Reviewer MW Agency DFG Resource/Topic Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief Comment: Lacking a clear presentation, acknowledgment, or consideration of the sources or the amount of uncertainty in the paper, the implication from the publication is that the presented projections are likely to happen.	All models lack certainty. The most recent and best available science is included in the SEIS.
Adoko	Ashlee	State Of Alaska	80221	31	Document Reference Chapter 2, Table 2.3, Page 2-15 Reviewer MW Agency DFG Resource/Topic Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief Comment: The Severson et al. (2021) publication is cited 31 times in the Coastal Plain DSEIS, 17 times singularly in relation to the modeled future calving and modeled future post-calving Porcupine Caribou Herd distributions in the Coastal Plain Program Area, and 3 times singularly in Lease Stipulation 6 for Alternative D.	The most recent and best available science is included in the SEIS.
Adoko	Ashlee	State Of Alaska	80221	32	Document Reference Chapter 2, Table 2.3, Page 2-15 Reviewer MW Agency DFG Resource/Topic Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief Comment: The Coastal Plain DSEIS does not acknowledge the lack of certainty in these modeled predictions and therefore also implies that the Severson et al. (2021) predictions are likely to happen.	All models lack certainty. The most recent and best available science is included in the SEIS.
Adoko	Ashlee	State Of Alaska	80221	33	Document Reference Chapter 2, Table 2.3, Page 2-15 Reviewer MW Agency DFG Resource/Topic Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief Comment: This lack of acknowledgement of the uncertainty in the predictions deprives decision makers of essential information.	All models lack certainty. The most recent and best available science is included in the SEIS.
Adoko	Ashlee	State Of Alaska	80221	34	Document Reference Chapter 2, Table 2.3, Page 2-15 Reviewer MW Agency DFG Resource/Topic Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief Comment: The SDEIS should acknowledge the lack of certainty in the Porcupine Caribou Herd future calving and post-calving distributions based on modeled predictions presented in Severson et al. (2021).	All models lack certainty. The most recent and best available science is included in the SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Adoko	Ashlee	State Of Alaska	80221	5	Section 3 - Exploratory seismic work in the Coastal Plain should be allowed to move forward. The State maintains that BLM should allow exploratory seismic work in the Coastal Plain to move forward, as soon as possible, using the best management practices and mitigation measures that have been successfully developed and implemented in other parts of the State, including on other federally managed lands. Congress requires that BLM "offer...those areas that have the highest potential for the discovery of hydrocarbons."(11) Given the lack of current data from exploratory seismic work necessary for identification thereof, the State maintains that BLM should use its existing authority to allow exploratory seismic work in the Coastal Plain to move forward as soon as possible to identify the "areas that have the highest potential for the discovery of hydrocarbons,"(12) consistent with the Tax Act, and ensure that such data will be acquired and such areas will be identified in the future. (11) Pub. L. No. 115-97, Sec. 20001(c)(1)(B)(i)(II), 131 Stat. 2054 (2017). (12) Pub. L. No. 115-97, Sec. 20001(c)(1)(B)(i)(II), 131 Stat. 2054 (2017). BLM is equipped with existing authority to allow exploratory seismic work in the Coastal Plain to move forward as soon as possible under 43 C.F.R. part 3150, under authority of the Mineral Leasing Act of 1920, Alaska National Interest Lands Conservation Act (ANILCA, 16 U.S.C. sections 3101 et. seq.), and the Department of the Interior Appropriations Act, Fiscal Year 1981. Program activities in the Coastal Plain should proceed predictably, in a timeframe that allows progress in accordance with well-defined State, federal, and local processes and with robust input from Alaskan stakeholders. The development of new energy resources in the Coastal Plain will benefit Alaska, the local communities of the North Slope, and the Nation. Revenues derived from new production will help sustain public services and the activity will provide new job opportunities while boosting the economy. Further there is no evidence that exploratory seismic work would negatively impact listed polar bears. The exploratory program was designed in a manner that reduced the take of polar bears to acceptable levels.	Appendix C explains the different types of seismic exploration that are analyzed in the SEIS. Seismic exploration can be conducted absent a lease (a lease is not required). Separate NEPA analyses would be required for all seismic exploration applications, which would analyze the site-specific impacts.
Agerbak	Linda	-	6393	1	Please develop an alternative that protects the coastal plain from future oil leasing. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will exacerbate these stresses, cause irreparable harm to this irreplaceable region, and to the millions of birds and other animals that migrate there every summer from around the world, and undermine urgent action to address the climate crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for lease sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Allen	Mark	Government of Canada	79200	11	Canada acknowledges that the Alternatives in the draft SEIS now have a range of allowable surface disturbance acres rather than each Alternative allowing up to 2,000 acres of footprint at any one time. Canada still sees Alternative B as having the greatest amount of risk for negative impacts on the main conservation purposes of our treaties and agreements. There is no indication in the description of Alternative B how it balances the multiple purposes of the Refuge.	Alternative B prioritizes the new Arctic Refuge purpose to provide for an oil and gas program in the Coastal Plain and generally presents the greatest negative impacts to the first four purposes of the Arctic Refuge, including conservation, treaty obligations, subsistence uses, and water quality/quantity. Table 1-2 provides the location of SEIS Sections describing impacts by purpose.
Allen	Mark	Government of Canada	79200	12	While Alternative D-1 from the previous EIS was carried forward with minor revision to become Alternative C in the current draft SEIS, Canada views the development potential under this alternative as having too many potential adverse effects to our shared species and the conservation purposes of our treaties and agreements. Canada acknowledges the effort in creating the entirely new Alternative D that, according to the draft SEIS, "...meets the legal requirements to conduct a second least sale as required..." by U.S. law while making approximately half of the Coastal Plain unavailable for leasing and the making most of the other half restricted under a No Surface Occupancy stipulation. Consistent with our previous comments, Canada would prefer to see an option that provides the minimum acreage (400,000 acres) for bid, in order to minimize the potential negative impacts on Indigenous Peoples and our shared species.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Allen	Mark	Government of Canada	79200	14	In Alternatives C and D, seismic exploration is specifically restricted to only leased areas. This restriction is appropriate to minimize cumulative effects of an area-wide program on areas not held by leases. Alternative B, by allowing seismic exploration across the entire Coastal Plain, does not address either of Canada's previous concerns about accounting for the cumulative effects of seismic exploration or project segmentation. Canada seeks clarification if Lease Stipulation 54(b) (Alternative C) and 5(c) (Alternative D) means no seismic exploration can occur in those specific areas, even if leased.4 Lease Stipulation 5 - Coastal Polar Bear Denning River Habitat	The text in Alternatives B and C was brought forward from the Draft SEIS with only minimal updates, as appropriate. Under each action alternative seismic exploration is limited to those areas available for leasing.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Allen	Mark	Government of Canada	79200	24	Canada appreciates the clarification in section 1.9.1 of the draft SEIS that the 2,000 acre limit is now a firm cap, regardless of reclamation, and that it includes gravel pits as well as all lease and non-lease footprints on federal land. Canada seeks clarification if the adoption of Alternative C or D disturbance acreage estimates (1,464 and 1,040 acres respectively) in the future Record of Decision means that the acreage allowed for disturbance is capped at the value associated with that Alternative or if the Bureau of Land Management and Fish and Wildlife Service are legally obligated to eventually allow up to 2,000 acres regardless of the chosen Alternative.	The 2,000-acre cap is set by statute. Regardless of which alternative is selected in the ROD, per Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section."
Allen	Mark	Government of Canada	79200	22	Canada notes improvements with how the future value of the Coastal Plain to Porcupine Caribou are now included by introducing the notion of "comprehensive calving habitat" from the information provided in Severson et al. (2021) and adjusting the size of the no-lease area in Alternative D. On the topic of using the most recent literature, the current inclusion of Prichard et al. (2022) on caribou avoidance of roads could be supplemented by Smith and Johnson (2023)6 and Severson et. Al. (2023)7. SEIS biologists are also encouraged to reach out to caribou colleagues8 in Nunavut to get their unpublished reports on caribou deflection delays and Zones of Influence from mining roads in that territory. The new literature should be reviewed to finalize the road/traffic ROP. 6 Smith, A. and C.J. Johnson. 2023. Why didn't the caribou (Rangifer tarandus groenlandicus) cross the winter road? The effect of industrial traffic on the road-crossing decisions of caribou. Biodiversity and Conservation 32: 2946-2959. 7 Severson, J.P., T.C. Vosburgh and H. E. Johnson. 2023. Effects of vehicle traffic on space use and road crossings of caribou in the Arctic. Ecological Applications https://doi.org/10.1002/eap.2923 8 Two contacts are Jonathan Pynn jpynn@gov.nu.ca and Mitch Campbell mcampbell1@gov.nu.ca Based on the above literature, the Lease Stipulation 6 under Alternative D indicating that "Sections of road would be evacuated whenever a large number of caribou (approximately 100 or more) approach the road within 2 miles (May 15 - July 28)" should be revisited and verified if temporal daily or seasonal restrictions might be more appropriate. Canada does not yet understand how the value of "100 or more" caribou was chosen in relation to aggregation sizes at various times or behavioral activities while caribou are in the Coastal Plain. For instance, what is the significance of 100 caribou in this situation? Is it meant to be protective of groups of caribou that size or broadly indicative of a pragmatic worker assessment of "lots of caribou" or something else?	Smith and Cameron (1985) found that groups of greater than 100 caribou, common when under insect harassment and attempting to move to insect-relief areas at the coast, have greater difficulty crossing roads and pipelines than smaller groups. There is an increased potential for impacts to caribou as herd numbers increase in the vicinity of roads and therefore, this number is used as a parameter to minimize potential impacts.
Allen	Mark	Government of Canada	79200	44	Canada requests that data collected and monitoring studies conducted under Lease Stipulations and Required Operating Practices be deemed non-proprietary.	Some of the information collected may not be made available to the public due to regulations protecting sensitive information or the proprietary nature of the data prohibits it from release.
Baran	Eleanor	-	80165	12	Through the 2015 Paris Agreement, the U.S. has an NDC valid through 2030, with goals for the U.S. to reduce its GHG emissions to below 2005 levels by 2030 and reach 100% clean electricity by 2050. Subtitle B of the Energy Act of 2020 encourages the production of renewable energy, including wind, solar, and geothermal energy, on federal land. President Biden's Executive Order 14057, "Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability," requires the federal government to "lead by example to achieve a carbon pollution-free electricity sector by 2034 and net-zero emissions economy-wide by 2050. The 2022 Inflation Reduction Act created several tax credits for the production of clean energy, and the BLM even proposed a new rule in 2023 titled "Rights-of-Way, Leasing and Operations for Renewable Energy" to facilitate responsible solar and wind energy development on public lands managed by BLM. It is reasonable for the BLM to consider the development of renewable energy as a viable alternative to the Leasing Program required by the Tax Act. As previously mentioned, the Tax Act is fundamentally at odds with many pieces of legislation. While BLM must follow its statutory duties as described in the Tax Act, it also needs to consider other laws and regulations concerning renewable energy development. BLM must consider renewable energy as a reasonable alternative in the Leasing SEIS and thus weigh all relevant impacts in its analysis.	As described in Section 2.4.1, "An alternative that considers development of alternative or renewable energy was considered but eliminated from detailed analysis. Such an alternative does not meet the purpose of and need for an oil and gas program in the Coastal Plain and is not consistent with PL 115-97."
Baran	Eleanor	-	80165	8	Each alternative in the Leasing SEIS has directives for setback areas, which require essential oil and gas support facilities to remain a certain distance from natural ecosystems, a requirement under 20001(c)(2) of PL 115-97. However, all three scenarios offer exemptions "if the operator can demonstrate: (1) there are no practical alternatives to locating facilities in these areas; (2) the proposed actions would maintain resource functions; and (3) permanent facilities are designed to withstand a 100-year flood." Setting such a broad precedent for exemptions designed to protect the environment undermines enforceability. Instead, the Leasing SEIS should strictly prohibit oil and gas development within four miles of rivers and streams.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed. Terminology does and will reflect the best available science and management practices. Additionally, this language is necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Baran	Eleanor	-	80165	10	Similar to polar bear protections, there are many exemptions to the safety measures for porcupine caribou herds. For instance, while leasing is prohibited in calving habitat areas, well pads, roads, airstrips, and pipelines could be permitted, and construction activities using "heavy equipment" can only be suspended when there are "significant numbers" of caribou. The Leasing SEIS did not describe "heavy equipment" in further detail, which leaves much ambiguity. Further, the requirement for stopping activities in the presence of a significant caribou population implies that construction is allowed to commence if the number of present caribou exceeds a certain threshold. In short, the protections for caribou in the SEIS only protect larger herds, meaning many caribou will go unprotected. , Further, the Leasing SEIS protections for caribou are insufficient and fail to describe the potential ramifications of increased activity in a wildlife-sensitive area. For example, the Leasing SEIS outlines speed restrictions around calving areas, limiting traffic to 15 miles per hour when caribou are within two miles of the road. However, the SEIS fails to indicate who will monitor these precautions. The surest way to guarantee animal safety is to prohibit all oil and gas development in the Coastal Plain. In addition, the Leasing SEIS permits stockpiling of equipment in post-calving habitats. While this allowance is meant to minimize road traffic during the calving period, the Leasing SEIS should recognize the unintended ramifications that could occur from stockpiling equipment in a sensitive area, or at the very least, the Leasing SEIS should outline stockpiling safety requirements.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed. Exemptions are necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions.
Bare	Eric	-	45477	1	Surface occupancy rules are too vague and undefined. That usually means really destructive activity will be permitted - without environmental review.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Bigham	Angela	-	79150	1	There should be an alternative to lease the Coastal Plain for carbon credits instead of development.	This proposed alternative does not meet the purpose and need to implement an oil and gas program in the Coastal Plain and is not consistent Section 20001 of PL-115-97.
Bigham	Angela	-	79150	2	ROP 35 under alternatives B and C do not meet the objective to reclaim land to its previous condition and use. The requirements should be similar to alternative D.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to implement Section 20001 of PL 115-97 and to account for all five purposes of the refuge, and vary across the alternatives.
Bigham	Angela	-	79150	3	Under alternatives B and C, ROPs 3, 8, 9 11, 12, 13, 16, 19, 22, 24, 28, are insufficient to meet the objectives and will lead to unnecessary substantial negative irreversible impacts to aquatic habitats and diversity in the Coastal Plain of the Arctic Refuge.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to implement Section 20001 of PL 115-97 and to account for all five purposes of the refuge, and vary across the alternatives.
Boldrick	Lauren	EPA Region 10	80058	10	EPA recommends that the FSEIS consider a ROP under its "Waste Prevention, Handling, Disposal, Spills, And Public Safety" considerations to mitigate the impacts of degraded and contaminated sites to subsistence food resources. EPA recommends that the ROP complement the ANWR Comprehensive Conservation Plan's Objective 2.7 (Restoration of Impaired Sites), and include sites prioritized for cleanup in the DSEIS Table I-3 which details degraded and contaminated sites in the vicinity of the Coastal Plain.(12),(13) (12) DSEIS page 3-106 (13) DSEIS page I-2	This suggestion has been added to Alternative D2 ROP 2, Part g: "All plans for waste prevention, handling, disposal, spills, and public safety will comply with the Arctic National Wildlife Refuge's CCP."
Boldrick	Lauren	EPA Region 10	80058	20	EPA also recommends the NEPA analysis describe resilience measures associated with the proposed activities on the lease areas, consistent with the 2023 CEQ guidance, and mechanisms for implementing these measures. For example, the NEPA analysis could include a description of new ROPs to protect public health, safety, and the environment by ensuring project design documents include analysis of the effects of climate change on the proposed infrastructure (e.g., pipelines, drill pads) to prevent the occurrence of stranded infrastructure. This description of new ROPs could include mechanisms such as requiring lessees conduct risk and vulnerability assessments for the specific project location to the effects of climate change, consider potential siting issues and project design, and ensure consistency with State, Tribal, and local adaptation plans. EPA encourages this analysis consider climate impacts on the projected life of the project in addition to the project's impacts to anticipated climate change events (e.g., increased disturbance due to use of gravel, increased particulate emissions from entrained road dust).(29) EPA believes this analysis will help prevent potentially stranded infrastructure from being constructed.(30) (29) Please see comments about alignment with ANWR's CPP. (30) Semieniuk, G., Holden, P.B., Mercure, JF. et al. Stranded fossil-fuel assets translate to major losses for investors in advanced economies. Nat. Clim. Chang. 12, 532-538 (2022). https://doi.org/10.1038/s41558-022-01356-y	Language has been added in the descriptions of Alternatives D and D2 in Chapter 2 noting how these alternatives would contribute to protecting public health, safety and the environment from impacts from climate change.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Boldrick	Lauren	EPA Region 10	80058	23	The DSEIS states that significant mitigation must be taken to address the serious impacts of global warming in the leasing program area and on the villages that would be impacted by development.(31),(32),(33) EPA notes that Executive Order 14096 states that "we must advance environmental justice for all by...addressing climate change and its effects" and "recognize, honor and respect the different cultural practices- including subsistence practices." EO 14096 goes on to state that each agency shall, as appropriate and consistent with applicable law "evaluate relevant legal authorities and, where available and appropriate, consider adopting or requiring measures to avoid, minimize, or mitigate disproportionate and adverse human health and environmental effects (including risks) and hazards of Federal activities on communities with environmental justice concerns, to the maximum extent practicable, and to address any contribution of such Federal activities to adverse effects-including cumulative impacts of environmental and other burdens-already experienced by such communities." (31) DSEIS page 3-6 (32) DSEIS page 3-12 (33) DSEIS page 3-15 EPA's October 2021 NOI letter recommended assessing the extent to which the program is consistent with policies to limit GHG emissions and consider pathways to achieve consistency with these policies. In light of the DEIS statement about the need for significant mitigation to address the impact of climate change on the village impacted by the proposed project, EPA recommends the NEPA analysis describe mechanisms for achieving GHG emission goals, the benefits of reducing direct and indirect GHG emissions from the oil and gas leasing program, as well as ways to implement these mechanisms. For example, an implementation method could be to include in the ROP the objective to protect public health, safety, and the environment by achieving net-zero emissions from oil and gas activities within the Refuge; and a requirement that GHG emissions associated with exploration and development activities and production be offset within Alaska through biological or geological carbon sequestration. EPA notes that the Inflation Reduction Act includes the Section 45Q tax credit available for U.S.-based carbon capture and sequestration projects(34) and may provide additional economic opportunities. For example, the first carbon management project was implemented in 2006 by an Alaska Native corporation consortium, and as of 2019, the carbon offSEIS registered in Alaska belonging to Alaska Native corporations were worth \$370 million and constituted the biggest forestry participants in the California system.(35),(36) (34) 26 U.S. Code § 45Q (35) E.g., the 8,200-acre Afognak Forest Carbon Project. (36) State of Alaska, Office of the Governor. (January 12, 2023). Governor Dunleavy Outlines Carbon Management Bill Package. https://gov.alaska.gov/governor-dunleavy-outlines-carbon-management-bill-package/	The BLM and FWS recognize the importance of accounting for adverse impacts from GHG emissions that could result from activities conducted pursuant to the leasing program. The feasibility of using low-GHG emission vehicles and equipment and other emissions reduction methods will be assessed for each proposal when submitted. As illustrated in Table 3-1, the contribution of GHG emissions from exploration, development, and production activities themselves would be small in comparison to the contribution of GHG emissions from downstream combustion of produced oil and associated market effects. As explained in Appendix C.6., there are many uncertainties with projecting future petroleum activities, such as the timing of oil field discoveries and associated development and the amount of economically recoverable oil. What is known, however, is that even in an optimistic scenario, it takes a number of years to progress from leasing to exploration to development to production, transport, and downstream consumption. Thus, there is a significant time lapse between the leasing phase and the manifestation of GHG emissions from downstream consumption and associated market effects. Meanwhile, the Department of the Interior currently lacks an established and widely applicable program for offsetting GHG emissions that directly or indirectly result from oil and gas leasing, or standards establishing which party in the long causal chain between leasing, exploration, development and production, transportation, and consumption should be responsible for offsetting such emissions. In the absence of such a program or at least generally acceptable standards of how one would be implemented, it is infeasible to impose such a requirement at the leasing stage of an oil and gas program, especially one in which actual production is highly uncertain and likely in the distant future. A more prudent and effective approach is to refrain from prescribing a potentially problematic standard now, and to instead revisit potential mitigation strategies when reviewing specific proposals in the future, when project GHG emissions inventories are available and more effective and standardized mitigation and offset strategies are likely to exist.
Boldrick	Lauren	EPA Region 10	80058	26	EPA appreciates the NEPA analysis describing the stipulations of ROP 6 of air quality modeling and analysis of impacts depending on a list of eight factors that may weigh towards the need for assessment. The analysis focuses on comparison of tiered impacts to the National Ambient Air Quality Standards (NAAQS) and Hazardous Air Pollutants (HAP) risk thresholds. In DSEIS Appendix Q, the tiered air quality impact analysis provides an efficient and useful evaluation of impacts that could be expected from development projects. With respect to the analysis, EPA recommends including one year of meteorological monitoring be conducted in tandem with the one year of baseline ambient air monitoring.(39),(40) EPA also recommends considering localized impacts on wildlife and sensitive vegetation that protected wildlife may depend on, such as including additional emphasis to ROP 6 to account for an assessment of criteria and HAP localized impacts.(41) (39) DSEIS page 2-32 (40) DSEIS page 3-24 (41) DSEIS page 2-32	BLM has been operating an air quality monitoring station in Kaktovik and the results from those monitoring efforts are hosted by the North Slope Science Initiative (https://catalog.northslopescience.org/dataset/3019). The data collected by BLM has not yet completed its 3–5-year dataset to be considered as 'representative background' but the results have been included in this SEIS, as appropriate.
Boldrick	Lauren	EPA Region 10	80058	8	The DSEIS also discusses the potential for oil spills impacts to subsistence resources. EPA recommends the NEPA analysis describe measures to develop a spill prevention and emergency response plans in close coordination with the potentially impacted communities, in addition to specified Required Operating Procedures (ROPs) mentioned in the DSEIS.	Spill prevention, control, and countermeasure plans are required under Lease Stipulation 4 and 9. The development of project-specific plans could be done in coordination with local communities, as this is required in several lease stipulations and ROPs

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brinson	Cynthia	-	2368	1	Please develop an alternative that maximally protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich'in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will exacerbate these stresses, cause irreparable harm to this irreplaceable region, and to the millions of birds and other animals that migrate there every summer from around the world, and undermine urgent action to address the climate crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	18	In addition to strengthening and clarifying elements of Alternative D, BLM and FWS should consider an alternative that only makes 400,000 acres available for leasing. Under the Tax Act, BLM only needs to offer 400,000 acres of the highest hydrocarbon potential areas for lease in each lease sale.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Brisson	Brook	Trustees for Alaska	80131	23	Groups asked BLM and FWS to consider an alternative that would add no new greenhouse gas (GHG) emissions and that achieved net zero emissions.(191) BLM and FWS interpreted this as a "alternative or renewable energy alternative" and eliminated it because it would not achieve the purpose and need or comply with the Tax Act.(192) This misunderstands the suggested alternative. There are more ways to achieve net-zero emissions than by developing renewable energy. The agencies should consider an alternative that aligns the oil and gas program with climate goals. For instance, a net-zero alternative could require avoidance of most GHG emissions through minimal leasing and development, stringent emissions management controls to minimize emissions associated with minimal leasing and development, and mitigation through offSEIS or other strategies that address remaining emissions.(193) (191) 2021 Scoping Comment Letter at 29. (192) DSEIS at 2-88. (193) See infra Section VI.A.7	The BLM and FWS recognize the importance of accounting for adverse impacts from GHG emissions that could result from activities conducted pursuant to the leasing program. The feasibility of using low-GHG emission vehicles and equipment and other emissions reduction methods will be assessed for each proposal when submitted. As illustrated in Table 3-1, the contribution of GHG emissions from exploration, development, and production activities themselves would be small in comparison to the contribution of GHG emissions from downstream combustion of produced oil and associated market effects. As explained in Appendix C.6., there are many uncertainties with projecting future petroleum activities, such as the timing of oil field discoveries and associated development and the amount of economically recoverable oil. What is known, however, is that even in an optimistic scenario, it takes a number of years to progress from leasing to exploration to development to production, transport, and downstream consumption. Thus, there is a significant time lapse between the leasing phase and the manifestation of GHG emissions from downstream consumption and associated market effects. Meanwhile, the Department of the Interior currently lacks an established and widely applicable program for offsetting GHG emissions that directly or indirectly result from oil and gas leasing, or standards establishing which party in the long causal chain between leasing, exploration, development and production, transportation, and consumption should be responsible for offsetting such emissions. In the absence of such a program or at least generally acceptable standards of how one would be implemented, it is infeasible to impose such a requirement at the leasing stage of an oil and gas program, especially one in which actual production is highly uncertain and likely in the distant future. A more prudent and effective approach is to refrain from prescribing a potentially problematic standard now, and to instead revisit potential mitigation strategies when reviewing specific proposals in the future, when project GHG emissions inventories are available and more effective and standardized mitigation and offset strategies are likely to exist.

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Brisson	Brook	Trustees for Alaska	80131	527	To consider and leave space for Imago, the SEIS should include an Indigenous-centered alternative that recognizes and accounts for past Indigenous land ownership, past and current Indigenous land stewardship, and historical and present injustices towards Indigenous peoples. Such an alternative should fully incorporate and create space for traditional Indigenous knowledge, Indigenous worldviews, and future shared stewardship by Indigenous Peoples. It must minimize the acreage available for leasing; limit seismic and other exploration activities to leased areas; and include stringent, non-waivable stipulations for resource protection, developed through government-to-government consultation and incorporating traditional Indigenous knowledge.(1442) It also must defer leasing, lease implementation, and/or any permitting of exploration or other development activities, until certain conditions are met, such as co-creation of a plan for meaningful co-stewardship of the Arctic National Wildlife Refuge that centers the Indigenous worldview and the interconnected and sentient rights of the lands, waters, wildlife, and Indigenous peoples and fully restores Indigenous hunting and fishing subsistence rights.(1443) For instance, the Imago Task Force supported the development of a proposed Indigenous-centered alternative that was submitted at scoping by task force member Sovereign Iñupiat for a Living Arctic.(1444) (1442) The draft SEIS fails to include a minimum 400,000-acre alternative, an alternative that would limit seismic to areas that are actually leased (as opposed to available for leasing), and an alternative with non-waivable stipulations for resource protection. While we appreciate that Alternative D was developed in part through government-to-government consultation and incorporation of traditional Indigenous knowledge, it still fails to adequately protect Coastal (1443) As discussed at supra Section IV. B.3, the agencies misinterpreted proposed delayed leasing or permitting alternatives in the draft SEIS. BLM has ample discretion under the Section 20001(c)(1) of PL 115-97 and other authorities to delay issuance of any leases sold in a second lease sale, suspend leases, or otherwise delay lease implementation and permitting to protect resources. (1444) See Sovereign Iñupiat for a Living Arctic, Proposed Indigenous-Centered Alternative for Supplemental Environmental Impact Statement for the Coastal Plain Oil and Gas Leasing Program (Oct. 4, 2021).	The Final SEIS range of alternatives has been updated based on public input requesting protection for key resources and new updated information. While the requested items are outside the scope of this SEIS decision, the BLM/USFWS recognize the need for continued coordination and consultation on topics of cultural importance. Additionally, the leasing stipulations and ROPs reflect the need for this continued and meaningful coordination specific to the oil and gas program. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale, all of which would be open for seismic exploration. Alternative D2 also addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures. Section 2.4.3 describes why an alternative that disallows waivers, modifications, or exceptions was considered but eliminated from detailed analysis.
Brisson	Brook	Trustees for Alaska	80131	528	Unfortunately, the draft SEIS alternatives fail to include key elements of an Indigenous-centered alternative, and therefore fail to fully honor the traditional knowledge, practices, and ways of life of the Alaska Native communities who have lived in relationship with the lands and waters that now comprise the Arctic National Wildlife Refuge for millennia, or adequately preserve space for future Indigenous-led conservation and co-stewardship of the Arctic Refuge Coastal Plain. The final SEIS should include key elements of an Indigenous-centered alternative and address how the agencies intend to preserve space for the Imago Initiative and meaningful future Indigenous co-stewardship of the Coastal Plain.	The BLM/USFWS recognize the need for continued coordination and consultation on topics of cultural importance. Additionally, the leasing stipulations and ROPs of Alternative D2, the preferred alternative, reflect the need for this continued and meaningful coordination specific to the oil and gas program.
Brisson	Brook	Trustees for Alaska	80131	5	BLM should clearly state that the acreage considered under each alternative is a hard limit for the surface disturbance that could be allowed under that alternative if selected, and that when that acreage is reached, no additional surface disturbance will be permitted. Right now, it is unclear if BLM is treating it as a limit that will be capped at the amount in the adopted alternative (i.e., 2,000, 1,464, or 1,040 acres) or if those different acreages are presented only as a point of comparison for the SEIS analysis.(124) It should be the former, not the latter. BLM should revise its interpretation to make clear that the agency does not need to allow up to 2,000 acres of surface development under the leasing program and can impose a limit below 2,000 acres, consistent with the alternative it adopts.(125) Critical to ensuring that no more acreage is developed than the amount included in the selected alternative is ensuring that the agency retains the authority to impose and enforce a limit on the total amount of surface disturbance. It is unclear what mechanism BLM proposes to do so. BLM should ensure the terms of any leases expressly retain the authority to fully restrict and deny any amount of surface disturbance. To the extent BLM is intending to retain that authority using the NSO provisions, it needs to make that clear and ensure it retains that authority. (124) DSEIS at 2-2, 2-4. (125) DSEIS at 1-9 (explaining that BLM's interpretation of the 2,000-acre limit limits surface development to 2,000 acres but not explaining that it allows the agency to limit it to less than 2,000 acres)	The 2,000-acre cap is set by statute. Regardless of which alternative is selected in the ROD, per Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section."
Brisson	Brook	Trustees for Alaska	80131	6	BLM still fails to account for some facilities in its interpretation that should be included, including those portions of raised pipelines that do not directly touch the ground.(126) By excluding the raised portions of pipelines, BLM's interpretation fails to account for the fact that Congress intended the list in the Tax Act to be inclusive, not exclusive. Pipelines are unquestionably production and support facilities developed on the surface of the Coastal Plain and impact resources like vegetation and caribou, even if they do not directly touch the ground. As such, all areas impacted by elevated pipelines should count toward this limitation, including the full length of the pipelines themselves as well as the vertical supports. Interpreting the limitation to apply to pipelines in this way is consistent with the overarching goal that this provision be a protective measure for the Coastal Plain. By interpreting the limitation to ignore the miles of actual pipelines, BLM is ignoring considerable acreage directly impacted by pipelines. (126) DSEIS at 1-9.	BLM's interpretation of Section 20001(c)(3) is correct. Per Section 20001(c)(3) of Section 20001(c)(1) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section."
Brisson	Brook	Trustees for Alaska	80131	7	BLM indicates that it interprets the limitation to not apply to areas indirectly disturbed, such as areas impacted by dust shadows, or to snow or ice roads and pads.(127) Both of these examples cause impacts to Coastal Plain resources, which is what the limitation aims to protect. As such, the limitation should apply. BLM should amend its interpretation in the final SEIS to apply the limitation more broadly to include all areas that are directly and indirectly impacted. (127) DSEIS at 1-9.	Section 20001(c)(3) only applies the 2,000-acre provision to land that is directly occupied by production and support facilities. This is made clear by Section 20001(c)(1) of PL 115-97's reference to areas covered by piers for support of pipelines; however, the SEIS does analyze broader indirect impacts associated with these production and support facilities. The 2,000-acre limit includes all surface development on federal lands within the Coastal Plain (see Section 1.9.1).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	8	BLM also states that it does not interpret this limitation to apply to the private lands on the Coastal Plain (i.e., the KIC/ASRC lands and Native Allotments).(128) This limitation is a legal requirement to conserve the Arctic Refuge Coastal Plain. As such, it should apply to all private lands in the Refuge pursuant to section 22(g) of the Alaska Native Claims Settlement Act, as well as to ASRC/KIC lands under the terms of that Land Exchange Agreement. BLM should better explain its reasoning for not applying this limitation to nonfederal lands to ensure that it consistent with Congressional intent. (128) DSEIS at 1-9.	See Section 1.5 for clarity of private lands. Pursuant to the following provision in Section 20001(c)(1) of PL 115-97, the 2,000-acre provision expressly applies only to federal land. (3) SURFACE DEVELOPMENT.—In administering this section, the Secretary shall authorize up to 2,000 surface acres of federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section.
Brisson	Brook	Trustees for Alaska	80131	15	It is not clear why the agencies incorporated a screening criterion that focuses on economic, technological, and logistical feasibility. What is or is not feasible will be decided by various independent entities who may consider bidding on leases based on many factors outside of the agencies' control, expertise, or knowledge. This criterion should be reconsidered and eliminated. Additionally, compliance with all seven of the Coastal Plain's conservation and subsistence purposes is vitally important for developing, analyzing, and ultimately selecting an alternative. While BLM and FWS include the recognition that the oil and gas program must consider the ANILCA purposes of the Coastal Plain,(164) this criterion should be expressly included in the alternatives screening criteria. Additionally, it should be expanded to also include the original three Arctic Range purposes.(165) (163) Id. (164) DSEIS at 1-3. (165) See infra Section IV.C.2.	The screening criteria noted in Section 2.2 were used to guide discussion during the Alternatives Development Workshop held in April 2022 with cooperating agencies. Additional review of economic, technological, and logistical feasibility would be completed at the project-specific review phase. Text in Section 2.2 has been further clarified to recognize that meeting the five purposes of the Refuge was explicitly considered as one of the alternatives screening criteria. Text in Section 1.5.1 has been revised to indicate that the original purposes of the Arctic Range established by PLO 2214 were superseded by Section 303(2)(B) of ANILCA, as amended by Section 20001(c)(1) of PL 115-97.
Brisson	Brook	Trustees for Alaska	80131	17	Under all the alternatives, it is unclear if BLM is treating the number of acres that will be impacted by surface disturbance as a hard limit or as an estimate for understanding how impacts might vary between alternatives. BLM needs to clarify this in the final SEIS and should adopt hard limits on the number of acres that can be impacted based on the acres analyzed under each alternative. If BLM considers the acreage as an estimate to aid the agency in understanding impacts but then allows development of the full 2,000 acres there is no difference between alternatives. The 2,000-acre limitation is a ceiling, not a mandate. BLM is not obligated to authorize 2,000 acres of impacts under any alternative and should, in fact, impose more restrictive mandates to ensure the protection of the other purposes of the Refuge. BLM should clarify in the final SEIS that it is treating the acreage analyzed under the alternatives as a hard cap on development for the Leasing Program.	The RFD acreages are estimates, whereas the 2,000-acre cap is set by statute. Regardless of which alternative is selected in the ROD, per Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section."
Brisson	Brook	Trustees for Alaska	80131	19	Another alternative component that BLM and FWS should consider is one that restricts seismic exploration to only those areas that are leased and prohibit pre-leasing seismic exploration.(179) The SEIS's treatment of pre-leasing seismic exploration and whether that will be allowed is unclear; BLM should clarify that it will not allow pre-leasing seismic exploration. This would provide additional protection for areas that may be available for lease but are not leased. BLM and FWS recognize that activities will likely occur in a specific sequence in the Estimate Hypothetical Development Time Frames, which does not include pre-lease seismic.(180) The agencies should also consider an alternative that prohibits seismic exploration from areas where damage is likely to be exacerbated because of the topography or other foreseeable resource impacts and should include timing, geographic, and other restrictions on seismic exploration even in leased areas to ensure resource protection.(181) (179) See infra Section IV.B.7 (180) DSEIS App. B at B-11 to B-12. (181) See infra Section IV.B.7 & SectionVI.K.2.b.	Pre-leasing seismic exploration can help discern which tracts to bid upon at a sale. Under each action alternative seismic exploration is limited to those areas available for leasing.
Brisson	Brook	Trustees for Alaska	80131	20	Groups also encourage BLM and FWS to reconsider the alternatives eliminated from consideration. BLM and FWS eliminated from consideration an alternative that would limit the types of infrastructure allowed.(182) Regarding Groups' previous suggestion that the agencies consider an alternative that places infrastructure outside of the Coastal Plain, BLM and FWS's response as to why that cannot be considered is faulty. The agencies state that such an alternative is not consistent with the Tax Act, that lessees have the right to develop oil and gas on their lease, and that such an alternative would prohibit development.(183) Groups' suggestion was not that BLM and FWS prohibit development per se, but that specific infrastructure not be permitted on the Coastal Plain, including a central processing facility, production pads, gravel mines, and pipelines. Groups explained that oil and gas resources could be produced through directional drilling from outside the Coastal Plain and/or transported via pipeline for processing at another location. Such an alternative could decrease impacts to surface resources on the Coastal Plain by limiting surface disturbance and human activity associated with oil and gas activities. The explanation for rejecting this alternative as inconsistent with the Tax Act and lease rights is also at odds with BLM and FWS's recognition under Alternative D that oil and gas could be produced via directional drilling, and that a central processing facility and well pads could be placed outside of the Coastal Plain.(184) (182) DSEIS at 2-88. (183) DSEIS at 2-88. (184) DSEIS at 2-4, App. B at B-24.	Such an alternative would not meet the purpose of the Section 20001(c)(1) of PL 115-97. However, Lease Stipulation 13 requires a Master Development Plan that minimizes the areal extent of development and redundant infrastructure by a single operator and among multiple operators.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	22	BLM and FWS also eliminated an alternative that deferred leasing by saying that such an alternative would not be consistent with the Tax Act.(188) This misunderstands the suggestion. The suggested alternative would be to defer the issuance of leases or suspend activities, not to defer holding a lease sale. The Tax Act leaves the agency with ample discretion to delay issuance of or suspend any leases. Indeed, by suspending leases in the interest of conservation of natural resources, BLM can toll the terms of leases and obligations of leaseholders to make rental payments. The agencies should reconsider their elimination of this alternative. Groups also recommended that BLM and FWS consider an alternative that deferred development.(189) BLM and FWS's explanation regarding a deferred-leasing alternative does not address the suggestion that the agencies consider an alternative that defers development based on option or informational value principles.(190) BLM and FWS have the authority to deny permits for activities, which is consistent with this alternative component suggestion. Additionally, BLM and FWS's statement that considering such an alternative would be similar to the no-action alternative but with delayed impacts ignores that the analysis of deferred lease issuance and activities may be meaningfully different in the future given the intense and accelerating impacts of climate change on the Arctic. What is expected now based on climate projections may be very different than what could be expected at a future point in time based on then-projected climate impacts. (188) DSEIS at 2-88. (189) 2021 Scoping Comment letter at 29-30. (190) See also infra Section VIII.A	Pursuant to Section 20001(b)(3) of Section 20001(c)(1) of PL 115-97, the BLM must administer the Coastal Plain oil and gas leasing program "in a manner similar to the administration of lease sales under the Naval Petroleum Reserves Production Act of 1976 (42 U.S.C. 6501 et seq.) (including regulations)." Such an alternative would not be consistent with BLM's administration of lease sales in the NPR-A, and the BLM and USFWS considered that the expected impacts from this alternative were already considered within the existing alternatives. Additionally, any future BLM evaluations of proposed on-the ground activities will consider the latest climate projections and all reasonably foreseeable environmental impacts.
Brisson	Brook	Trustees for Alaska	80131	47	The analysis of the impacts of seismic exploration in the draft SEIS is also inadequate. First, the draft SEIS estimates different levels of disturbance that might occur under the different alternatives.(273) It is unclear from those estimates if BLM is including the damage likely to occur from seismic exploration. BLM and FWS need to quantify the foreseeable impacts from seismic exploration and consider those as part of its analysis. (273) Id. at 2-2.	Seismic activity is considered an exploration activity, and was factored into the baseline RFD (see Appendix C, Exploration C.7.2) which provides the basis for the analysis of the other alternatives. The only alternative that did not consider impacts from seismic exploration is Alternative A.
Brisson	Brook	Trustees for Alaska	80131	328	BLM and FWS's range of alternatives is inadequate.(910) The three action alternatives do not present a reasonable range sufficient to analyze differences in impacts to polar bears. The variations between the final EIS action alternatives and Alternative D do not offer a meaningful difference in impacts to polar bears and their critical habitat. (910) See supra Section IV.B.3.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	329	Indeed, BLM and FWS acknowledge that under Alternative D, 8,900 acres of maternal denning habitat would be open to seismic exploration.(916) This poses unacceptable impacts and BLM and FWS must include meaningful variation among alternatives and heightened mitigation measures in the final SEIS. (916) Id. at 3-265.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	368	Alternative D, while stating that den-detection surveys for winter overland moves and seismic work would be conducted by parties subject to the ROP, does not specify the methods to be employed, the timing for any "best efforts" to locate dens, or the number of requisite infrared surveys.(1021) The draft SEIS thus leaves it to a decision by the lessee decide what survey methods will be used while misleadingly indicating that any infrared detection and the use of dogs will mitigate impacts. (1021) DSEIS at 2-40.	Any authorization for on-the-ground activities requiring den-detection surveys will specify the methods required as they relate to the specific proposal.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	16	Alternative D is a new alternative and is put forward to "address[] the NEPA deficiency identified by the Secretary in SO 3401 regarding failure of the Final Coastal Plain EIS [] to adequately analyze a reasonable range of alternatives."(171) It estimates surface development would be around 1,040 acres and restricts seismic to only those acres available for leasing.(172) It also purports to "stress[] protection of the four conservation-oriented statutory purposes of the Arctic Refuge" and incorporate more restrictive lease stipulations and ROPs.(173) We recognize that BLM and FWS propose this new alternative as a more-protective alternative than those previously analyzed. However, there are significant issues with this alternative that need to be addressed in the final SEIS, including clarifying that the 1,040 acres of surface disturbance is a hard limit on the amount of acres that will be disturbed under this alternative(174) and adding additional and stronger mitigation measures necessary to protect the Coastal Plain.(175) The meaningfulness of the NSO stipulations in light of how the agencies interpret the ROW provision is also in question and needs to be clarified in the final SEIS.(176) BLM should ensure that the NSO protections are maintained and not undermined by the ROW provision.(177) As drafted, this alternative is not sufficiently protective of Coastal Plain resources, nor does it comply with the seven conservation and subsistence purposes of the Coastal Plain. It must be further strengthened, and the issues and deficiencies identified below must be addressed in the final SEIS. (171) Id. (172) Id. (173) Id. (174) See supra Section IV.A.1. (175) See generally supra Section VI. (176) See supra Section IV.A.3 & IV.B.4 (177) See supra Section IV.B.5.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS. Additionally, Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	21	BLM and FWS also rejected an alternative that would not allow any waivers, exceptions, or modifications to the lease stipulations and ROPs, stating that "it was not reasonable or practicable."(185) The agencies then state that there are "several" stipulations and ROPs that cannot be waived, excepted, or modified.(186) It is not clear at all which stipulations and ROPs cannot be waived, excepted, or modified. If there are specific stipulations and ROPs that BLM and FWS will not consider granting any waivers, exceptions, or modifications of, that must be made clear in the SEIS. Additionally, this statement is at odds with BLM and FWS's other justification for rejecting such an alternative: that in some cases "it is not practicable to comply with all lease stipulations and required operating procedures."(187) If BLM and FWS believe that some stipulations and ROPs cannot be changed but also believe that there will be cases where not all stipulations and ROPs can be met, it is unclear what BLM and FWS expect to occur. The agencies should reconsider rejecting this proposed alternative. This alternative would ensure that the protections ascribed to the stipulations could actually be relied upon to safeguard resources. Regardless, the agencies should clarify which stipulations and ROPs cannot be waived, excepted, or modified and how it will address instances where potentially un-waivable stipulations and ROPs cannot be otherwise met. If BLM and FWS expect that there are stipulations and ROPs that cannot be met or to the extent that BLM and FWS will consider waivers, exceptions, and modifications to stipulations and ROPs, the agencies should analyze the impacts of the program based on granting these exemptions and revise its alternatives to include that discussion. (185) DSEIS at 2-88. (186) DSEIS at 2-88. (187) DSEIS at 2-88.	Waivers, exceptions, and modifications are necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions. Appropriate stipulations are attached to the lease when the BLM issues it. As part of a lease contract, stipulations are specific to the lease. All oil and gas activity permits issued to a lessee must comply with the lease stipulations appropriate to the activity under review, such as exploratory drilling or production pad construction. A stipulation included in an oil and gas lease could be subject to a waiver, exception, or modification, as appropriate. The objective of a stipulation must be met before a waiver, exception, or modification would be granted. Waivers, exceptions, and modifications are: 1) A waiver—A permanent exemption to a stipulation on a lease; 2) An exception—A one-time exemption to a lease stipulation, determined on a case-by-case basis, or 3) A modification—A change attached to a lease stipulation, either temporarily or for the life of the lease. The BLM Authorized Officer may authorize a modification to a lease stipulation only if the officer determines that the factors leading to the stipulation have changed sufficiently to make the stipulation no longer justified; the proposed operation would still have to meet the objective stated for the stipulation. While the BLM may grant a waiver, exception, or modification of a stipulation through the permitting process, it may also impose additional requirements through permitting terms and conditions to meet the objectives of any stipulation. This would be the case if the BLM Authorized Officer considers that such requirements are warranted to protect the land and resources, in accordance with the BLM's responsibility under relevant laws and regulations. Note that PL 115-97 requires that the BLM authorize ROWs for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or with a NSO stipulation. The Authorized Officer will issue a waiver, exception, or modification to a lease stipulation or ROP only following 30 days of public notice, although this timeframe could change if agreed upon and legally permissible. Moreover, the Authorized Officer must document their decision and rationale for any waiver, exception, or modification in writing.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	32	Overall, the draft SEIS still suffers from the same problem as the prior EIS: it considered the amount and purported benefit of the measures, instead of analyzing the adverse effects that are still likely to occur and how to address them. This again results in the SEIS failing to disclose the effects that will occur despite mitigation.(225) Issues relevant to specific stipulations and ROPs are addressed in the various resource sections below. (225) 2021 Scoping Comment Letter at 39; 2019 DEIS Comment Letter at 40-44.	Adverse effects are analyzed consistent with NEPA regulations.
Brisson	Brook	Trustees for Alaska	80131	33	The draft SEIS continues to include stipulations that rely on ROPs for their standards and requirements, which makes it unclear whether there is anything additive in terms of resource protections. The final SEIS should better explain the agency's approach to stipulations and ROPs, particularly where one references the other (e.g., stipulation 6 referring to ROP 23 for the standards and requirements), and BLM and FWS must analyze the effectiveness of the measures to comply with NEPA.	Protective measures are issued in two types: Lease Stipulations and Required Operating Procedures (ROPs). Appropriate stipulations are attached to the lease when the BLM issues it. As part of a lease contract, stipulations are specific to the lease. All oil and gas activity permits issued to a lessee must comply with the lease stipulations appropriate to the activity under review, such as exploratory drilling or production pad construction. The ROPs describe the protective measures that the BLM would impose on applicants during the permitting process. Together with the lease stipulations, the ROPs also provide a basis for analyzing the potential impacts of the alternatives in this SEIS.
Brisson	Brook	Trustees for Alaska	80131	34	BLM and FWS rely heavily on a purported no-surface occupancy (NSO) stipulation to provide protection for multiple Coastal Plain resources. While a NSO stipulation has the potential to be protective, the loopholes for those protections and general lack of clarity about them in the draft SEIS raises serious doubts about the meaningfulness of those requirements to protect surface resources.(226) First, there is no clear definition of what no-surface occupancy means. Instead, it is offered as the requirement and standard for various stipulations that contain slightly different language about what is or is not allowed, but are all collectively labeled as "NSO."(227) BLM and FWS should include a clear definition in the final SEIS that applies to all relevant stipulations. If the agencies determine that there is no one clear definition that can apply based on the objectives of the stipulation, the agencies should explain that, better explain what the various requirements mean, and more clearly identify where different measures might apply. Second, it is unclear how BLM and FWS will apply the NSO protections in light of the agency's interpretation of the ROW provision. For example, in some places where the agencies set out a stipulation as being NSO, there is express language indicating that the NSO provision would not apply to necessary ROWs, while in others, no such language is included.(228) This leads the reader to understand that there are certain NSO stipulations that could be waived/excepted/modified for necessary ROWs. But it is unclear if this is what the agencies intend based on the broad interpretation of the ROW provision.(229) BLM and FWS must better explain how the ROW provision intersects with the NSO stipulations. If all of the NSO stipulations can be waived based on the ROW provision, the meaningfulness of that stipulation is seriously undercut, and the SEIS must actually analyze those impacts. (226) See infra Section IV.B.6 (227) Compare DSEIS at 2-7, 2-9, 2-11, 2-14, 2-21, & 2-22. (228) Compare DSEIS at 2-7 with DSEIS at 2-22. (229) See supra Section IV.A.3.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS. Where ROWs are required NSO stipulations provide exceptions.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	35	The draft SEIS explains that the stipulations and ROPs can be waived, excepted, or modified if the objective of the stipulation or ROP is otherwise met, and if the factors leading to the stipulation have changed such that the stipulation is no longer justified.(230) BLM and FWS rejected an alternative that would not allow any waivers, exceptions, or modifications to the lease stipulations and ROPs, stating that "it was not reasonable or practicable" and claimed there are "several" stipulations and ROPs that cannot be waived, excepted, or modified.(231) However, there is no indication of which stipulations and ROPs cannot be waived, excepted, or modified. To the contrary, the discussion on waivers, exceptions, and modifications indicate that all stipulations and ROPs could be. NSO stipulations, timing limitations, and surface use limitations designed to protect Arctic Refuge resources are only effective to the extent that the safeguards will actually be applied. Waivers (permanent exemption that applies to the entire leasehold), exceptions (one-time exemption for a particular site within the leasehold), and modifications (change to the lease stipulation, either temporarily or for the term of the lease, can apply to the entire leasehold or certain areas) all permit an operator to avoid compliance with the requirements of a stipulation. Where these loopholes are permitted and used, the protections that the stipulations are supposed to provide can be undermined. If there are specific stipulations and ROPs that BLM and FWS will not consider granting any waivers, exceptions, or modifications to, that must be made clear in the final SEIS. Additionally, when rejecting an alternative that would not allow waivers, exceptions, or modifications, BLM and FWS stated that in some cases "it is not practicable to comply with all lease stipulations and required operating procedures."(232) If BLM and FWS believe that there will be cases where not all stipulations and ROPs can be met, the draft SEIS needs to analyze the impacts that will result. Without that, the draft SEIS does not accurately evaluate the impacts of the Leasing Program. (230) DSEIS at 2-5. (231) DSEIS at 2-88. (232) DSEIS at 2-88.	Waivers, exceptions, and modifications are necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions. Appropriate stipulations are attached to the lease when the BLM issues it. As part of a lease contract, stipulations are specific to the lease. All oil and gas activity permits issued to a lessee must comply with the lease stipulations appropriate to the activity under review, such as exploratory drilling or production pad construction. A stipulation included in an oil and gas lease could be subject to a waiver, exception, or modification, as appropriate. The objective of a stipulation must be met before a waiver, exception, or modification would be granted. Waivers, exceptions, and modifications are: 1) A waiver—A permanent exemption to a stipulation on a lease; 2) An exception—A one-time exemption to a lease stipulation, determined on a case-by-case basis, or 3) A modification—A change attached to a lease stipulation, either temporarily or for the life of the lease. The BLM Authorized Officer may authorize a modification to a lease stipulation only if the officer determines that the factors leading to the stipulation have changed sufficiently to make the stipulation no longer justified; the proposed operation would still have to meet the objective stated for the stipulation. While the BLM may grant a waiver, exception, or modification of a stipulation through the permitting process, it may also impose additional requirements through permitting terms and conditions to meet the objectives of any stipulation. This would be the case if the BLM Authorized Officer considers that such requirements are warranted to protect the land and resources, in accordance with the BLM's responsibility under relevant laws and regulations. Note that PL 115-97 requires that the BLM authorize ROWs for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or with a NSO stipulation. The Authorized Officer will issue a waiver, exception, or modification to a lease stipulation or ROP only following 30 days of public notice, although this timeframe could change if agreed upon and legally permissible. Moreover, the Authorized Officer must document their decision and rationale for any waiver, exception, or modification in writing.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	36	Groups have also strongly encouraged the agencies to adopt clearer standards and criteria for granting waivers, exceptions, and modifications. While Groups appreciate that there will be a public notice prior to any waiver, exception, or modification granted, and that there must be documentation of the decision, the draft SEIS still lacks clear standards and criteria for granting waivers, exceptions, and modifications.(233) Without any criteria for granting waivers, exceptions and modifications, there is not reliability or foreseeability as to how and when the stipulations will be applied, resulting in little certainty that the stipulations will protect Coastal Plain resources. The lack of sideboards on granting waivers, exceptions, and modifications also renders a NEPA analysis that relies on their effectiveness deficient, since their continued application depends on the discretion of the BLM authorized officer. The U.S. Government Accountability Office has opined that BLM's failure to have consistent standards or practices in waiving lease stipulations and operating procedures means that the effectiveness cannot be measured: "[W]ithout sufficiently detailed documentation of inspections and effective use of data from inspectors, BLM is unable to fully assess the effectiveness of its best management practices policy to mitigate environmental impacts."(234) In order to rely on lease stipulations and ROPs in its analysis and to adopt a program that purports to comply with legal mandates and the purposes of the Coastal Plain, BLM and FWS must set out narrowly prescribed waivers, exceptions and modifications to lease stipulations that are based on clear, identified criteria that can be objectively evaluated by the agencies and the public. (233) DSEIS at 2-5 to 2-6. (234) U.S. Government Accountability Office, Oil and Gas Development: Improved Collection and Use of Data Could Enhance BLM's Ability to Assess and Mitigate Environmental Impacts (Apr. 2017).	Waivers, exceptions, and modifications are necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions. Appropriate stipulations are attached to the lease when the BLM issues it. As part of a lease contract, stipulations are specific to the lease. All oil and gas activity permits issued to a lessee must comply with the lease stipulations appropriate to the activity under review, such as exploratory drilling or production pad construction. A stipulation included in an oil and gas lease could be subject to a waiver, exception, or modification, as appropriate. The objective of a stipulation must be met before a waiver, exception, or modification would be granted. Waivers, exceptions, and modifications are: 1) A waiver—A permanent exemption to a stipulation on a lease; 2) An exception—A one-time exemption to a lease stipulation, determined on a case-by-case basis, or 3) A modification—A change attached to a lease stipulation, either temporarily or for the life of the lease. The BLM Authorized Officer may authorize a modification to a lease stipulation only if the officer determines that the factors leading to the stipulation have changed sufficiently to make the stipulation no longer justified; the proposed operation would still have to meet the objective stated for the stipulation. While the BLM may grant a waiver, exception, or modification of a stipulation through the permitting process, it may also impose additional requirements through permitting terms and conditions to meet the objectives of any stipulation. This would be the case if the BLM Authorized Officer considers that such requirements are warranted to protect the land and resources, in accordance with the BLM's responsibility under relevant laws and regulations. Note that PL 115-97 requires that the BLM authorize ROWs for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or with a NSO stipulation. The Authorized Officer will issue a waiver, exception, or modification to a lease stipulation or ROP only following 30 days of public notice, although this timeframe could change if agreed upon and legally permissible. Moreover, the Authorized Officer must document their decision and rationale for any waiver, exception, or modification in writing.
Brisson	Brook	Trustees for Alaska	80131	84	Because the agency is treating the various limits under the 2,000-acre limitation as a cap on development, BLM needs to ensure that the terms of the leases expressly retain the agency's right to restrict the footprint of development and account for the maximum allowed development for the selected alternative.	There is only one legal acreage cap per Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section." The other acreages are RFD estimates.
Brisson	Brook	Trustees for Alaska	80131	86	To guard against expansive development, Groups recommended that BLM should include an administrative mechanism to allow the agency to force consolidated and shared infrastructure, and not rely just on operator agreements. Lease Stipulation 13 now requires a master development plan for Alternative D only.(419) While Groups support requiring such a plan to minimize development, it is unclear if this stipulation can be waived, excepted, or modified.(420) As explained above, BLM and FWS must be more clear about which stipulations are subject to waiver, exception, or modification.(421) If BLM can issue a waiver, exception, or modification for this stipulation, it is unclear how the agency could keep infrastructure in line with what is analyzed in the SEIS. When unnecessary or duplicative infrastructure is built, the infrastructure footprint is not minimized and environmental impacts are greater than they need to be. For that reason, we encourage BLM to require this stipulation for any alternative ultimately selected to better protect the Coastal Plain. (419) DSEIS at 2-23. (420) DSEIS at 2-5 (421) See supra Section IV.B.5.	Stipulation 13 applies to new Alternative D2 as well. Waivers, exceptions, and modifications are necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions. Additional text regarding waivers, exceptions, and modifications has been added to stipulations.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	87	Groups remain concerned that BLM and FWS are over-relying on reclamation to restore the Coastal Plain. It is unrealistic to expect that reclamation will return land to its previous condition and ecosystem function. The agencies recognize this, stating "reclamation and restoration of original habitat value has not been proven for gravel removal in the arctic environment once operations have ceased."(422) However, the draft SEIS still includes a ROP that assumes that such reclamation can occur and identifies that the objective of ROP 35 is to "[e]nsure ongoing and long-term reclamation of land to its previous condition and use."(423) Gravel roads, gravel mines, and other infrastructure in Arctic environments will cause long-term impacts to the landscape that cannot be easily recovered or restored and will never recover to their original, wilderness state.(424) Studies have indicated that natural recovery of tundra vegetation may occur on a timeframe that could take millennia or may never occur. (425) There is not a single tundra rehabilitation site that has returned to its original state in thirty-plus years of tundra rehabilitation. Even with intensive rehabilitation efforts, the recovery process takes at least decades.(426) For areas where there has been thermal slumping or subsidence, rehabilitation is very expensive and likely impossible.(427) We are concerned that BLM and FWS are relying on this ROP to achieve unproven results. The agencies should not rely on standards that are known to be unachievable and will thus require exemptions to the reclamation requirements.(428) (422) DSEIS at 3-182; see also DSEIS at 3-97. (423) DSEIS at 2-67. (424) See, e.g., NRC Report at 158. (425) BENJAMIN SULLENDER, AUDUBON ALASKA, ECOLOGICAL IMPACTS OF ROAD AND AIRCRAFT-BASED ACCESS TO OIL INFRASTRUCTURE 16-17 (2017), https://ak.audubon.org/sites/g/files/amh551/f/road_aircraft_access_report_final.pdf . (426) Id. at 17. (427) Id. (428) If BLM and FWS retain this ROP, the agencies need to also to account for and provide a long-term plan that addresses where the removed gravel would be placed after field closure, particularly in light of concerns about contamination.	Details of the reclamation will be completed to the specifics of the surface owner as specified from a future development EIS. Additionally, when approving an Application for Permit to Drill, additional conditions of approval would come from the surface use plan of operations. At that time, location of surface disturbance would be known as well as the functionality of those local ecosystems. Exploration would be addressed in more detail at the time of an application. Removed gravel may be treated by various mechanisms, recycled to a different location (e.g., another operation) that may be within or outside of the Coastal Plain, or it may be left in place if that was the desire of the surface owner.
Brisson	Brook	Trustees for Alaska	80131	88	The ROP also states that the BLM authorized officer has the authority to grant exceptions to this requirement to satisfy unspecified "environmental or public purposes."(429) The agencies should remove the provision that allows BLM to grant exceptions to these reclamation requirements. The circumstances under which BLM could potentially waive this requirement remain unclear in the draft SEIS and appear to completely negate the meaningfulness of any reclamation requirements. Regardless, there is no circumstance under which BLM should be able to grant exceptions to these reclamation requirements. (429) DSEIS at 2-68.	Waivers, exceptions, and modifications are necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions.
Brisson	Brook	Trustees for Alaska	80131	89	BLM should also include clear standards that companies will need to meet to ensure areas are fully restored. The cursory statements BLM included in ROP 35 are unobtainable and too vague to give any indication of where and how areas will be restored, over what timeframe, and to what standards. It is also unclear what is meaningfully different in the requirements/standards presented in the alternatives. For example for Alternative C, the standard says that reclamation shall include "measures to control erosion, landslides, and water runoff."(430) For Alternative D, the standard is that reclamation shall include "adequate and approved measures to control erosion, landslides, and water runoff."(431) But under both alternatives (as well as Alternative B) the reclamation plan would be approved by BLM to achieve reclamation goals.(432) Additionally, under Alternative B, the standard is that the reclamation plan will "ensure eventual rehabilitation to the land's previous hydrological, vegetation, and habitat functions."(433) For both Alternatives C and D, the ROP explains that the plan will "ensure eventual habitat restoration to the land's previous hydrological, vegetation, and habitat condition, wild and scenic river (WSR) eligibility/suitability, and intent to retore general wilderness characteristics of the area."(434) But given that the objective of ROP 35 overall is to ensure "reclamation of land to its previous condition and use," it's unclear why, if land previously had wilderness characteristics, that would be a reclamation standard for Alternative B, or how it's not included in the standards set forth in terms of the lands' previous functions. It's also not clear why "reclaimed" and "reclamation" is used for the standard in Alternative B but "restored" and "restoration" is used for Alternatives C and D. If the agencies mean to achieve something different between the alternatives, it is not readily apparent. In the final SEIS, the standards need to be specific, and any differences between the ROP by alternative better explained. (430) DSEIS at 2-68. (431) Id. (432) Id. (433) Id. (434) Id.	The requirement/standard b) for ROP 35 under Alternative D2 uses "reclaim" instead of "restore" per 43 CFR 3171.25(b) and 43 CFR 3171.8(e)(10).
Brisson	Brook	Trustees for Alaska	80131	90	Additionally, to justify relying on reclamation as lessening environmental impacts in a NEPA document, BLM needs to incorporate standards into the lease terms to ensure there are clear, achievable obligations for companies to undertake restoration of any impacted areas. BLM and FWS should incorporate far more detailed criteria related to restoration standards, including information on the timing of implementation, monitoring methods that will be used to determine success, how any contamination issues will need to be addressed, how companies will restore adjacent areas that have been impacted by dust or other contaminants, and more. Without additional specifics, and particularly in light of the fact that reclamation is unproven in the Arctic for gravel infrastructure, it is unlikely that areas will ever be restored to a level that returns them to anything close to their original condition or functions, or that ensures companies will actually be required to meet any objective, clear standards.	This level of specificity would be determined at the project-level authorization, when the exact location of a project is known. Reclamation would be tailored to different locations across the Coastal Plain depending on such factors as vegetation or soils.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	91	Finally, given the high cost of tundra rehabilitation, there are substantial concerns related to whether adequate funds will be available to undertake reclamation, particularly given the potential for companies to transfer ownership over time. In addition to incorporating more stringent standards and clear obligations for reclamation in the leases, the agencies should include formal criteria governing the financial assurances necessary to ensure sufficient funding for restoration and reclamation in ROP 35, including by mandating bonding at the time it issues the leases to cover reclamation and abandonment. BLM should estimate actual, likely reclamation costs of reasonably foreseeable development projects and consider alternatives that impose corresponding bonding amounts. Additionally, BLM should require that bonds be adjusted for inflation at regular intervals to ensure that they remain sufficient to cover any necessary reclamation activities after operations eventually conclude.	Before surface-disturbing activities begin, oil and gas leasing regulations (43 CFR 3104) require the operator on the ground to be covered by a bond. This bond provides monetary assurance to the BLM that the company would reclaim the pads, wells, and any associated surface disturbance to the standards of the BLM Authorized Officer. This is determined at the time of reclamation, thus allowing the BLM and USFWS to take an adaptive management approach. On abandonment, the BLM would consider current data, technologies available, and the current resource situation in its determinations on specific reclamation. Additionally, the BLM retains the ability to increase the bond amount at any time during the lease, based on a recalculation of liability, such as an increased number of wells or a history of noncompliance with its operational standards. It is the intent of the BLM to apply the bonding requirements listed at 43 CFR 3134 to the Coastal Plain. (See Section 3.5)
Brisson	Brook	Trustees for Alaska	80131	127	BLM and FWS should include an additional ROP element requiring the development of an adaptive management plan to react to monitored exceedances of the NAAQS and that also includes a proactive commitment to periodically review and update the air quality modeling analysis. This is particularly necessary given that the current modelling and impact analysis is incomplete and likely underestimates impacts, while also showing potential to exceed the NAAQS, as described above and in Ms. Williams' comments. To accurately reflect changing conditions and improved estimation techniques, a commitment to reviewing and updating the modeling analysis every three years will allow BLM to periodically evaluate advances in mitigation technologies and practices and incorporate best management practices and mitigations that are based on the latest science.	All future actions will be analyzed and scrutinized on a project by project basis and each analysis would demonstrate that the NAAQS would not be exceeded. If it is shown that it would the proponent would be required to alter their plan or propose an alternative that would not exceed the NAAQS. After plans are approved and facilities are in place the authority then lies with ADEC to address any observed exceedances.
Brisson	Brook	Trustees for Alaska	80131	128	BLM and FWS should also make it clear that all reports on air quality monitoring, all emissions inventories, and all modeling results shall be made available to the public and actively shared with the local communities and Tribes.	These types of documents and information are made publicly available as appropriate.
Brisson	Brook	Trustees for Alaska	80131	128	To the extent BLM considers adopting ROP 6(d) - "Air monitoring or air modeling reports will be provided to the BLM; federal land managers; federal, state, local community, or affected Tribal governments; and other interested parties, as appropriate," it should include specific timeframes and a process for enforcing this measure.	Suggested edits have been applied to Alternative D2.
Brisson	Brook	Trustees for Alaska	80131	151	The proposed mitigation measures in the required operating procedures and lease stipulations are still insufficient to address impacts to permafrost and soils. Outside of the very limited provisions that relate to off-road travel, it is unclear what measures the agencies will implement to prevent or mitigate against the full range of potential impacts to soil and permafrost resources. The significance and meaning of the changes to ROP 11 in the SEIS with regard to ground operations need to be better explained. ROP 11a for Alternative B indicates ground operations would be allowed when soil temperatures at 12 inches below the tundra surface reach 23 degrees Fahrenheit and snow depths are an average of 9 inches or 3 inches over the highest tussocks.(551) Alternative C now indicates ground operations will be allowed when soil temperatures at 12 inches below the tundra surface reach 23 degrees Fahrenheit and "snow depth and density amounts to no less than a snow water equivalent of 3 inches over the highest tussocks."(552) Alternative D provides that ground operations ground operations will be allowed when soil temperatures at 12 inches below the tundra surface reach 23 degrees Fahrenheit and there is "3 inches measured snow water equivalent."(553) But there is no explanation for why there are these subtle differences between the alternatives, what those differences might mean, or any analysis of the effectiveness of such measures. (551) DSEIS at 2-44. (552) Id. (553) Id.	Each of the action alternatives for the Draft SEIS contain different wording for snow depth and/or SWE requirements to analyze a range of options and resulting potential impacts on resources. The BLM Authorized Officer would determine which (or some combination) of the ROP 11 requirement alternatives to implement.
Brisson	Brook	Trustees for Alaska	80131	153	There are significant variations in snow coverage on the Coastal Plain - and therefore a high likelihood that the depth might not be sufficient to prevent damage. The strong winds, varied topography, and variable snow depths on the Coastal Plain are likely to make it difficult to find routes with consistent or adequate snow cover to prevent impacts from activities like seismic exploration. Assuming those parameters are adequate to prevent any possibly significant harm, they cannot do that if only an average snow depth is used to determine when ground operations will be allowed. "Generally, low amounts of winter snowfall, strong winter winds, and the hilly terrain in the 1002 Area combine to create substantial areas of very thin and unpredictable snow."(554) Thus, even when snow depth was at its greatest recorded extent, in 2018, "vast areas of [the Coastal Plain] were snow free."(555) Nor does ROP 11 even explain how and where these measurements will be taken, and how often. Snow coverage can change throughout the season, even overnight. BLM and FWS need to explain in more detail how that measure will be implemented. It is also unclear how BLM and FWS are using the information contained in Table 3-27 since there does not appear to be any explanation for that content in the SEIS. That should be further explained. (554) Seismic White Paper at 7. (555) Id. at 20.	Snow is measured at weather stations managed by the USFWS/USGS and is taken from ground-based measurements in advance of any proposed action requiring it. The joint lead agencies acknowledge that high variations in snow coverage combined with strong winds and varied topography make navigating a seismic survey within the 1002 more difficult than similar actions in the NPR-A. Depending on site specific conditions during the winter of the survey, there may be otherwise-approved areas which are disallowed for tundra travel due to insufficient snow coverage.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	154	ROP 11 also does not adequately account for different vegetation types with these default depths.(556) Allowing ground operations at a set snow water equivalent may still put vulnerable tussock tundra habitat at risk of damage.(557) Some tussock vegetation stands 18 inches tall when measured from the adjacent ground surface. If snow depth is insufficient to cover the tops of the tallest tussock vegetation, tussock vegetation may be crushed or sheared off during operations. Tussock vegetation that is crushed or sheared off dies, often replaced by different vegetation. This process can take 5 or more years, leaving the ground surface vulnerable to subsidence caused by a change in surface albedo, hydrology, and evapotranspiration. The agencies need to ensure snow depths cover the tops of the tallest tussock vegetation at sufficient depths. Similarly, shrubby vegetation is vulnerable to damage when not fully covered by snow. Ground operation should not be allowed in areas with shrubby vegetation unless snow depths are sufficient to cover the tops of shrubby vegetation. Ground operations also should not be permitted on steep slopes with shrubby vegetation. (556) DSEIS map 3-17. (557) See, e.g., LORENE LYNN, RED MOUNTAIN CONSULTING LLC & MALAMUTE ENERGY, INC., REHABILITATION MONITORING REPORT FOR THE RENAISSANCE SNOW TRAIL, UMIAT, ALASKA: LAS 26566 (Nov. 30, 2018) (included in attached documents)	Sensitive vegetation types would be avoided “as much as practicable.” On stream crossings it will be unavoidable that some sensitive shrubby vegetation gets disturbed due to limited stream crossing locations compatible with Coastal Plain topography. ROP 11 snow depth standards would also apply to tussock vegetation stands. Depending on the extent (area) of the potential 18” tussock stand mentioned in the comment, the operator would have a few options; If the area is not too extensive, the survey could be slightly rerouted around the larger tussock field and the survey could continue. If the area has no passable route which meets the minimum protection requirements, then it is possible that the survey would not be permitted to occur in those areas and data obtained from the survey would have gaps at those locations.
Brisson	Brook	Trustees for Alaska	80131	155	ROP 11 also contains additional provisions related to the types of vehicles and the manner in which they operate. These provisions appear to be drawn from best management practice C-2 in the Reserve.(558) While these provisions may arguably be appropriate in flatter areas with more consistent and deeper snow depths, they do not go far enough to address the unique range of terrain, snow conditions, permafrost, hydrology, vegetation community types, and other concerns that could lead to significant damage to the Coastal Plain. Further, similar measures have been insufficient to protect even these other areas, which are still scarred by past seismic operations, calling into question their ability to protect the Coastal Plain.(559) BLM and FWS cannot take a one-size-fits-all approach and assume that these provisions are sufficient to prevent degradation in areas that involve radically different conditions and concerns. BLM and FWS need to obtain additional information about the unique characteristics of the Coastal Plain so it can outline with greater specificity how it will prevent degradation of soil, vegetation, and permafrost resources. (558) Bureau of Land Mgmt., NPR-A Integrated Activity Plan Record of Decision app’x A, at 54 (2013). (559) Henry Fountain, See the Scars that Oil Exploration Cut Across Alaska’s Wilderness, N.Y. Times, Aug. 3, 2018, https://www.nytimes.com/2018/08/03/climate/alaska-anwr-seismic-testing-tracks.html .	The NY Times article referred to in this comment shows images taken the spring and summer immediately following the 2018 Point Thompson seismic survey effort, not after any significant period of recovery. The gridded seismic lines melt out more slowly in springtime due to compaction of the snow. This creates a very dramatic effect, easily visible from the air or even from the ground. The next image in the article shows what those seismic gridlines look like the summer after they thaw out. The increased green-up from vegetative recovery after this action is also visible (less so), but is consistent with expected impacts from the proposed action. These seismic gridlines are expected to recover within the time frame of a few growing seasons and impacts of this magnitude should not permanently alter permafrost temperature regimes. The impacts from the seismic gridlines themselves are similar to unimproved, compacted snow roads. The second photo in this article titled “Decades-old vehicle tracks west of the refuge” is not a valid comparison for current seismic survey technology or analysis. This photo shows a tundra scar created in the 1980s (or earlier) during a time when it was common to blade off the thawed upper portion of the active layer and drive directly on frozen permafrost/active layer. These damaging practices are no longer employed for oil and gas development projects in Alaska.
Brisson	Brook	Trustees for Alaska	80131	156	ROP 11 includes a provision under Alternative D stating that “[i]ce roads and water crossings would be designed and located to avoid the most sensitive and easily damaged tundra types as much as practicable.”(560) BLM and FWS should delete “as much as practicable” from this provision. Sensitive and easily damaged tundra is often located along stream banks where shrubby vegetation is common. Allowing ice road construction across shrubby stream bank vegetation risks damaging and/or killing vegetation in a location where soils are especially vulnerable to subsidence and erosion. (560) DSEIS at 2-44.	No change. The phrase “as much as practicable” is appropriate in the context of this environmental analysis. Sensitive shrubby vegetation nearly always occurs along stream banks, and it is sometimes unavoidable to cross patches of it. Stream crossings are also determined by topography and ease of constructing snow/ice ramps. Buildup of snow along these crossings helps to minimize impacts to sensitive vegetation. Due to topography limits in the Coastal Plain, it is often environmentally preferable to minimize the footprint of the survey and cross sensitive vegetation in small patches rather than have an extensive reroute to avoid it.
Brisson	Brook	Trustees for Alaska	80131	157	Standard g in Alternative B and Alternative C for ROP 11 indicates snow fences may be used in areas of low snow to increase snow depths within an ice road or snow trail route. Groups agree with the removal of this provision from Alternative D. Snow fences are an effective means to accumulate snow for the purpose of building snow roads, but snow accumulation may cause significant changes to surface hydrology, permafrost thermal stability, and to vegetation communities. Snow accumulation behind snow fences delays the melt period by 1-3 weeks and sometimes 4-8 weeks,(561) causing changes to soil temperature, soil moisture, nutrient cycling, and vegetation communities. Subsidence has been documented as well.(562) The agencies should ensure any areas with such accumulated snow are excavated or pushed to decrease snow depths to that found in surrounding tundra. (561) M. Martinelli, Jr., Snow-Fence Experiments in Alpine Areas, J. OF GLACIOLOGY vol. 12, no. 65, at 291-303 (1973); Kenneth M. Hinkel & John K. Hurd Jr., Permafrost Destabilization and Thermokarst Following Snow Fence Installation, Barrow, Alaska, U.S.A., ARCTIC, ANTARCTIC, AND ALPINE RESEARCH (2006). (562) Schimel, Josh P. et al., Increased Snow Depth Affects Microbial Activity and Nitrogen Mineralization in Two Arctic Tundra Communities, 36(2) SOIL BIOLOGY & BIOCHEMISTRY (2004).	Under Alternatives B and C in the Draft SEIS, ROP 11(g) included the requirement for excess snow accumulated by snow fences to be excavated or pushed to decrease snow depths to that found in surrounding tundra at the end of road use. Alternative D and D2 do not allow snow fencing under ROP 11.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	181	In addition to the agencies' insufficient analysis of the impacts of gravel mining, the proposed lease stipulations and ROPs are insufficient to mitigate impacts. The proposed NSO lease stipulations intended to protect water quality miss the mark because they continue to allow gravel mining within water ways. Lease Stipulation 1, which is intended to protect water quality and fish, subsistence, raptor habitat, cultural and paleontological resources, and reduce impacts on scenic and recreational values purports to restrict "permanent oil and gas facilities" within streambeds and within certain setbacks, but notes that "gravel mines could be permitted in setback areas."(636) Only in Alternative D does stipulation 1 prohibit gravel mining in setback areas, but continues to allow gravel mines in setback areas near rivers and streams that "do not support resident, anadromous, or endemic fish populations."(637) As such, lease stipulation 1 fails to address or mitigate impacts of gravel mining in or adjacent to stream and river beds. (636) DSEIS at 2-7 to 2-8. (637) Id. Alternative D offers greater protection from gravel mining impacts for the Canning River Delta and Lakes (Stipulation 2), springs and aufeis fields (Stipulation 3), wilderness areas (Stipulation 10), ice-rich soils and permafrost (Stipulation 12), and requires any development to maximize use of existing gravel mining infrastructure that may be developed to reduce the footprint of mines and gravel infrastructure (Stipulation 13).(638) Groups urge the agencies to require setback areas from all waterways and other sensitive areas and to prohibit gravel mining within those setback areas without waivers, exceptions, or modifications to the stipulations and ROPs that impose protections. (638) DSEIS at 2-7 to 2-23.	Waivers, exceptions, and modifications are necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions. Appropriate stipulations are attached to the lease when the BLM issues it. As part of a lease contract, stipulations are specific to the lease. All oil and gas activity permits issued to a lessee must comply with the lease stipulations appropriate to the activity under review, such as exploratory drilling or production pad construction. A stipulation included in an oil and gas lease could be subject to a waiver, exception, or modification, as appropriate. The objective of a stipulation must be met before a waiver, exception, or modification would be granted. Waivers, exceptions, and modifications are: 1) A waiver—A permanent exemption to a stipulation on a lease; 2) An exception—A one-time exemption to a lease stipulation, determined on a case-by-case basis, or 3) A modification—A change attached to a lease stipulation, either temporarily or for the life of the lease. The BLM Authorized Officer may authorize a modification to a lease stipulation only if the officer determines that the factors leading to the stipulation have changed sufficiently to make the stipulation no longer justified; the proposed operation would still have to meet the objective stated for the stipulation. While the BLM may grant a waiver, exception, or modification of a stipulation through the permitting process, it may also impose additional requirements through permitting terms and conditions to meet the objectives of any stipulation. This would be the case if the BLM Authorized Officer considers that such requirements are warranted to protect the land and resources, in accordance with the BLM's responsibility under relevant laws and regulations. Note that PL 115-97 requires that the BLM authorize ROWs for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or with a NSO stipulation. The Authorized Officer will issue a waiver, exception, or modification to a lease stipulation or ROP only following 30 days of public notice, although this timeframe could change if agreed upon and legally permissible. Moreover, the Authorized Officer must document their decision and rationale for any waiver, exception, or modification in writing.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	182	ROP 24 provides unique standards for Alternative D to try to protect resources from gravel mining impacts. In Alternative D, ROP 24 provides a greater number of waterways where gravel mine sites are prohibited, and provides some protection for raptor species from cliffside gravel mining.(639) In all versions of ROP 24, however, gravel mines could be allowed within the active floodplain of waterways.(640) ROP 24 should be amended to clearly state that gravel mines are prohibited in the setback areas and floodplains of the identified waterways under every alternative. In addition, ROP 24 contains unclear language regarding the standards and requirements for storage and reuse of sod or overburden material. BLM and FWS should explain how it plans to require the reuse of sod or overburden removed from gravel mines at other sites on the North Slope, and what the environmental impacts of transporting sod and overburden to those sites and emplacing it might be. Finally, ROP 24 states that it may allow gravel mines in rivers that also serve as water reservoirs, except for rivers or creeks that support resident, anadromous, or endemic fish populations.(641) It is troubling that BLM and FWS consider "mitigation" to include allowing the same waterway to be subject to both graveling mining and water extraction. The agencies must analyze the potentially significant impacts from allowing both activities to occur within the same waterways. (639) DSEIS at 2-57 to 2-58. (640) Id. (641) Id.	While ROP 24 Alternative D defines more protected waterways than Alternative B, under all alternatives further NEPA analysis would be required to authorize the development of a gravel mine site within the Program Area. Subsequent NEPA analysis would include site specific impact analysis with reference to the objective of ROP 24, which is the same for all alternatives. In all ROP 24 alternatives, potential storage and reuse of sod/overburden would be considered in the gravel mine site plan but is not required. Determination of sod/overburden storage and reuse requirements would be made on a case-by-case basis in subsequent NEPA analyses regarding specific proposed actions. The environmental impacts of transporting sod and overburden would not be intrinsically different from that of transporting of other materials. Environmental impacts of transporting materials via constructed gravel roads, ice roads, and snow trails are broadly evaluated throughout Chapter 3 Affected Environment and Environmental Consequences. Site specific impacts will be evaluated in subsequent NEPA analyses when specific details regarding a proposed action are available. ROP 24 states that a gravel mine site plan must take into consideration the “design and construction of gravel mine sites in active floodplains to serve as water reservoirs for future use.” Taking this into consideration while developing gravel mine site plans would provide space to acknowledge potential desire for water reservoirs within the Program Area as well as the probable natural progression of gravel mine sites in areas of poor drainage due to permafrost, topography, or other environmental factors. The potential to utilize a gravel mine site as a water reservoir would be considered on a case-by-case basis in subsequent NEPA analysis when site specific impacts to specific proposed actions are considered. Stipulations for withdrawing water from artificial water reservoirs are discussed in ROP 9. Stipulations for withdrawing water from rivers and streams are discussed in ROP 8. The SEIS does not grant authorization for on the ground activity. Authorization for gravel mine development and all water withdrawals would require subsequent NEPA analysis in regard to a specific proposed action.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	183	ROP 35 in its weakest (Alternative B) form requires site be reclaimed upon completion of operations at any oil and gas facility (including gravel mines) "to ensure eventual rehabilitation to the land's previous hydrological, vegetation, and habitat functions."(642) Alternative C and D require that the site be reclaimed "to ensure eventual ecosystem restoration to the land's previous hydrological, vegetation, and habitat condition, wild and scenic river (WSR) eligibility/suitability, and intent to restore general wilderness characteristics of the area."(643) This requirement is impossible in the case of gravel mines: gravel mins cannot be reclaimed or ecosystems restored. BLM and FWS acknowledge this impossibility, stating that "reclamation and restoration of original habitat value has not been proven for gravel removal in the arctic environment."(644) Setting aside the technical impossibility of complying with ROP 35 in the case of gravel mines, the agencies also inconsistently state that they do not intend to require compliance with ROP 35 for gravel mines. The draft SEIS's plan for reclaiming gravel mines includes permanent, non-remediated impacts, because the pits would be turned into ponds.(645) These ponds can create "thaw bulbs" around and under the pit, leading to increased permafrost thawing and the possible collapse of the pit walls.(646) Disruption of permafrost results in "permanent alteration of vegetation and morphology."(647) This is quite the opposite of ensuring eventual restoration to the lands previous condition. To comply with NEPA, BLM and FWS must evaluate the long-term impacts of gravel mining based on the reality that any gravel mine will not be reclaimed to previous functions. (642) DSEIS at 2-68. (643) Id. (644) DSEIS at 3-182. (645) DSEIS App. B at B-22. (646) DSEIS at 3-85. (647) DSEIS at 3-182.	Table ES-2 (Executive Summary) acknowledges the long-term impacts of developing gravel resources in the Coastal Plain. In that table, "Gravel pits and stockpiles" are estimated to disturb approximately 309 acres under Alternative B, 220 acres under Alternative C, and 154 acres under Alternative D. BLM and USFWS are evaluating other protective measures for mine site development. Lease Stipulation 12 (LS-12) under Alt-D prohibits permanent oil and gas facilities, wells, pipelines, and gravel roads and pads from areas of thaw-unstable ice-rich soils and yedoma deposits or (requirement to) design and construct pipelines and roads to accommodate the thaw subsidence anticipated over the design life. The gravel mine design follows a similar approach. Permanent permafrost thermal regime change would be anticipated with the construction of an open gravel mine like that proposed in the SEIS. Thermal berm dimensions/thicknesses and distances from mine edges are designed with the post-construction thermal regime in mind. Thaw bulb formation below water bodies is a well-documented consequence of heat flow from the high thermal mass of pooling water. Engineering design of the proposed mine must take into account this future expected condition. In addition to the thermal berms, side slopes are kept to a low angle grade to minimize the potential for wall collapse. Required Operating Procedure 35 (ROP 35) states: "Land used for oil and gas infrastructure including well pads, production facilities, access roads, and airstrips would be reclaimed." Gravel mine sites as detailed in this SEIS would not be reclaimed to the original "habitat function" or "to ensure eventual ecosystem restoration to the land's previous hydrological, vegetation, and habitat condition, WSR eligibility/suitability, and intent to restore general wilderness characteristics of the area." Individual gravel mine locations will be evaluated on a project basis and would take into account T&E species, soil physical properties such as ice richness and other site-specific conditions.
Brisson	Brook	Trustees for Alaska	80131	205	The lease stipulations and ROPs applicable to water resources lack clarity in terminology and operationalization of how they would be implemented. Without a detailed description of the terminology and scientific methodology outlining the operationalization of the following items it is not feasible in many cases for the stipulations or ROPs to meet their objectives. The terms and phrases below need to be described scientifically and quantitatively (in some cases) within the final SEIS or replaced with new terms or phases in order to be determined or implemented across the Coastal Plain for each watershed where stipulations or ROPs apply. - Active floodplain - Floodplain - River delta - 50-, 100-, 200-year flood for CP rivers - Ordinary high-water mark - Essential pipeline/road crossings - Natural flow of rivers - Disrupt flow from perennial springs - Maintain natural runoff processes - Minimize - Natural function - Disruption - Water quality - Local hydrologic conditions - Protect natural flow - River/Stream/Creek	The glossary has been updated to include definitions for suggested terminology.
Brisson	Brook	Trustees for Alaska	80131	206	The objective for lease stipulation 1 needs to be more clear to ensure it can be met. The current objective has several terms that are unspecific and should be changed in order to protect biologically sensitive areas. The terms "minimize", "disruption of natural flow patterns", "changes to water quality", and "disruption of natural functions" do not have specific and quantifiable meanings. Groups propose the following solution: change "minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from" to "maintain natural flow regimes and the ecological integrity of lotic ecosystems (rivers and streams) resulting from." Lease stipulation 1 also has no defined stipulations associated with the allowable exception to building pipelines, roads, or facilities in river deltas. Permenant pipelines, roads, or industrial facilities within the delta flood plain will negate the objective of the stipulation. Floodplains and deltas serve as important habitat for a host of fish species. Groups propose that the final SEIS use higher resolution IfSAR/InSAR data layers to update NHD layer for the entire Arctic Coastal Plain (ACP). An example of the dataset is currently available for the Canning River (https://netmap-portal.squarespace.com/netmap-portal) and can be produced for the entire ACP through third-party contractors.	Subjective language allows for flexibility in management actions. This flexibility allows for adaptive management that reflects changing on-the-ground conditions at the time of site-specific project analysis.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	207	The objective of lease stipulation 2 also needs to be clarified to ensure it can be met. The current objective has several terms that are unspecific and should be changed in order to protect biologically sensitive areas. The terms "protect", "minimize", "water quality, quantity", "diversity of fish and wildlife habitats", and "disruption of natural functions" do not have specific and quantifiable meanings. Groups suggest that the final SEIS define these terms or replace them with terms that are more specific and measurable such as "Maintain ecological integrity within aquatic and terrestrial ecosystems in order to conserve biodiversity of species".	Subjective language allows for flexibility in management actions. This flexibility allows for adaptive management that reflects changing on-the-ground conditions at the time of site-specific project analysis.
Brisson	Brook	Trustees for Alaska	80131	208	Additionally, lease stipulation 1 allows gravel mines near rivers and streams under all alternatives, including in setback areas, either by not prohibiting it outright or allowing a waiver to be granted.(682) Stipulation 2 is unclear whether it allows gravel mines under all alternatives including via a waiver for Alternative D. This should not be allowed. Gravel mines should be prohibited from areas that are not available for leasing and also in NSO areas because they alter hydrological flows, impair water quality, and alter natural fisheries biodiversity as well as riparian and stream bank vegetation. Additionally, the lease stipulations do not protect water resources from over withdrawal. BLM and FWS should develop an unwaiveable stipulation that prohibits water withdrawals in amounts that would take more water out of the water body than the amount FWS applied for in its instream flow reservation application to keep in the waterbody. (682) DSEIS at 2-7.	Subjective language allows for flexibility in management actions. This flexibility allows for adaptive management that reflects changing on-the-ground conditions at the time of site-specific project analysis.
Brisson	Brook	Trustees for Alaska	80131	209	The objective of lease stipulation 3 needs to be clearer to meet its goal. The agencies should define terms or use terms with a more specific meaning. In the final SEIS, the agencies should change "protect the water quality, quantity, and diversity of fish and wildlife habitats, and populations associated with springs and aufeis across" to "maintain the natural flow regime and ecological integrity of springs and aufeis springs to conserve biodiversity of aquatic and terrestrial species."	Lease Stipulation 3 in Alternative D2 has been updated to include the suggested language "maintain the natural flow regime and ecological integrity of springs and aufeis springs to conserve biodiversity of aquatic and terrestrial species."
Brisson	Brook	Trustees for Alaska	80131	210	The objective of lease stipulation 9 also needs to be clearer to meet its goal, which can be accomplished by defining terms or using terms with a more specific meaning. The agencies should change "protect" to "maintain ecological integrity of" in the final SEIS. Additionally, there is no requirement/Standard for information about nearshore fish habitat mitigation. This should be required in the final SEIS.	Lease Stipulation 9 in Alternative D2 has been updated to include the suggested language "maintain ecological integrity of." The requirement/standard for Lease Stipulation 9 has been updated to include fish.
Brisson	Brook	Trustees for Alaska	80131	211	ROP 8 does not include defined requirements associated with the allowable exception to removal of ice from rivers with defined limits. Due to no limit on river ice extraction or explanation on the authorization framework (like in ROP 9) ROP 8's exception negates the objective and the ROP objective may not be met. In the final SEIS, the agencies should clearly define the process of site-specific authorization including baseline research that needs to be conducted, how decisions will be made to determine the amount of ice allowed to be extracted, and locations where ice would and would not be allowed to be extracted. Additionally, ROP 8 for Alternative D prohibits the removal of ice aggregate from some but not all aufeis, without explanation for the differentiation.	ROP 8 limits the volume and locations potentially available for river ice extraction by only allowing the removal of ice aggregate from grounded areas 4 feet deep or less on a site-specific basis. Quantitative ice limits have not been identified broadly for the entire Program Area because a static threshold may result in different degrees of impacts based on (1) total volume proposed and (2) site-specific hydrology and geomorphology. Site-specific river authorizations would be determined in subsequent NEPA, with respect to the objective of ROP 8. Site-specific authorizations would be granted through future NEPA analyses regarding specific proposed actions. At the programmatic level, the BLM does not have enough information about where, and in what quantities, ice extraction would be requested for a proposed activity to analyze site specific impacts. Site specific impact analysis would be done in subsequent NEPA and include evaluation of local ecological and hydrological conditions. Site-specific authorizations would be made based on the findings of the impact analysis, with reference to the objective of ROP 8. Requirements for baseline research and monitoring would be dependent on the best available information at the time of the NEPA analysis. The aufeis fields identified in ROP 8 Alternative D are all known fields within the Program Area.
Brisson	Brook	Trustees for Alaska	80131	212	The objective for ROP 9 needs to be more clear to meet its goal. In the final SEIS, the agencies should define terms or use terms with a more specific meaning, including changing "adequate habitat for" to "ecological integrity of habitat for". The optional water level and quality monitoring also does not allow for scientific assessment of impacts. Monitoring should be mandatory. ROP 9 also allows water withdrawals of a percentage of unfrozen or available water based on fish species, but BLM and FWS do not explain or justify how it arrived at the percentages.(683) Additionally, for Alternative B and C, it makes modeling and monitoring completely discretionary, further limiting BLM's ability to understand the impacts of water use and regulate it effectively. For Alternative D, it is unclear how the required modeling and monitoring will be factored into permitting and if BLM and FWS will be able to force operations to stop if water withdrawals are having too great of an impact. (683) DSEIS 2-37 to 2-38.	Subjective language allows for flexibility in management actions. This flexibility allows for adaptive management that reflects changing on-the-ground conditions at the time of site-specific project analysis.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	213	ROP 11 lacks defined standards associated with the surfaces in which roads and industrial operations can operate. Terrain with high erosion potential due to slope and surficial geology is necessary to include within ROP or the objective will not be met. In the final SEIS, the agencies should add into the ROP requirement standard that "in order to protect watersheds and maintain the ecological integrity of aquatic ecosystems, travel over terrain with high erosion potential (determined from best available InSAR DEM) would be prohibited."	No change. While BLM does not currently have a prohibition on travel over terrain/soils with "high erosion potential," both BLM and industry do utilize the suggested technologies to optimize routing in advance of the survey and to avoid areas of excessive slopes. These DEM maps also are utilized to determine optimized river/stream crossings. Through this optimization process, much of the terrain/soils areas which would fall into that "high erosion potential" class are eliminated from the project.
Brisson	Brook	Trustees for Alaska	80131	214	ROP 12's requirement/standards will not necessarily meet the objective. Even if the procedures are followed the objective may not be met. The agencies need to also require at site monitoring of streamflow prior to installing ice or snow bridge to determine the site-specific natural flow regime during the spring.	Text suggested to add to D2 as NEW requirement/standard b): "The permittee shall conduct at-site monitoring of streamflow prior to installing ice or snow bridges to determine natural flow regime during the spring." Edit existing b)/new c) to remove "any" to read "with ice thickness and water depth data..."
Brisson	Brook	Trustees for Alaska	80131	215	ROP 16 lacks defined standards associated with the allowable exception for BLM to authorize drilling in floodplains of fish-bearing rivers and streams, which will negate the ROP objective. Drilling will change water quality due to the quantity of water required for drilling and discharged water. Also, the term "fish-bearing" is unspecific. Fish move throughout lentic and lotic systems in the Arctic and use a variety of freshwater, estuarine, and marine habitats throughout their lives. Just because a fish is not detected at a specific time does not mean it did not use an aquatic environment for a portion of its life as important habitat. Information on Arctic fish species is limited and we know very little about fish movement patterns and resource selection. In the final SEIS, the agencies should change "fish-bearing water bodies" to "aquatic habitats with confirmed fish presence and the habitats connected by perennial or temporary aquatic water to locations with confirmed fish presence." Additionally, ROP 16 prohibits exploratory drilling in some rivers and streams to protect fish; exploratory drilling should be prohibited in all rivers and streams to protect water quality and hydrology.	Subjective language allows for flexibility in management actions. This flexibility allows for adaptive management that reflects changing on-the-ground conditions at the time of site-specific project analysis.
Brisson	Brook	Trustees for Alaska	80131	216	ROP 19 terms "water quality" and "diversity" are unspecific within the objective which makes the objective poorly defined. The agencies should replace the existing objective with "Maintain ecological integrity within aquatic and terrestrial ecosystems in order to protect biodiversity of species." These terms (ecological integrity, aquatic, terrestrial, ecosystem, biodiversity) all have a specific scientific meaning. There is also insufficient scientific evidence documented in the draft SEIS to know if a 500 ft buffer is adequate for ROP 19 to meet its objective (i.e., protect aquatic and terrestrial species and their habitats). The term "fish-bearing" is also unspecific. Fish move throughout lentic and lotic systems in the Arctic and use a variety of freshwater, estuarine, and marine habitats throughout their lives. Just because a fish is not detected at a specific time does not mean it did not use an aquatic environment for a portion of its life as an important habitat. In addition, if a species occurs in low numbers, its detection probably requires additional effort and multiple gear types for sampling (Haynes et al. 2013). Information on Arctic fish species is limited and we know very little about fish movement patterns and resource selection. To account for this, in the final SEIS the agencies should change "fish-bearing water bodies" to "aquatic habitats with confirmed fish presence and the habitats connected by perennial or temporary aquatic water to locations with confirmed fish presence."	Subjective language allows for flexibility in management actions. This flexibility allows for adaptive management that reflects changing on-the-ground conditions at the time of site-specific project analysis.
Brisson	Brook	Trustees for Alaska	80131	217	The objective for ROP 22 needs to be more clear to meet its objective. Specifically, the term "natural drainage patterns" needs to be a more specific term. In the final SEIS, the agencies should change "alteration of natural drainage patterns" to "alternation perennial and temporary surface and subsurface water movement patterns." ROP 22 also lacks defined standards associated with the culvert installation, which potentially void the ROP objective. Terms within the ROP such as "natural flow" and "adversely affecting natural flow" need to be defined and detailed methodology need to be described. In the final SEIS, the agencies should change "natural flow" to "natural flow regime" and "adversely affecting the natural flow regime", which have specific scientific meanings (see Poff et al. 1997). ROP 22's stream crossing methods are unspecific and out of date (20 + years old). In the final SEIS, the agencies should consider the more recent impacts of culvert use on fish and aquatic species (e.g., Maitland et al. 2016). The agencies can look at NOAA 2023 for more recent fishway planning and design criteria to better develop a ROP that can meet the lease stipulation objective.	Subjective language allows for flexibility in management actions. This flexibility allows for adaptive management that reflects changing on-the-ground conditions at the time of site-specific project analysis.
Brisson	Brook	Trustees for Alaska	80131	236	Lease stipulation (LS) and required operating procedures (ROPs) within Section 2 of the draft SEIS lack adequate clarity in terminology and operationalization of how they would be implemented. Without a detailed description of the terminology and scientific methodology outlining the operationalization of the following items it isn't feasible in many cases for the LS or ROPs to meet their objectives. The terms below should be further defined according to best available science and, as possible, quantitative methods, or replaced with new terms to ensure successful implementation across the Coastal Plain for each watershed where LS or ROPs apply. - Active floodplain - Floodplain - River delta - 50-, 100-, 200-year flood for CP rivers - Ordinary high-water mark - Essential pipeline/road crossings - Natural flow of rivers - Disrupt flow from perennial springs - Maintain natural runoff processes - Minimize - Natural function - Disruption - Water quality - Local hydrologic conditions - Protect natural flow - River/Stream/Creek	Terminology does and will reflect the best available science and management practices.
Brisson	Brook	Trustees for Alaska	80131	237	Lease stipulation objectives lack adequate specificity. Without clearer and more measurable objectives it will be difficult to determine if the proposed lease stipulation or ROP has indeed met the objective. Lease stipulations and ROPs are not specific enough to clearly determine how they impact the objectives, especially with allowable exceptions, waivers, and modifications in Alternatives B, C, and D. In addition, various requirements and standards are insufficient to ensure compliance with the objective.	This language is necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	240	Lease Stipulation 2 - Objective: the objective needs to be clearer to meet its goal. The current objective has several terms that are unspecific and should be changed in order to protect biologically sensitive areas. The terms "protect", "minimize", "water quality, quantity", "diversity of fish and wildlife habitats", and "disruption of natural functions" do not have specific and quantifiable meanings. Solution: define these terms in the SEIS or replace them with terms that are more specific and measurable such as "Maintain ecological integrity within aquatic and terrestrial ecosystems in order to conserve biodiversity of species".	Terminology does and will reflect the best available science and management practices.
Brisson	Brook	Trustees for Alaska	80131	241	Lease Stipulation 3 - Objective: the objective needs to be clearer to meet its goal. Define terms or use terms with a more specific meaning. Solution: change "protect the water quality, quantity, and diversity of fish and wildlife habitats, and populations associated with springs and aufeis across" to "maintain the natural flow regime and ecological integrity of springs and aufeis springs to conserve biodiversity of aquatic and terrestrial species."	Terminology does and will reflect the best available science and management practices.
Brisson	Brook	Trustees for Alaska	80131	242	Lease Stipulation 9 - Objective: the objective needs to be more clear to meet its goal. Define terms or use terms with a more specific meaning. Solution: change "protect" to "maintain ecological integrity of". Requirement/Standard: information is missing about nearshore fish habitat mitigation. Solution: insert "fish and".	Terminology does and will reflect the best available science and management practices. Alternative D2 reflects the suggestion to include inserting "fish."
Brisson	Brook	Trustees for Alaska	80131	243	Required Operating Procedure 8 - Requirement/standard: No defined parameters associated with the allowable exception to removal of ice from rivers without defined limits. Due to no limit on river ice extraction or explanation on the authorization framework (Like in ROP 9) the ROPs exception negates the objective and the ROP objective may not be met. Solution: clearly define the process of site-specific authorization including baseline research that needs to be conducted, how decisions will be made to determine the amount of ice allowed to be extracted, and locations where ice would and would not be allowed to be extracted.	Subjective language allows for flexibility in management actions. This flexibility allows for adaptive management that reflects changing on-the-ground conditions at the time of site-specific project analysis.
Brisson	Brook	Trustees for Alaska	80131	244	Required Operating Procedure 9 - Objective: the objective needs to be clearer to meet its goal. Define terms or use terms with a more specific meaning. Solution: change "adequate habitat for" to ecological integrity of habitat for". - Requirement/standard: Optional water level and quality monitoring does not allow for scientific assessment of impacts. Solution: monitoring should be mandatory.	The term "ecological integrity" is not universally defined and therefore it is not appropriate to include in the ROP. Further, Subjective language allows for flexibility in management actions. This flexibility allows for adaptive management that reflects changing on-the-ground conditions at the time of site-specific project analysis.
Brisson	Brook	Trustees for Alaska	80131	245	Required Operating Procedure 11 - Requirement/standard: No defined parameters associated with the surfaces in which roads and industrial operations can operate. Terrain with high erosion potential due to slope and surficial geology is necessary to include within the ROP, or the objective will not be met. Solution: add requirement/standard that "in order to protect watersheds and maintain the ecological integrity of aquatic ecosystems, travel over terrain with high erosion potential (determine from best available InSAR DEM) would be prohibited".	No change. While BLM does not currently have a prohibition on travel over terrain/soils with "high erosion potential," both BLM and industry do utilize the suggested technologies to optimize routing in advance of the survey and to avoid areas of excessive slopes. These DEM maps also are utilized to determine optimized river/stream crossings. Through this optimization process, much of the terrain/soils areas which would fall into that "high erosion potential" class are eliminated from the project.
Brisson	Brook	Trustees for Alaska	80131	246	Required Operating Procedure 12 - Requirement/standard: Even if the procedures are followed the objective may not be met. Solution: need to also require on-site monitoring of streamflow prior to installing ice or snow bridge to determine the site-specific natural flow regime during the spring.	Suggested language adopted in Alternative D2 - see part c.
Brisson	Brook	Trustees for Alaska	80131	247	Required Operating Procedure 14 - Objective: the objective needs to be clearer to meet its goal. Solution: delete "that fish prey on". - Requirement/standard: how would the lessee and BLM demonstrate that "no additional impacts would occur on fish or aquatic invertebrates"? Solution: define the steps, procedures, and process for the standard.	This comment does not match ROP 14, the objective of which is to minimize the effects of seismic surveys on fish.
Brisson	Brook	Trustees for Alaska	80131	248	Required Operating Procedure 16 - Requirement/standard: No defined parameters associated with the allowable exception of BLM authorized drilling in floodplains of fish-bearing rivers and streams will negate the ROP objective. Drilling will change water quality due to the quantity of water required for drilling and discharged water. Also, the term "fish-bearing" is unspecific. Fish move throughout lentic and lotic systems in the Arctic and use a variety of freshwater, estuarine, and marine habitats throughout their lives. Just because a fish is not detected at a specific time does not mean it does not rely on that aquatic environment for a portion of its life. Information on Arctic fish species is limited and we know very little about fish movement patterns and resource selection. Solution: change "fish-bearing water bodies" to "aquatic habitats with confirmed fish presence and the habitats connected by perennial or temporary aquatic water to locations with confirmed fish presence".	Language adopted in Alternative D2 ROP 16. Other subjective language remains as it allows for flexibility in management actions. This flexibility allows for adaptive management that reflects changing on-the-ground conditions at the time of site specific project analysis.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	249	Lease Stipulation 1 - Objective: the objective needs to be clearer to meet its goal. The current objective has several terms that are unspecific and should be changed in order to protect biologically sensitive areas. The terms "minimize", "disruption of natural flow patterns", "changes to water quality", and "disruption of natural functions" do not have specific and quantifiable meanings. Solution: change "minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from" to "maintain natural flow regimes and the ecological integrity of lotic ecosystems (rivers and streams) resulting from." - Requirement/standard: No defined parameters associated with the allowable exception to building pipelines, roads, or facilities in river deltas. Permeant pipelines, roads, or industrial facilities within the delta flood plain will negate the objective of the LS. Floodplains and deltas serve as important habitat for a host of fish species. Solution: specify what, if any, types of exceptions will be allowed in floodplains and require those exceptions maintain natural flow regime and the ecological integrity of lotic ecosystems. - Requirement/standard: The resolution of the available National Hydrography dataset in Alaska is currently inadequate to determine stream locations. Solution: prior to any project-level approvals, use higher resolution InSAR data layers to update NHD layer for the entire Arctic Coastal Plain (ACP). An example of the dataset is currently available for the Canning River (https://netmap-portal.squarespace.com/netmap-portal) and can be produced for the entire ACP through third-party contractors.	Terminology does and will reflect the best available science and management practices. Additionally, this language is necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions.
Brisson	Brook	Trustees for Alaska	80131	250	Required Operating Procedure 19 - Objective: the terms "water quality" and "diversity are unspecific, which makes the objective poorly defined. Solution: replace existing objective with "Maintain ecological integrity within aquatic and terrestrial ecosystems in order to protect biodiversity of species". These terms (ecological integrity, aquatic, terrestrial, ecosystem, biodiversity) all have a specific scientific meaning, as discussed further below. - Requirement/standard: Insufficient scientific evidence documented in the draft SEIS to know if a 500 ft buffer is adequate for ROP 19 to meet its objective (i.e., protect aquatic and terrestrial species and their habitats). Solution: conduct an assessment of stream buffer width to protect stream ecosystems prior to any project-level approvals. - Requirement/standard: As discussed above for ROP 16, the term "fish-bearing water bodies" is unspecific and should be changed to "aquatic habitats with confirmed fish presence and the habitats connected by perennial or temporary aquatic water to locations with confirmed fish presence".	Terminology does and will reflect the best available science and management practices. Setbacks were determined to be appropriate by subject matter experts from both the BLM and USFWS.
Brisson	Brook	Trustees for Alaska	80131	251	Required Operating Procedure 20 - Objective: the objective needs to be clearer to meet its goal. Solution: change "Maintaining free passage of marine and anadromous fish" to "Maintain marine, estuarine, and freshwater fish migratory passage and habitat". There are other fish classes besides marine and anadromous that use nearshore areas for movement. - Requirement/standard: detailed methodology and planning and design criteria need to be listed to meet objective. Monitoring is important, but it will not ensure the free passage of fish. Solution: insert "to ensure free passage of fish, all nearshore infrastructure would adhere to best available methods, procedures, and protocol to maintain nearshore fish passage and habitats as defined by ...". - Requirement/standard: Appropriate entities not defined (e.g., USWFS, NMPS) and expertise not defined. Solution: identify and list the appropriate departments and staff who have the expertise to meet objective.	ROP 20 has been updated with appropriate language. Other subjective language remains as it allows for flexibility in management actions. This flexibility allows for adaptive management that reflects changing on-the-ground conditions at the time of site specific project analysis.
Brisson	Brook	Trustees for Alaska	80131	252	Required Operating Procedure 22 - Objective: the objective needs to be clearer to meet its goal. The term "natural drainage patterns" should be replaced with a more specific term. Solution: change "alteration of natural drainage patterns" to "alternation of perennial and temporary surface and subsurface water movement patterns". - Requirement/standard: No defined parameters associated with culvert installation potentially void ROP objective. Terms within the ROP draft SEIS such as "natural flow" and "adversely affecting natural flow" need to be defined and detailed methodology needs to be described. Solution: change "natural flow" to "natural flow regime" and "adversely affecting the natural flow regime", which has a specific scientific meaning (see Poff et al. 1997). - Requirement/standard: Stream crossing methods are unspecific and out of date (20 + years old). Solution: new impacts of culverts on fish and aquatic species need to be considered (e.g., Maitland et al. 2016) and corresponding mitigation measures integrated into the ROP. See NOAA 2023 for more recent fishway planning and design criteria in order to better develop a ROP that can meet the objective.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed.
Brisson	Brook	Trustees for Alaska	80131	253	Required Operating Procedure 28 - Objective: The objective does not include fish or aquatic invertebrates. Solution: Lacustrine and riverine geomorphic and ecological classification as well resource selection modeling for fish, and ground-based wildlife surveys need to be included in the ROP in order to identify and protect important habitat for aquatic invertebrates and all fish species prior to development. Recent research in Alaska has demonstrated that habitat modeling approached coupled with telemetry movement collection can provide an effective tool for understanding fish habitat use (Fraleigh et al. 2016; Huntsman et al. 2017; Jalbert et al 2021; Leppi et al. 2022).	Suggested language adopted in Alternative D2.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	279	Lease Stipulation 6 is intended to convey protections to caribou summer habitat and to "minimize disturbance and hindrance of caribou or alteration of caribou movements."(770) This is a high bar but is important for achieving the Arctic Refuge statutory purposes, which go beyond Tax Act provisions for oil and gas leasing. Due in large part to its importance for caribou and corresponding subsistence values, three of the four ANILCA purposes for the Arctic Refuge are related to conserving the PCH.(771) These purposes, along with the 1987 International Agreement on the Conservation of the Porcupine Caribou Herd, impose substantive duties on the Department of the Interior to preserve and protect caribou and their habitat. The draft SEIS acknowledges that these purposes are not superseded by the added purpose from the Tax Act,(772) making it essential that BLM take prudent actions to achieve them. In light of this, it is unreasonable that Lease Stipulation 6 does not add additional protections for caribou summer habitat and movements in Alternatives B or C, but solely relies on ROP 23. As is further described below, ROP 23 is inadequate for providing for "unhindered movement of caribou through the area" as is purported for management according to the note in Lease Stipulation 6.(773) (770) DSEIS at 2-15. (771) ANILCA § 303(2)(B); see also supra Section II.A. (772) DSEIS at ES-2. (773) DSEIS at 2-15.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	280	Lease Stipulation 7 focuses on measures to protect PCH primary calving habitat. Alternative B contains requirements for timing limitations, traffic speed limits, and aircraft altitude restrictions, however these are inadequate to protect caribou during the most sensitive period of their annual cycle - calving. Alternative B proposes traffic speed limits "when caribou are within 0.5 mile of the road."(774) Caribou can travel very quickly, covering half a mile in a matter of minutes.(775) It is thus important to extend this boundary and to use multiple monitoring methods to manage vehicle activities. These should include: 1) daily review of location data from collared caribou to examine general movement patterns long before caribou contact roads, 2) daily or alternate day aerial reconnaissance flights in buffer areas around roads using the least disruptive means possible (e.g., unmanned aerial systems or other comparable technology where feasible) to provide more detailed location information, including of non-collared individuals, and 3) road-based surveys to detect caribou proximity to roads. Traffic alteration must be started early and increasingly restricted as caribou near roads. Also, although BLM and FWS acknowledges that maternal caribou are displaced from roads during calving, even with low traffic levels (< 8 vehicles /day),(776) no limits on traffic volume are included here or in other stipulations and ROPs, only a speed limit. BLM and FWS should restrict traffic volume per hour whenever caribou are in proximity to roads but should better define what is meant by "in proximity to roads." It is also important that BLM and FWS include in the final SEIS data on road traffic volumes by season and operation phase (e.g., exploration, construction, production, etc.) from the NPR-A, Prudhoe Bay, and Kuparuk to better illustrate what traffic loads may be expected at different seasons of the year. Even these mitigation measures are unlikely to be ultimately effective, however, as the draft SEIS notes that "some level of displacement of calving caribou has been shown to occur even with low levels of traffic,"(777) which aligns with recent scientific findings.(778) The high sensitivity of calving caribou to human disturbance and sustained shifts in CAH distribution away from development areas in spite of mitigation measures(779) indicate that the requirements specified in this stipulation are unlikely to remove disturbance and displacement of female caribou with young calves during calving. (774) DSEIS at 2-19. (775) Jim Dau (Alaska Department of Fish & Game caribou biologist, retired) pers. comm. (776) DSEIS at 3-219. (777) DSEIS at 3-214. (778) Severson et al. in press. (779) Cameron et al. 2005; Russell and Gunn. 2019.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	281	Under the standards for Alternative B in Lease Stipulation 7, aircraft would have to maintain an altitude of at least 1,500 feet above ground level over caribou calving range. Federal Aviation Administration (FAA) guidance recommends a minimum altitude of 2,000 feet above ground level over all National Wildlife Refuges and other noise-sensitive areas.(780) It is important that this minimum standard be included in this stipulation and elsewhere (e.g., ROP 34). In line with FAA guidelines for National Wildlife Refuges, this minimum altitude of 2,000 feet should apply to all alternatives and over the entire program area at all times. This will help meet the draft SEIS requirement to maintain the Refuge's original purposes under the 1960 PLO and ANILCA.(781) It will also be consistent with the importance of the entire Coastal Plain for calving and post-calving habitat over time. It should be noted, however, that even incorporating this minimum requirement is unlikely to prevent impacts to caribou. Flight ceilings often are lower than 1,500 feet due to weather, particularly during the calving season,(782) creating concern that weather exceptions will increase the impact of aircraft on caribou despite the guidance of Lease Stipulation 7 and ROP 34. (780) FAA. 1984. (781) DSEIS at ES-2. (782) Ken Whitten (Alaska Department of Fish & Game PCH caribou biologist, retired) pers. comm.	Alternative B was carried forward from the Draft SEIS and remains the same. Alternative D2 adopted the suggested language stating that aircraft would maintain an altitude of 2,000 feet above ground level (except for takeoffs and landings) over caribou calving range, unless doing so would endanger human life or violate safe flying practices.
Brisson	Brook	Trustees for Alaska	80131	282	While the provisions for traffic and aircraft restrictions are inadequate under Alternative B for Lease Stipulation 7, it is notable that they are entirely absent from Alternative C, which only covers no leasing and NSO restrictions. It is important that strengthened provisions for reducing traffic and aircraft effects on calving caribou also be included into Lease Stipulation 7 for Alternative C.	Alternative C was carried forward from the Draft SEIS and remains the same. However, ROP 6 of Alternative D and D2 adopted the updated timing limitations based on new information.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	283	Lease Stipulation 8 is intended to protect the PCH post-calving habitat area. However, the standard under Alternative B solely relies upon ROP 23 to achieve this, which as noted below is insufficient for achieving the desired outcomes. Alternative C adds controlled surface use (CSU) limitations and provisions for stopping traffic or even evacuating roads to support caribou crossing. Justification is needed based on the scientific literature to explain why the specific infrastructure limitations specified in the CSU restrictions were chosen and why those levels are expected to have a beneficial outcome on caribou. This is not explained in Section 3.3.4 or elsewhere in the draft SEIS. Further specification is also required for the traffic regulations. Traffic stopping is to occur when an attempted crossing by a large number of caribou "appears to be imminent."(783) It is unclear how an operator is to determine whether crossing "appears to be imminent," which could lead to varying interpretations of this requirement and varying levels of impact or even a complete lack of meaningful protections for caribou. Instead, it would be beneficial to include specific processes or distance thresholds at which decisions to halt traffic and evacuate roads would be made, as with Alternative D under Lease Stipulation 6. As is noted above for Lease Stipulation 7, even with these provisions impacts to caribou may remain. For example, altered movement behavior in the vicinity of roads has been noted at distances beyond the 2-mile buffer proposed for Alternative D under Lease Stipulation 6.(784) (783) DSEIS at 2-20. (784) Panzacchi et al. 2013; Wilson et al. 2016.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed. Additionally, Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	284	While part of the objective for Lease Stipulation 9 includes minimizing "hindrance or alteration of caribou movement in caribou coastal insect relief areas,"(785) under Alternative B the only real requirement is to develop and implement a conflict avoidance and monitoring plan. No standards are given specifying the content or effectiveness expected for this plan, making it unclear whether it will have the desired effect of avoiding impacts to caribou insect relief habitat and behavior. Stronger standards, tied to specific requirements, are needed to ensure that caribou are able to access insect relief habitat unhindered. Harassment due to insects can have a negative effect on caribou body condition and overall populations,(786) leading to lower rates of calves being born in years following high insect activity.(787) It can also threaten the ability of caribou to replenish depleted body stores, as prolonged exposure to insects can shift lactating female caribou from positive to negative energy balance(788) and decrease the probability of survival.(789) This makes it very important that caribou be able to access insect relief habitat and move between insect relief areas and quality forage habitat as conditions and climate change. This is of special concern within the Arctic Refuge Coastal Plain as insect harassment estimates are higher for the PCH summer range than for much of the CAH summer range,(790) where previous studies have been conducted and impacts noted. Thus, insect harassment effects may be stronger on the PCH compared to the CAH, accentuating the effect of any hindrance of caribou in reaching insect relief areas. The final SEIS should acknowledge and account for this likely difference. (785) DSEIS at 2-21. (786) Dau. 1986. (787) Johnson et al. 2022; National Research Council. 2003. (788) Fancy. 1986. (789) Johnson et al. 2022. (790) Bali. 2016.	Alternative B was carried forward from the Draft SEIS and remains the same, but for minor updates where appropriate. Additionally, Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	285	The requirements in ROP 23 for Alternatives B and C are the primary means by which impacts to caribou are expected to be reduced, according to Lease Stipulations 6-8. These may help reduce impacts from infrastructure on caribou but ultimately are insufficient. In alignment with Indigenous Knowledge, recent scientific studies have showed continued displacement and avoidance of areas near roads by CAH caribou, despite over 40 years of exposure and numerous mitigation measures.(791) In addition, other development involving the Trans-Alaska Pipeline and Dalton Highway corridor had major effects on the distribution and reproductive behavior of the CAH.(792) These observations indicate that the requirements in ROP 23 are unlikely to provide sufficient protection during the calving, post-calving, and mosquito relief periods. This is compounded by differences between the PCH and CAH that make disturbance responses even greater for the PCH (see further discussion of these differences in the ANILCA Section 810 section below) and by the lack of information about how very large groups of caribou, some larger than the peak herd size of the CAH, will respond to infrastructure when aggregated.(793) Such responses may also be seen by smaller groups of caribou, as affirmed by the draft SEIS statement that "under ROP 23, some groups of less than 5000 animals...may still be impacted and have difficulty crossing infrastructure."(794) Deflection and displacement of caribou are likely despite the provisions of this ROP. (791) Johnson et al. 2020; Prichard et al. 2020. (792) Cameron and Whitten. 1979; Cameron et al. 1979; Cameron et al. 2002. (793) Russell and Gunn. 2019; DSEIS at 2-54. (794) DSEIS at 3-219.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed. Additionally, Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	286	Further issues to be addressed in ROP 23 include use of tentative language and unjustified time limits. The ROP states that ramps or buried pipelines "may be required by the BLM Authorized Officer."(795) Under what conditions would this decision be made? What circumstances would trigger use of buried pipelines or ramps? This needs to be made clear and justified with the best available scientific information. Similar tentative language is included in requirement g, which states that "traffic may be stopped throughout a defined area for up to 4 weeks, to prevent displacement of calving caribou."(796) However, specific details of what might lead to such a closure are not provided. Furthermore, no justification is given for why a four-week maximum is listed for closure. This should be changed to read: "...throughout a defined area whenever necessary to prevent displacement of caribou." This recommended language not only removes the arbitrary 4-week deadline but also broadens the focus from just calving caribou to reflect the importance of the post-calving and insect relief periods. (795) DSEIS at 2-53. (796) DSEIS at 2-54.	Terminology does and will reflect the best available science and management practices. Additionally, this language is necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions. Suggested language adopted in Alternative D2.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	288	In the timing limitations portion of Lease Stipulation 6, the inclusion of flexible language specifying that construction activities using heavy equipment will be suspended if caribou arrive at the Coastal Plain early or stay late is important for being responsive to greater variability in a changing climate and will enhance the ongoing robustness of the proposed measures. Nonetheless, the timing limitations are unlikely to be ultimately effective because the presence of infrastructure and people may still have an effect on caribou. While one recent study reported no clear evidence of caribou avoidance of an unoccupied, inactive/not operating elevated drill platform on calving grounds for one summer,(802) it is entirely possible that caribou response to a completely abandoned platform may differ from one in which humans are present and production continues, even if construction with heavy equipment is prohibited. Additionally, the observation included only one summer; drawing broad conclusions about displacement and the ability of timing restrictions to protect caribou based on such a limited timeframe is questionable. A report by well-published caribou experts recently stated, "We simply do not know whether... continuing drilling while shutting down construction (Time Limited stipulation) is effective mitigation."(803) Until such time as robust scientific studies demonstrate that such conditions will not disturb caribou and their calves, BLM and FWS should not presume such measures will prevent displacement. (802) Prichard et al. 2022. (803) Russell and Gunn. 2019 at 92.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed.
Brisson	Brook	Trustees for Alaska	80131	289	A major addition to Alternative D is the requirement for an Adaptive Management Plan (AMP) to be developed by the lessee, operator, or contractor. This is described in Lease Stipulation 6(804) and expanded upon in ROPs 23 and 23.1.(805) It is noteworthy that while the AMP would be developed and financed by the lessee or their designated contractor, it would be reviewed and approved by the FWS, BLM, and the International Porcupine Caribou Herd Technical Committee (PCTC) and would be carried out by an organization or agency hired by BLM and FWS. This is an important balance of responsibility and rigor where the party poised to most benefit from leasing, the oil company or other development entity, provides the funding to support monitoring and mitigation of caribou and people that may be harmed by its actions and where there is independent review by qualified experts and work is carried out by a third party. However, we suggest that the organization or agency hired by BLM and FWS undergo a conflicts check or screening to avoid conflicts of interest. Similarly, the requirement for coordination with Tribal governments and involvement of Tribal observers in monitoring efforts should help ensure Indigenous Knowledge is involved in the AMP process. Data collected as part of the plan, such as vehicle traffic counts, times, speed, and caribou interactions will play an important role in providing information that has largely been lacking to date. With the exception of a few recent studies,(806) this kind of detailed information is rarely available for infrastructure in northern Alaska but can play an important role in understanding the responses of caribou and other species to human infrastructure and activity and what factors drive these responses. We strongly request that the AMP and its various components be retained in the final decision. (804) DSEIS at 2-16 to 2-18. (805) DSEIS at 2-54 to 2-56. (806) Prichard et al. 2022; Severson et al. in press.	The BLM and USFWS recommend that ROPs 23 and 23.1 be retained in the preferred alternative.
Brisson	Brook	Trustees for Alaska	80131	290	Lease Stipulation 13 also applies only to Alternative D. It seeks "to minimize the areal extent of development and redundant infrastructure" through development of a Master Development Plan for each field development and requiring sharing of surface infrastructure whenever possible.(807) We urge that this plan incorporate the ultimately projected "full-field" development at the onset, rather than taking an incremental stance. Because caribou exhibit displacement responses beyond the footprint of infrastructure(808) and reduction of the surface footprint will also likely reduce the amount of additional disturbance for things such as gravel mining, this stipulation is likely to convey positive benefits for caribou and is an important addition to the SEIS. (807) DSEIS at 2-23. (808) E.g., Dau and Cameron. 1986; Johnson et al. 2020.	The BLM and USFWS recommend that Lease Stipulation 13 be retained in the preferred alternative.
Brisson	Brook	Trustees for Alaska	80131	291	We note that since the draft SEIS acknowledges that "all lands in the Arctic Refuge Coastal Plain are recognized as habitat of the PCH and CAH,"(814) and over time the entire Coastal Plain is important for caribou calving, post-calving, insect relief, and summer foraging,(815) the only way to fully comply with ROP 21 and to maintain the other Refuge purposes is to prohibit surface infrastructure within the Coastal Plain. (814) DSEIS at 2-15. (815) 2019 DEIS Comment Letter Appendix B at Map 49 and animation of caribou annual movements. See also Russell and Gunn. 2019.	This suggestion would not meet the requirements of the Section 20001(c)(1) of PL 115-97. However, Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears, and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	292	ROP 33 requires sharing of geographic information system-compatible shapefiles depicting the footprint of all temporary and permanent infrastructure, including construction dates, widths, etc. This is very important data to enable BLM and USFWS to keep infrastructure within the 2,000-acre limit established by the Tax Act, enable monitoring of environmental impacts, and facilitate scientific studies of any possible environmental responses to development. The additions in Alternative D, specifying that ice and snow roads, mines, reservoirs, islands, and docks be included in this geospatial information are important to provide an adequate picture of the full scope and footprint of development and should be retained in the final selected alternative. This information should also include seismic lines, camp move trails, water withdrawal site and quantity, and aircraft overflight dates, numbers, and altitudes. We also request that these data be made publicly available. In rare situations where data cannot be made available to the general public for legitimate reasons, they still should be made available upon reasonable request for scientific and other similar purposes.	Data will be made available to both the public and scientific communities when possible.
Brisson	Brook	Trustees for Alaska	80131	293	In the description of Lease Stipulation 1, the "Objective" description for Alternative C adds a sentence about protecting water quality, quantity, and diversity of fish and wildlife habitats and populations associated with springs and aufeis across the Coastal Plain that is not included in the objective of Alternative D.(816) As aufeis and gravel areas along rivers provide important insect relief habitat for caribou,(817) we request that this extra sentence also be added to Alternative D to reflect BLM's commitment to protecting caribou habitat and populations, as well as those of other species, via Lease Stipulation 1. (816) DSEIS at 2-7. (817) DSEIS at 3-195.	Suggested language adopted in Alternative D and D2.
Brisson	Brook	Trustees for Alaska	80131	294	The requirement/standard for Lease Stipulation 2 under Alternative D indicates that pipelines and road crossings essential to carry out operations "would be permitted through setback areas" while Alternative C offers more tentative language, indicating that such facilities "may be considered."(818) Given the importance of the Canning River Delta for CAH insect relief,(819) and the uncertainties about large herds of caribou navigating barriers to movement,(820) it is important that such decisions be carefully evaluated and approved only if essential and if other alternatives that could have less impact upon caribou and other species are unavailable. Using more tentative language will reflect the importance of such due diligence and avoid automatic approval of proposed infrastructure in setbacks. (818) DSEIS at 2-9. (819) DSEIS Map 3-35. (820) Russell and Gunn. 2019; DSEIS vol 1 at 2-54, 3-219.	Suggested language adopted in Alternative D and D2.
Brisson	Brook	Trustees for Alaska	80131	295	As is noted above, the Adaptive Management Plan (AMP) proposed for Alternative D under Lease Stipulation 6, ROP 23, and ROP 23.1 presents a number of important protections for caribou summer habitat. Nonetheless, improvement is necessary. One area in which the AMP should be strengthened is in ensuring that the results of monitoring and any other scientific studies required under the AMP and associated plans, including caribou movement and space use studies (ROP 23f), vehicle traffic monitoring (ROP 23i), and more, be made available to the public at a minimum, and we encourage that they also be published in the peer reviewed-scientific literature. Such findings and resultant reports/publications should first be reviewed by the PCTC or a comparable group of independent scientists to ensure they are meeting the intended standard of scientific rigor necessary to achieve the objective of Lease Stipulation 6. Since potential leasing and development would happen on federal public lands, it is important that the public be made aware of its effects and the data be made available, wherever possible, for independent verification. We appreciate that ROP 23.1 requires development of an "accessible and comprehensive data repository"(821) and request that it be specified that this will be made publicly available. (821) DSEIS at 2-56.	Data will be made available to both the public and scientific communities when possible.
Brisson	Brook	Trustees for Alaska	80131	296	While specifying a distance at which traffic will be slowed to minimize impacts to caribou is an important improvement over the vague language for Alternative C in Lease Stipulation 8, the 2-mile threshold used in Lease Stipulation 6 for Alternative D still may not be sufficient for avoiding impacts to caribou. Wilson et al.(822) evaluated road responses of caribou to the Delong Mountain Transportation System (Red Dog mining road) at a broader spatial scale of over 9 miles from roads and found altered movement behavior and slow crossing for a portion of individuals. This was on a road system where traffic also was stopped when caribou were on or adjacent to the road, suggesting that some caribou may show altered movement behavior at greater distances than protected by the provisions of this stipulation. (822) Wilson et al. 2016.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	297	One additional major shortcoming of Lease Stipulation 6 is the lack of attention to the CAH. While the note associated with the stipulation recognizes that "All lands in the Arctic Refuge Coastal Plain are recognized as habitat of the PCH and CAH," the language that follows only refers to the PCH with no specifications of CAH protections. While many of the proposed restrictions would apply to both herds, it is important that protections for both herds be specified as both are important ecologically and for subsistence.	Additional language added to the note in LS 6 Alternative D2 to recognize that the portion of the Central Arctic Herd range within the coastal plain is encompassed within the range of the Porcupine Caribou Herd.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	298	As is noted above, ROP 23 under Alternative D adds a number of important provisions to enhance protections for caribou. However, there are some areas where these measures should be strengthened. The ROP requires daily monitoring of satellite collar data to identify large aggregations of caribou within 30 km of infrastructure. However, no description is given of how "large aggregations" will be identified based on the use of collars. It is important to have more information provided about what numbers of collars at what distance thresholds constitute a "large aggregation" to be able to evaluate the effectiveness of this proposed measure. The expanded role of the PCTC in the AMP process and other parts of Alternative D will only strengthen protections for caribou if there is meaningful engagement, communication, and partnership with the PCTC. This includes sufficient funding to carry out the proposed activities, which should be provided by the lessee. BLM and FWS should include affirmation, or ideally a Memorandum of Understanding or similar agreement, indicating that the PCTC has agreed to partner with BLM and FWS and has the time and resources to be able to carry out the indicated monitoring and communication with lessees, along with the other functions stated in the draft SEIS, such as sitting on the AMP Steering Committee (ROP 23.1). If the PCTC does have capacity for these things, it would be helpful to have them added to the list of groups that will review and approve of a lessee's proposed vehicle use management plan (ROP 23i) to ensure independent scientific evaluation of any proposed plan. One other limitation of ROP 23 as currently phrased for Alternative D is the retention of a 4-week maximum duration of traffic stoppage to prevent displacement of caribou. (823) As is discussed above in the limitations of Alternative B and C, no justification is provided for this time limit. It should be removed and replaced by a requirement to stop traffic whenever needed to prevent displacement of caribou. (823) DSEIS at 2-55.	The BLM and USFWS cannot prescribe at this time which organization would be hired to carry out the indicated monitoring and communication with lessees, as organizational structure, capabilities, and existence at the time of potential operations is unknown. Subjective language allows for flexibility in management actions. This flexibility allows for adaptive management that reflects changing on-the-ground conditions at the time of future project specific analysis. Suggested language adopted in Alternative D2 related to 4-week maximum duration of traffic stoppage.
Brisson	Brook	Trustees for Alaska	80131	299	We do recommend, however, that BLM and USFWS ensure any requirements for consultation or creation of reports of Indigenous Knowledge (e.g., ROP 23j, ROP 34a) take into consideration the cultural sensitivities, capacity, and resources of communities and governments to ensure people are not being overburdened or expected to share time and cultural knowledge without compensation. Explicit statements should be made alongside requirements for consultation and reports about the resources that will be provided to enable these mitigation requirements and how those resources will be provided. For example, a similar requirement to that of the AMP, where the lessee is required to pay FWS for necessary studies,(824) could be used to ensure sufficient resources, training, and technical support exist to enable the requirements for reports and consultation to be met. (824) DSEIS at 2-17.	Through the SEIS process, the agencies have and will continue to consult with appropriate Tribal organizations and individuals as required by policy and regulations.
Brisson	Brook	Trustees for Alaska	80131	300	While ROP 34 includes several beneficial additions to minimize aircraft impacts under Alternative D, there are two areas for improvement. First, specification of a minimum flight altitude of 2,000 feet above ground level should not just apply to some places or times but to the entire Coastal Plain at all times, in keeping with FAA guidance for Wildlife Refuges.(825) Second, the language of "will maintain an altitude of"(826) should be replaced with language to specify that this is a minimum threshold to ensure pilots do not infer that they have to fly at 2,000 feet but can fly higher. (825) FAA. 1984. (826) DSEIS at 2-67.	ROP 34.d states that operators would maintain an altitude of at least 2,000 feet above ground level, indicating that altitudes above 2,000 feet are acceptable.
Brisson	Brook	Trustees for Alaska	80131	302	Finally, the requirements described under Alternative D do not show any responsiveness to changes in caribou population. The scientific field of conservation biology has long been aware of the greater risks of extirpation faced by small populations.(830) However, there is no consideration of this increased risk in the protections of the draft SEIS. The caribou protections of Alternative D, strengthened as described above, should be used as a baseline for requirements to avoid impacts to caribou. If the herd size of the CAH or PCH decreases, however, additional restrictions should be added to reduce pressures on caribou at a time of increased vulnerability. (830) E.g., Stacey and Taper. 1992; Caughley. 1994; Newman and Pilson. 1997; Saccheri et al. 1998; Briskie and Mackintosh. 2004; Matthies et al. 2004.	The BLM and USFWS have designed ROPs 23 and 23.1, which include adaptive management of caribou, to account for this.
Brisson	Brook	Trustees for Alaska	80131	303	In determining the thresholds of these increased restrictions, it is important to remember that as a social and gregarious migrant that relies upon aggregations to reduce predation pressure and insect harassment, what counts as a "small population size" for caribou may be larger than that seen for other species. There also may be social and cultural consequences of reductions in population size that occur before genetic or behavioral consequences are observed. For example, reductions in population size may trigger corresponding reductions in allowable subsistence harvest by game management agencies. The Porcupine Caribou Management Board Harvest Management Plan recommends increased restrictions on harvest in Canada if the PCH population declines. (831) Similar restrictions are recommended by the Western Arctic Caribou Herd Working Group's Cooperative Management Plan in Alaska if the herd size of the Western Arctic Herd decreases. (832) There currently are proposals to greatly restrict subsistence harvest of caribou in response to persistent declines in the Western Arctic Herd. (833) This suggests one possible mechanism for increasing protections for caribou in a way that is responsive to needs both of the herds and of subsistence hunters. Protections for caribou as described under Alternative D and with the strengthening measures above may be able to be applied when the caribou herds are at their most liberal management level, with the fewest harvest restrictions. If herd sizes decrease, however, and the herd moves into more restrictive management levels, industrial activity should likewise be further restricted, such as involving more closures, larger buffers, less permitted activity, or denial and suspension of activities and leases. Such actions would increase the opportunity to avoid impacts to caribou and give the herds the best opportunity to rebound without further threatening population viability or subsistence harvest. (831) Porcupine Caribou Management Board. 2010. (832) Western Arctic Caribou Herd Working Group. 2019. (833) Western Arctic Caribou Herd Working Group. 2023.	The BLM and USFWS have designed ROPs 23 and 23.1, which include adaptive management of caribou, to account for this.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	331	Under Lease Stipulation 5 in Alternative D, BLM and FWS would prohibit permanent oil and gas structures from being within 1 mile of the small portion of potential denning habitat located from the coastline to 5 miles inland on the Canning River, Niguanak River, Katakturuk River, Marsh Creek, Carter Creek, and Sadlerochit River, and all associated tributaries.(919) Similarly, under Alternative D, BLM and USFWS would prohibit oil and gas activities within some, but not all, of that same small portion of the denning habitat from October 30 through April 30.(920) Unlike Alternative C (Alternative D in the 2020 final EIS), new Alternative D includes a roughly two-week extension of the timing limitation from April 15-30.(921) BLM and FWS should adopt this extension of the timing limitation in the ROD in order to account for later denning periods. (917) DSEIS vol. 2, Map 2-5, 2-6. (918) DSEIS vol. 2, Map 3-40 (919) See DSEIS at 2-14. (920) Id. (921) Id.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	332	Problematically, Lease Stipulation 5 includes the Canning River in its NSO provision, but not its timing limitation.(922) BLM and FWS provide no scientific basis to conclude that this portion of the suitable denning habitat is the only portion of the suitable denning habitat in the Coastal Plain that requires the protection conferred by Lease Stipulation 5. Nor do BLM and FWS explain why they opted to protect a one-mile buffer on either side of the Canning River via an NSO provision but did not apply the same timing limitation to this stretch of denning habitat. BLM and FWS also do not explain whether the agencies followed any scientifically sound approach to identifying areas within the suitable denning habitat that have a higher likelihood of den occurrence than other portions. This is particularly alarming given, as the map above demonstrates, the western hotspot is left vulnerable to seismic activities or other winter season oil and gas development with no timing restrictions to protect denning bears. Moreover, BLM and FWS failed to explain whether or how they have taken climate change impacts into account, and how such impacts may shift preferred denning locations in the future compared to historically observed preferences. As explained in the attached comments from Dr. Whiteman, NSO categorization allows extensive disturbance of denning polar bears by seismic exploration which could have potentially significant adverse impacts on denning polar bears and cubs and Lease Stipulation 5 does not sufficiently protect against these risks.(923) (922) Id. (923) Whiteman DSEIS Comments at 6-7.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	333	The final SEIS should protect the critical northwestern denning hotspot from leasing, or at a minimum from seismic exploration in a manner similar to the protections conferred under the timing limitation of Leasing Stipulation 5 for Alternatives C and D or explain why it was not feasible to do so.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	334	As demonstrated in the map below, the yellow core portion of the northwestern denning hotspot has a higher density of denning than any part of the protected central hotspot. As such, the core area of the northwestern hotspot - approximately 16,000 to 30,000 acres - should be made unavailable to leasing under Alternative D, at a minimum. To be consistent with the density of denning areas protected by Lease Stipulation 5's timing limitation, at least 43,000 to 73,000 acres in the northwestern hotspot should be submitted to that timing restriction.(924) (924) The Value Area amounts in this map are provided in acres.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	335	Even for leases that BLM and FWS describe in the draft SEIS as being "NSO," it is not clear whether the agencies would retain the authority post-leasing to permanently preclude activities on areas immediately adjacent to the NSO areas that would be required to access the oil and gas associated with the NSO areas. Moreover, BLM and FWS maintain the position from the prior EIS that it must allow "necessary" access across any portion of the Coastal Plain to enable oil and gas activities, even across NSO areas.(925) In short, it is not clear what BLM and FWS mean by "NSO" in this draft SEIS, and the agency should carefully explain whether it is retaining the authority to deny all development on the NSO lease permanently, or whether the "NSO" lease entails a right of access via adjacent areas, and therefore potential spill-over effects on the NSO areas themselves that BLM will not be able to entirely and permanently preclude after the leasing stage.(926) There is also no analysis of the reach of impacts from areas where surface oil and gas activities will be allowed. A proper analysis minimally would require mapping the areas where surface oil and gas activities will be allowed and then evaluating how much habitat falls within a buffer distance from those locations, where the buffer distance reflects some scientifically determined estimate of the distance required to ensure the habitat will be safe from various forms of harm resulting from those activities. Indeed, FWS has critiqued such an NSO approach and explained that NSO provisions are not sufficient because high density denning areas should be off-limits to all leasing and oil and gas activities.(927) (925) See e.g., DSEIS at 2-5 ("PL 115-97 requires that the BLM authorize ROWs for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or with a NSO stipulation."). (926) See supra Section IV.B.5 (describing limitations in agencies' NSO analysis). (927) Letter from Gregory Siekaniec, Regional Director - Alaska Region, to BLM Project Manager Coastal Plain Oil and Gas Leasing Program Environmental Impact Statement (Apr. 8, 2019).	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS. Additionally, Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	377	BLM and FWS fail to provide any science to indicate that a one-mile buffer will protect denning bears from foreseeable noise impacts, especially seismic testing, gravel mine blasting, and pile-driving. Also, the agencies provide no buffer for non-denning bears, despite evidence indicating strong aversion reactions of non-denning bears, especially females and cubs, to industrial noise. BLM and FWS must support its denning buffer with science and establish ROPs for non-denning bears designed to reduce the extreme energetic stress that industrial sources of noise are known to cause polar bears.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Brisson	Brook	Trustees for Alaska	80131	378	Furthermore, with regard to the effectiveness of its stipulations and ROPs, BLM and FWS totally ignored the question that the scope of discretion retained under the terms of the lease may affect how it applies mitigation in the future. It is vitally important for the draft SEIS to consider what mitigation measures may be waived, and whether BLM is retaining the authority to permanently and completely preclude surface disturbing activities if necessary to protect polar bears and their habitat, or whether BLM is merely retaining the authority to impose conditions to reduce impacts. Unless the lease terms do the former, BLM ostensibly would be giving away a critical component of its discretion - and the ability to protect polar bears from injury and disturbance - at the leasing stage. The draft SEIS, and the ESA consultation that is being reinitiated, must consider BLM's continued representations regarding its own inability to preclude "necessary" access to oil and gas under the Tax Act.	Subjective language allows for flexibility in management actions. This flexibility allows for adaptive management that reflects changing on-the-ground conditions at the time of site specific project analysis. Appendix E of the SEIS outlines other potentially applicable laws and regulations that will be considered during future project specific analysis.
Brisson	Brook	Trustees for Alaska	80131	405	In addition, several subsistence impacts in the draft SEIS are not addressed by mitigation measures despite appearing to lend themselves to straightforward timing limitations. For example, the agencies note that spring geese hunting could be affected if ice road or seismic activity continues into May.(1124) Notably, ROP 37 - "Avoiding Conflicts Between Subsistence Activities and Seismic Exploration" - contains no timing limitation. Other ROPs specifically contemplate seismic activity in May.(1125) The agencies should adopt a ROP that would prohibit seismic activities in the spring that could affect geese hunting. (1124) DSEIS at 3-312. (1125) Id. at 2-11 ("[S]eismic exploration, and testing, are not allowed on the major nearshore marine waters, lagoons, barrier islands, and coastal islands between May 15 and November 1.").	Past data shows the majority of waterfowl hunting for geese occurs later than snow conditions would likely allow for ice roads. The any proposal for ice road construction or seismic activity would require a site specific NEPA analysis where the proponent would be required to provide a plan for any ice road construction or seismic activity. Further, LS 9 provides additional mitigation for impact to fish and wildlife, including waterfowl.
Brisson	Brook	Trustees for Alaska	80131	406	We also note that Lease Stipulation 1 establishes a river set back of 1 mile for the Okpilak River under Alternative B but reduces the setback to just .5 miles for Alternative D.(1126) This is concerning because the Okpilak River is an important subsistence river. The final SEIS should revise the setback for this river under Alternative D to be at least 1 mile or larger to protect subsistence resources and users. (1126) Id. at 2-8.	Alternative B setbacks are from the rivers' Ordinary High Water Marks, while Alternative D setbacks are from the rivers' Active Floodplains, which are different measurements.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	407	Moreover, mitigation measures which are specifically targeted to address impacts to subsistence users fall far short of avoiding and minimizing impacts to affected communities. ROP 36 requires operators to "provide opportunities for subsistence users to participate in planning and decision-making" by working "directly with affected subsistence communities."(1127) But the ROP provides no guidance regarding how to determine which communities may be affected by proposed development or exploration. Without guidance, operators may underestimate the scope of impacts likely to result from their activities and proceed without the input of all impacted communities. ROP 39 requires operators to develop a subsistence access plan prior to exploration or development but only in consultation with Kaktovik.(1128) The agencies should expand this coordination and consultation opportunities beyond Kaktovik in light of the abundant evidence that Gwich'in subsistence users will be significantly impacted from oil and gas leasing on the Coastal Plain. (1127) Id. at 2-69. (1128) Id. at 2-74.	The Native Village of Kaktovik was the only community found to be negatively impacted in terms of subsistence by the ANILCA 810 analysis.
Brisson	Brook	Trustees for Alaska	80131	408	We also note that ROP 36 contains no clear mechanism for actually reducing impacts to subsistence activities. There is no provision that allows a local community to prevent any oil and gas activity from moving forward if there would be significant impacts on subsistence use - rather, the community would merely be informed ahead of time. Without providing for a substantive role in the decision, such measures are essentially meaningless. Moreover, subsection (c) requires that applicants prepare a plan to describe how they will avoid subsistence impacts and submit that plan to BLM. For such a plan to have any value, it must be shared with potentially affected communities to determine whether the plan would effectively avoid unreasonable conflicts with subsistence and allow the community to provide input on the proposed plan. Finally, we note that several of the "requirements" of this ROP are existing legal mandates that should not be considered mitigation measures. This includes the requirement for government-to-government consultation in subsection (b) and the requirement for barge operators to avoid unmitigable adverse impacts, as determined by NMFS, on the availability of marine mammals to subsistence hunters in subsection (c)(vi).	Multiple LS/ROPs have been updated to include consideration of subsistence impacts and coordination with subsistence users prior to authorization of site specific oil and gas development activities.
Brisson	Brook	Trustees for Alaska	80131	473	While the draft SEIS tries to point to the lease stipulations and required operating procedures (ROPs) as means to protect the WSR designations of the rivers, Groups are concerned that the lease stipulations and ROPs fall short. Lease Stipulation 1 in the draft SEIS, under all alternatives, allows for "[e]ssential pipelines and road crossings . . . through setback areas in accordance with Section 20001(c)(2) of PL 115-97." Gravel mines "could be permitted in setback areas," for the Hulahula, Canning, Okpilak, and Jago Rivers.(1284) Gravel mining cannot be legally allowed in the Refuge.(1285) Lease Stipulation 1 goes on to allow exceptions to the setback requirements, provided that the operator can demonstrate that "(1) there are no practicable alternatives to locating facilities in these areas; (2) the proposed actions would maintain or enhance resource functions; and (3) permanent facilities are designed to withstand a 100-year flood."(1286) Allowing development pipelines and roads across any of these rivers is inconsistent with protecting any ORV.(1287) (1284) Id. at 2-7. (1285) See supra Section VI.E; 16 U.S.C. § 3142(j). (1286) DSEIS at 2-7 to 2-8. (1287) 16 U.S.C. § 1273(b)(1).	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed.
Brisson	Brook	Trustees for Alaska	80131	474	ROP 35 is meant to "[e]nsure ongoing and long-term reclamation of land to its previous condition and use" and describes leaseholder requirements for abandonment of "[o]il and gas infrastructure - including gravel pads, roads, airstrips, wells and production facilities."(1288) Reclamation is totally unproven in the Arctic, so relying on ROP 35 to protect these rivers is at best questionable and likely fallacious.(1289) ROP 35 also references restoring Wild and Scenic River eligibility upon abandonment.(1290) While that is important, it is also troubling since that eligibility should not have been compromised in the first place. (1288) DSEIS at 2-67 to 2-68. (1289) See supra Section IV.B.5. (1290) DSEIS at 2-26 to 2-68.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed.
Brown	Kay	Pacific Environment	65352	1	Because the 2017 Section 20001(c)(1) of PL 115-97 did not override any of the laws that protect the coastal plain, it is imperative that the SEIS take into consideration ALL aspects of potential impacts to lands, water, wildlife, communities and climate from a leasing program in this sacred area. Although the draft SEIS has made some improvements to protect the Arctic Refuge, it is not enough. The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, which the Gwich'in Nation relies on for cultural survival and food security. The coastal plain is a sacred place to the Gwich'in Nation, and the SEIS does not acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program. It must also adopt measures to protect those values of the Arctic Refuge, both now and into the future. We urge the Biden administration to fully consider public comments and adopt strong measures to prevent impacts on subsistence for local communities, fragmenting of the calving grounds of the Porcupine caribou herd, and adverse effects on threatened polar bears from oil and gas activities.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Byrne	Charles	-	22694	1	While I thank the Biden administration for canceling the existing leases in the Arctic Refuge, I oppose all oil and gas drilling in the Arctic Refuge. Oil leasing and development would destroy the wild quality of the coastal plain and adjacent Wilderness lands in the Arctic Refuge. The Draft SEIS fails to truthfully explain what would be lost by opening the Arctic Refuge to oil leasing and development. Further, 'no surface occupancy' ('NSO') stipulations are broad and undefined, and there are loopholes that would allow for infrastructure and development. NSO stipulations should be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Cecere	Doug	-	22126	6	The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Cecere	Doug	-	22126	4	Even under the most protective alternative put forth, "no surface occupancy" (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Corcoran	JC	-	22531	2	Even under the most protective alternative proposed, known as "no surface occupancy" (NSO), the stipulations are too broad and undefined. There appear to be loopholes that could permit infrastructure and development. If NSO stipulations are intended to provide genuine protections for leased tracts, they need to be clearly defined and non-negotiable within the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Cotter	Justina	-	41121	2	Loopholes in the "no surface occupancy" (NSO) -- the most protective alternative put forth -- would allow for infrastructure and development due to broad and undefined stipulations. If these stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Crampton	Susan M	-	39489	1	The Draft SEIS needs to better include and address polar bear and caribou habitats and survival needs, as well as cultural and food security impacts to Gwich'in Nation. I've heard about and have concerns about other loopholes in the "no surface occupancy" guidelines for "leased tracts" and will leave that to those better informed than I to require change and better specification.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
dey	amanda	-	18050	1	It would be reasonable to analyze the need for new/continued oil drilling in the arctic given: 1) existing/new wells in the lower 48, 2) emission reduction targets (do we really need new arctic oil wells?), 3) ecological reasons described above.	With the passage of the 2017 Tax Act, Section 20001 of PL-115-97 Congress mandated the Secretary of the Interior, acting through the BLM, to establish and administer an oil and gas program for the leasing, development, production, and transportation of oil and gas in and from the Coastal Plain area within the Arctic Refuge.
Dieterich	Michele	-	75722	5	Please abandon this plan and create an alternative that fully protects the entire 19.2 million acre Wildlife Refuge as Wilderness with no loopholes or grandfathered oil and gas leasing.	With the passage of the 2017 Tax Act, Section 20001 of PL-115-97 Congress mandated Secretary of the Interior, acting through the BLM, to establish and administer an oil and gas program for the leasing, development, production, and transportation of oil and gas in and from the Coastal Plain area within the Arctic Refuge.
Dieterich	Michele	-	75722	3	The least intrusive alternative offers supposed protections, but it is worded in such a way to allow for broad interpretation. It does not specifically and firmly restrict surface occupancy. It does not really define what they mean in this alternative. These protections must be better defined and non-negotiable.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Family	Susang-Talamo	-	23235	2	Even under the most protective alternative put forth, “no surface occupancy” (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Fitch	K	-	29817	3	4. Even under the most protective alternative put forth, “no surface occupancy” (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Flanagan	Taylor	-	80320	2	Though Alternate D offers the least area of land for sale and purports to be the environmental option, its land allocation slightly skews towards land near allotments. Alternate D offers 5,800 acres for lease sale within three miles of allotments, while Alternate C only offers 4,100 acres.(10) Using the SEIS's own reasoning, it is likely then that Alternate D will have further impacts on subsistence land use than Alternate C. Thus, Alternate D's potentially leased land near allotments should be reduced to at least match that of Alternate C.	The alternatives vary with respect to the acreage of Native allotments that may be affected. The alternatives were developed by subject matter experts from both the BLM and USFWS to meet the objective of balancing the five purposes of the refuge.
Flanagan	Taylor	-	80320	5	The proposed SEIS does mention that restrictions and setbacks will help to minimize damage to unidentified sites by protecting areas that are most likely to contain sites, such as along waterways.(21) These restrictions still leave vast areas of land available for development, even in the strictest case of Alternate D. Furthermore, Alternate D's plan actually includes at least one setback that is shorter than the lease terms in Alternate B, along the Okpilak River.(22) This decision is arbitrary and allows for more unidentified sites to be adversely impacted than the less strict alternatives. (19) SEIS, 3-286. (20) SEIS, 3-286. (21) SEIS, 3-287. (22) SEIS, 3-323.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed. Additionally, Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Fleischman	Penny	-	10506	1	Please develop an alternative that maximally protects the coastal plain from future oil leasing. As you may know, this area is a vital calving grounds for the Porcupine caribou herd and a sacred place for the Gwich'in people who have relied on the herd for millennia. It is also an area vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will exacerbate these stresses, cause irreparable harm to this irreplaceable region, and to the millions of birds and other animals that migrate there every summer from around the world. Increased oil leading would also undermine the urgent action needed to address the climate crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Flint	Alison	The Wilderness Society	80125	1	As our comments and others' show, a fulsome review based on science, traditional Indigenous knowledge, and robust public engagement and tribal consultation demonstrates that oil and gas activities on the Coastal Plain will have unavoidable and un-mitigable destructive impacts on Refuge resources and on the climate, contrary to Refuge purposes and other laws. Thus, the agencies must develop and select a highly protective alternative that limits development to the maximum extent. Simultaneously, we call on the Department of the Interior to support efforts to repeal the leasing program mandate and restore full protections for the Coastal Plain.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Flint	Alison	The Wilderness Society	80125	5	Key Elements of Indigenous-Centered Imago Alternative: 1. Minimizing the acreage available for leasing; limiting seismic and other exploration activities to leased areas; and including stringent, non-waivable stipulations for resource protection, developed through government-to-government consultation and incorporating traditional Indigenous knowledge. The DSEIS fails to include a minimum 400,000-acre alternative, an alternative that would limit seismic to areas that are actually leased (as opposed to available for leasing), and an alternative with non-waivable stipulations for resource protection. While we appreciate that Alternative D was developed in part through government-to-government consultation and incorporation of traditional Indigenous knowledge, it still fails to adequately protect Coastal Plain resources or the lifeways of Alaska Native communities, as described throughout these comments, as well as the technical comments submitted by Trustees for Alaska, TWS, and other groups.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Flint	Alison	The Wilderness Society	80125	6	2. Deferring leasing, lease implementation, and/or any permitting of exploration or other development activities, until the following conditions are fully considered and explored: a. A formal apology by the President of the United States to Indigenous Peoples of the Arctic (Iñupiat and Gwich'in) for historical injustices and a commitment to ongoing dialogue and action aimed at healing and reconciliation; b. Co-creation of a plan for future shared stewardship, shared land ownership, and co-management of the Arctic National Wildlife Refuge - and the entire Arctic landscape - that centers the Indigenous worldview and the interconnected and sentient rights of the lands, waters, wildlife, and Indigenous peoples and fully restores Indigenous hunting and fishing subsistence rights; c. Free, prior, and informed consent by Indigenous peoples (community members) of the affected area or adjacent to the affected area, based on meaningful government-to-government consultation with Federally recognized Tribes (not corporations), to proceed with any federal decision-making impacting the Arctic National Wildlife Refuge; d. Completion of a full Class III inventory of cultural resources under the National Historic Preservation Act and listing of the Coastal Plain as a Traditional Cultural Landscape on the National Register of Historic Places; e. A showing that all climate impacts - including cumulative impacts - associated with development can be fully eliminated, establishment of a climate mitigation bank for the Coastal Plain, and meaningful federal investment in a just transition for Alaska Native communities to a clean energy economy (including a community conservation impact fund to support alternative energy projects); f. A full accounting of the intergenerational social, cultural, and health costs of fossil fuel development on Arctic Indigenous communities (including nexus to historical trauma), accompanied by a jointly developed plan and federal funding to begin to remedy those costs; g. Reconstitution of the International Porcupine Caribou Board (or an Alaska-based/U.S. equivalent), comprised of at least 50% Indigenous members, including youth, who utilize and live in proximity to the Porcupine Caribou Herd and are committed to the Board's mission of protecting and maintaining the Herd's habitat, and development and adoption of a plan based on Western science and traditional Indigenous knowledge for eliminating impacts to the Herd associated with oil development; and h. Formal recognition and reconciliation of ANCSA land and resource claims and settlements - and associated stranded Alaska Native Corporation asSEIS - frustrated by the designation of the Arctic National Wildlife Refuge.	With the passage of the 2017 Tax Act, Section 20001 of PL-115-97 Congress mandated Secretary of the Interior, acting through the BLM, to establish and administer an oil and gas program and hold two lease sales prior to December 22, 2024. Therefore the decision to defer leasing and implementation is non-discretionary as described in Section 2.4.2. While the requested items are outside the scope of this SEIS decision, the BLM/USFWS recognize the need for continued coordination and consultation on topics of cultural importance. Additionally, the leasing stipulations and ROPs reflect the need for this continued and meaningful coordination specific to the oil and gas program.
Flint	Alison	The Wilderness Society	80125	6	Beyond misinterpreting and rejecting any proposed alternative related to delayed leasing or development,(11) the draft SEIS fails to address any of these elements. The final SEIS should include them in the range of alternatives. At a minimum, the agencies are required under NEPA to provide a rationale for why they have been eliminated from detailed analysis. Any such explanation should include how the agencies intend to preserve space for meaningful future Indigenous co-stewardship of the Coastal Plain.	With the passage of the 2017 Tax Act, Section 20001 of PL-115-97 Congress mandated Secretary of the Interior, acting through the BLM, to establish and administer an oil and gas program and hold two lease sales prior to December 22, 2024. Therefore, the decision to defer leasing and implementation is non-discretionary as described in Section 2.4.2.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Flint	Alison	The Wilderness Society	80125	7	In addition to its failure to incorporate key elements of the Indigenous-centered proposed alternative described above, the draft SEIS alternatives and analysis fall short of fully addressing and minimizing the suite of adverse cultural, historical, ecological, spiritual, and other impacts from oil and gas development on Indigenous Peoples, as described throughout our technical comments. Overall, the final SEIS must fully acknowledge and address historical and ongoing injustices and articulate meaningful support for Indigenous land stewardship. For instance, neither the original designation of the Arctic National Wildlife Range nor ANILCA's designation of today's Arctic National Wildlife Refuge benefited from consultation with or free, prior, and informed consent by the Indigenous Peoples living in and near the area - many of whom still suffer historical trauma directly related to the involuntary taking of their traditional and ancestral homelands. While significant strides have been made in tribal consultation since that time, we urge the agencies to conduct more meaningful and robust consultation that includes consideration of new forms of land protection and co-management through an Indigenous lens and that would benefit Indigenous communities and values, as well as the Federal government's conservation and land management obligations.	The Final SEIS range of alternatives has been updated based on public input requesting protection for key resources and new updated information. The BLM/USFWS recognize the need for continued coordination and consultation on topics of cultural importance. Additionally, the leasing stipulations and ROPs reflect the need for this continued and meaningful coordination specific to the oil and gas program.
Flint	Alison	The Wilderness Society	80125	3	Integrating the Imago Initiative into the Range of Alternatives The Imago Initiative is a transformative movement launched by TWS in 2019.(9) Recognizing the integral relationship between the indomitable Arctic landscape and its Indigenous communities, the initiative seeks to envision pathways for Indigenous-led protection and management of these ancient ancestral Indigenous homelands. The initiative brings together the Iñupiat and Gwich'in peoples, sparking dialogues and fostering trust. Through this ground-breaking endeavor, we aim to protect the Arctic Refuge and heal historical wounds inflicted by the dispossession of land and culture and the rapid implementation of termination laws and policies. Imago is vital in leading a paradigm shift and symbolizes a new approach to land protection and management designations that is grounded in Indigenous leadership and engagement. It strives to decouple local economies from the dependence on fossil fuels, fostering sustainable rural economies that harmoniously coexist with one of the Earth's last sizable intact landscapes. The Imago Initiative is constructed by a group of people who collaboratively understand the Arctic landscape's complexities, its vibrant Indigenous cultures, its role in climate regulation, and the deep-seated interconnectedness of its land, waters, and jet streams. The Imago Initiative is a movement for change, providing a platform for Indigenous Peoples to express their voices, promote their ideas, and take action to protect the landscapes they depend upon. In conceptualizing and implementing Imago, TWS has remained committed to advancing the sovereignty of Indigenous Peoples in Alaska, while defending existing conservation successes. The initiative is not just about protection, but about fostering a just transition from a fossil-fuel-based economy to sustainable rural development. This transformative shift hopes to culminate in new Indigenous-led strategies that support Indigenous management, access, guardianship/stewardship, and ownership of the land in perpetuity. The Imago Initiative, in practice, takes on a transformative and holistic Indigenous approach to community healing, individual growth, and reconnection to the Nuna (land). Central to the initiative are four key components: a task force, on-the-land place-based dialogues, movement building, and informing law and policy. (9) See https://www.wilderness.org/key-issues/wildlands-everyone/imago-initiative . (10) See Sovereign Iñupiat for a Living Arctic, Proposed Indigenous-Centered Alternative for Supplemental Environmental Impact Statement for the Coastal Plain Oil and Gas Leasing Program (Oct. 4, 2021).	The agencies have noted this encouragement.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Flint	Alison	The Wilderness Society	80125	4	The Imago Task Force represents a collaborative team of diverse community members, ranging from elders to youth, from the local Indigenous groups living in or adjacent to the Arctic Refuge, conservationists, and law and policymakers that come together to engage in problem-solving and decision-making at both the grassroots level and up to the policy enactment level. The task force's role is to identify local issues, develop tailored solutions, and implement these actions effectively. The place-based dialogues are immersive experiences designed to reconnect individuals with the Nuna and create new connections with the cohort they are attending with to foster a profound sense of belonging. Conducted in the Arctic Refuge, these dialogues are framed using Indigenous facilitation methodologies to hold ceremony and a safe space for open conversations and stimulate the sharing of wisdom, cultural practices, and personal narratives, promoting collective healing and the beginning of trust bond relationships. Movement building focuses on creating a sustainable wave of positive change that resonates beyond the individual and permeates the entire nation. This involves empowering individuals to become change agents, facilitating community workshops to share knowledge and tools, and mobilizing collective efforts to build a healthier, stronger community. Through these combined efforts, the Imago Initiative cultivates an environment of understanding, acceptance, and growth, guiding the path toward a sustainable, healthy future. The SEIS must consider and leave space for Imago and Indigenous-led conservation goals, recognizing the spiritual, physical, cultural, and historical connection of Alaska Native peoples to the land, wildlife, and waters that have sustained their ways of life since time immemorial. Imago is a critical vehicle for honoring and realizing that connection through meaningful and mutually beneficial co-stewardship of the land, waters, and wildlife. Integrating Imago into the SEIS process is challenging, however, because it brings two different worldviews into the same space, using words that may be the same, but have substantively different meanings. For instance, to have this discourse it is imperative to understand that for Indigenous Peoples, all matter in the physical reality is animate and deserves honor and respect as sentient nations. However, in the Western context, resources are shifted to items that are monetized in value and measured for control. In the context of the SEIS, the term "resources" can be broadly categorized into two distinct types. The first is the "mineral resources" that would be extracted through oil and gas development, which are considered ancient ancestral relatives. Mineral resources refer to naturally occurring substances that can be extracted and utilized for economic benefit. These include petroleum, natural gas, coal, and various types of metal ores. The extraction of these resources often involves destructive practices like mining and drilling, which can lead to environmental degradation and impact the livelihoods of local communities. The second is the actively living relatives, or "natural resources," which Indigenous communities traditionally and in modernity regard as close relatives. These relatives are not just utilized, but also revered, and encompass all elements of the natural environment, including land, water, plants, and animals. These resources are living entities that hold intrinsic spiritual and cultural value to Indigenous communities. They are deeply intertwined with their identity, way of life, and survival. Therefore, any disruption or degradation of these resources, due to external activities such as mineral extraction, can have profound sociocultural impacts. It is crucial to recognize and respect these differing perspectives on resources to ensure equitable and sustainable development that honors both economic needs and cultural values. Overall, the Imago Initiative embodies this holistic approach to resource management, recognizing and valuing all resources as vital components of a healthy and thriving community. To address the need for the SEIS to consider and leave space for Imago, the Imago Task Force supported the development of a proposed Indigenous-centered alternative that was submitted at scoping by task force member Sovereign Iñupiat for a Living Arctic.(10) The proposed alternative properly recognizes and accounts for past Indigenous land ownership, past and current Indigenous land stewardship, and historical and present injustices towards Indigenous peoples. It does so by fully incorporating and creating space for traditional Indigenous knowledge, Indigenous worldviews, and future shared stewardship by Indigenous peoples - all fundamental concepts identified by the Imago Task Force and during place-based dialogues with Gwich'in and Iñupiat Elders and individuals. TWS endorsed this alternative in our scoping comments. Unfortunately, the draft SEIS alternatives fail to include most of the key elements of the proposed alternative, which are repeated below - and therefore fail to fully honor the traditional knowledge, practices, and ways of life of the Alaska Native communities who have lived in relationship with the lands and waters that now comprise the Arctic National Wildlife Refuge for millennia, or adequately preserve space for future Indigenous-led conservation and co-stewardship of the Arctic Refuge Coastal Plain.	The agencies have noted this encouragement.
Fox	Laurence	CPAWS Yukon	80122	2	We appreciate that this EIS offers two alternatives, C and D, where estimated total surface disturbance would be less than 2,000 acres. At the same time, the number of acres available for sale under Alternative D is nearly double the minimum sale offering of 400,000 acres required under the Tax Act. It would have been helpful-and, arguably, in the best interest of the SEIS- to include an alternative in which the absolute minimum of acreage legally required is considered. The gulf between 765,000 acres and 400,000 acres provides ample room to trim key wildlife habitats from the lease sale (for example, see our recommendations 2 and 3), while still meeting the five statutory purposes of the refuge. We urge the BLM to include this option in the final SEIS.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Fox	Laurence	CPAWS Yukon	80122	1	3. The objective of Leasing Stipulation 6 for Alternatives B and C is to "minimize disturbance and hindrance of caribou or alteration of caribou movements." In contrast, the objective for Alternative D is much more extensive and protective of the Porcupine caribou herd, and includes the goal of "minimiz(ing) disturbance and hindrance of caribou to allow for unhindered movement and use by caribou within the 1002 Area, particularly during the sensitive calving, post-calving, and insect relief periods, and maintain caribou access to summer habitats, including calving and post-calving, (and to) avoid disrupting or breaking up caribou aggregations during calving, post-calving and insect-relief periods." By failing to consider caribou use of habitat, and focusing solely on caribou movement, Alternatives B and C do not adequately address long-term risk to caribou and their habitat. This is of particular concern within the calving grounds of the 1002 region, as a recent study of the Central Arctic caribou herd-a neighboring barren-ground herd impacted by oil and gas developments from the Prudhoe Bay and Kuparuk projects- has shown that barren-ground caribou are especially sensitive to human and industrial disturbances, including roads, during their calving and post-calving periods(5). 4. The SEIS states the alternatives "include lease stipulations and Required Operating Procedures (ROPs) designed to mitigate impacts on resources and their uses." This statement is highly overconfident, as many mitigations are not supported by evidence showing that they will in fact reduce impacts. For example, Required Operating Procedure 23 describes mitigations to minimize impacts to the Porcupine caribou herd. But most of these measures are speculative and unproven. It's not certain how massive super groups of Porcupine caribou will navigate or be deterred by oil and gas infrastructure, or what design parameters could avoid the corralling of caribou. Alternative D relies less heavily on the unproven efficacy of Required Operating Procedure 23 than Alternatives B and C, as it includes stronger lease stipulations that avoid bringing caribou into contact with development in the first place. These stipulations include a greater number of acres covered by no leasing, no surface occupancy, and timing limitations. (4) Severson, J.P., Johnson, H.E., Arthur, S.M., Leacock, W.B., & Suito, M.J. (2021). Spring phenology drives range shifts in a migratory Arctic ungulate with key implications for the future. Global Change Biology, 27(19), 4546-4563. (5) Prichard, A.K., Lawhead, B.E., Lenart, E.A., & Welch, J.H. (2020). Caribou distribution and movements in a northern Alaska Oilfield. The Journal of Wildlife Management, 84(8), 1483-1499.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Fox	Laurence	CPAWS Yukon	80122	3	The Leasing SEIS defines primary calving(7) and post-calving(8) habitat for the Porcupine caribou herd based on areas occupied for more than 40 percent of years surveyed. We could not locate a justification in the document for using the 40 percent cut off over 30 or even 20 percent, which would more accurately account for natural variability in caribou habitat selection, and better accommodate the herd's habitat needs as the climate shifts. The Leasing SEIS acknowledges but does not reckon with the reality that, "some additional displacement would occur for individual caribou calving west of the high-use Porcupine caribou herd calving area and in some years when high density calving occurs in areas to the west that have been used less than 40 percent of years.(9)" Providing fewer protections for areas where calving occurs outside of this (apparently arbitrary) 40 percent cut off reduces flexibility for calving cows, who choose their locations in response to snow cover and forage availability. Using this higher cut-off excludes areas that may be used less frequently for calving and post-calving but are nonetheless critical areas for years they are used, and not including them will ultimately negatively impact calf and cow mortality and herd resilience. (6) BLM (2023). Coastal Plain Oil and Gas Leasing Program Draft Supplemental Environmental Impact Statement. See page 2-4. (7) BLM (2023). Coastal Plain Oil and Gas Leasing Program Draft Supplemental Environmental Impact Statement. See page 2-18 (8) BLM (2023). Coastal Plain Oil and Gas Leasing Program Draft Supplemental Environmental Impact Statement. See page 2-20 (9) BLM (2023). Coastal Plain Oil and Gas Leasing Program Draft Supplemental Environmental Impact Statement. Appendix E. See page E-11 In the Final SEIS, we urge the BLM to present and discuss how lowering the yearly use cutoff would impact the boundaries of the primary calving and post-calving areas, and to examine how this change would impact risk of disturbance to the herd during these critical life stages. Specifically, the Final SEIS should expand Table E-1, "Lease Restrictions in High-Use Porcupine Caribou Herd Calving Area" to include the number of acres of primary calving and post-calving areas (or comprehensive calving and post-calving areas in terms of Alternative D) that would covered by the various lease stipulations under each alternative using areas occupied 30 percent, 20 percent and 10 percent of years for calving and post-calving.	The use of 40 percent was based on currently available science to focus the analysis; however, it was recognized that circumstances may change over time (See Section 3.3.4). See ROP 23 and 23.1 which outlines the requirements/standards for minimizing disruption to caribou movement and subsistence use including use of adaptive management plan monitoring and research into the future that reflects changing on-the-ground conditions at the time of site specific project analysis.

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Fox	Laurence	CPAWS Yukon	80122	5	Resource extraction, including oil and gas activities, have impacts that reach far beyond the established "borders" of no leasing and no surface occupancy zones. Secondary impacts from development such as far-reaching sound and seismic disturbances, unfamiliar scents, and increased human presence have well-documented consequences for a variety of wildlife. Many of these impacts change wildlife behavior, leading to wildlife avoiding disturbed or human-occupied areas, increasing their energy expenditure, and spending less time eating and foraging. It can also lead to the habituation of predator species, such as bears, to humans, which can lead to increased human-wildlife conflicts. Buffer areas around important habitats help minimize these impacts. Not only do these disturbances have the potential to impact areas that are supposedly "off-limits" to development or subject to no surface occupancy restrictions, they can alter wildlife behavior even after the life of a project, long after the initial disturbance has terminated. A study on the historical range of the Forty-Mile caribou herd, another barren-ground herd Canada jointly shares with Alaska, found the range and migration habits of the herd were altered due to mining activities starting in the 1800s on the Yukon side of their range(10). The herd suffered a near-catastrophic population decline from the 1930s through the 1970s. This herd has never recovered its pre-crash numbers, nor has it returned to many areas it used to frequent on the Yukon-side of the border. More recent work posits these historical disturbances, along with climate change and current mining activities, may well mean the herd will never return to its historical range.(11) This is a prime-and highly relevant-example of how resource extraction and development can have unexpected and sometimes permanent consequences, especially when they occur in tandem with additional pressures such as subsistence harvest and environmental changes, both of which the Porcupine caribou herd are subject to. While CPAWS Yukon welcomes the greater restrictions and protections for the herd offered by Alternative D, this alternative, nor any of the other alternatives, does not incorporate buffers from development and thus does not offer as much protection through lease stipulations as it may first appear to. 10 McDonald, J. (1991). Revised by Cooly, D. (1997 & 2004). The historical annual range use patterns of the Fortymile caribou herd in Yukon." Government of Yukon. 11 Fox, L. (2022). New insights into Fortymile caribou herd a source of both hope and controversy. The Arctic Research Foundation. Under the Leasing SEIS, industry activity can occur right up to the border of primary and comprehensive calving and post-calving areas. This ignores industry's zone of influence on caribou, which is referenced in the Leasing SEIS as 2.49 to 3.11 miles(12). Although this zone of influence is derived from data on the Central Arctic herd, the Porcupine caribou herd is likely more sensitive to development, and the zone of influence could be much larger. At the very least, the herd's comprehensive calving and post-calving areas should be buffered from industrial development by 3.11 miles. The notion in the Leasing SEIS that caribou may become habituated to oil and gas activity over time, becoming tolerant of or less impacted by it, is refuted by the Johnson et al study from 2020. The study investigated the response of the Central Arctic herd to oil and gas disturbance and found that female caribou avoided infrastructure during all time periods. Caribou reduced their use of habitat within 5 km of development during the calving period, within 2 km during the post-calving period, and within 1 km during the mosquito harassment period, despite the long-term presence of energy development within the Central Arctic herd summer range. The study states "these findings corroborate a growing body of evidence suggesting that habituation to industrial development in caribou in the Arctic is likely to be weak or absent, and emphasizes the value of minimizing the footprint of infrastructure within important seasonal habitat to reduce behavioral effects to barren-ground caribou."(13) Additionally, Johnson points out that over a 30 year period, zero habituation was seen, which implies the potential impacts of disturbance are much greater than the SEIS suggests and accounts for. Similarly, buffer areas to reduce the impacts of disturbances such as noise, air traffic and seismic activity need to be applied around polar bear habitat. Human disturbances greatly impact polar bears, especially denning mothers and their offspring. Mothers may abandon dens before their young can survive the rigors of the Arctic winter(14). A study by Wilson and Durner (2020) directly investigates seismic survey design and effects on maternal polar bear dens(15). Their study suggests sufficient planning and effective mitigation measures for seismic surveys can minimize impacts to denning polar bears. However, it acknowledges that "the actual distances maternal denning polar bears respond to disturbance from seismic activity and the magnitude of their response are variable and not well-understood."(16) (12) BLM (2023). Coastal Plain Oil and Gas Leasing Program Draft Supplemental Environmental Impact Statement. See page 3-208. (13) Johnson, H.E., Golden, T.S., Adams, L.G., Gustine, D.D., & Lenart, E.A. (2020). Caribou use of habitat near energy development in Arctic Alaska. The Journal of Wildlife Management, 84(3), 40-.412. (14) Durber, G. M., Amstrup, S. C., & Ambrosius, K. J. (2006). Polar bear maternal den habitat in the Arctic Wildlife Refuge, Alaska. Arctic Institute ofNorth America, 59(1), 31-36. (15) Wilson, R.R., & Durner, G. M. (2020). Seismic survey design and effects on maternal polar bear dens. The Journal of Wildlife Management, 84(2), 201-212. (16) See page 209, Wilson, R.R. & Durner, G. M. (2020). Seismic survey design and effects on maternal polar bear dens. The Journal of Wildlife Management, 84(2), 201-212. In this study, a 1.6 km buffer was used around detected dens. Whether stimuli, such as noise or vibrations at this distance, leads to abandonment or pre-mature emergence is unknown. In order to plan for these unknowns of impact distance of seismic activity, it is important to be over-cautious with buffer distance from denning sites. For an internationally threatened species, extreme precautions need to be taken to ensure the species is able to successfully rear their young and provide for their next generation. Maximizing the buffer area around their denning habitat and greater ecosystem area is essential to minimizing potential for disturbance. Additionally, Alternative D-and the SEIS as a whole-does not fully consider the negative impacts of oil and gas development on migration and nesting birds, which is a serious oversight considering the over 200 hundred bird species found on the Coastal Plains. For example, a study that looked at human disturbance effects on bird flight initiation distances by Livezey et al. emphasized that "estimating distances at which human activities adversely affect species of concern and delineating buffer areas to protect them require staff of federal and state agencies to justify precise distances	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Fox (cont.)	Laurence (cont.)	CPAWS Yukon (cont.)	80122 (cont.)	5 (cont.)	(e.g., 50 m vs. 55 m). These are not abstract exercises-they directly determine how, when, and where these activities are permitted."(17) Additionally, a 2023 study(18) analyzing 17 years of migratory bird nesting behavior in the Prudhoe Bay oil fields found several vulnerable bird species experienced significantly decreased nest survival rates near high-use oil and gas infrastructure and its related disturbances, including traffic, dust, pollution, and noise. This indicates not only that mitigation measures for the Prudhoe Bay project failed to properly predict the real-world impacts of oil and gas development on birds and were therefore ineffective, but that oil and gas development did impact nesting birds in Prudhoe Bay beyond what was expected. Given that both Prudhoe Bay and the Arctic Refuge are both coastal high-Arctic environments vital to numerous species of migrating birds- and that the 1002 area is arguably even more ecologically more sensitive than Prudhoe Bay-it can reasonably be assumed that oil and gas infrastructure will have similar impacts on nest survival rates within the Coastal Plains. Extra care and consideration around mitigation in this SEIS is therefore required. We argue that, given the data presented, buffer zones should be the rule of thumb when considering the impact of development on birds. (17) Livezey, K. B., Fernandez-Juricic, E., & Blumstein, D. T. (2016). Database of bird flight initiation distances to assist in estimating effects from human disturbance and delineating buffer areas. Journal of Fish and Wildlife Management, 7(1), 181-191. (18) McGuire, R.L., Robards, M.R., & Liebezeit, J.R. (2023). Patterns in avian reproduction in the Prudhoe Bay Oilfield, Alaska, 2003-2019. Journal of Avian Biology, 2023(7-8). Given the demonstrated severity of the potential impacts and the number of unknown or uncontrollable factors which can affect or amplify disturbances to wildlife, protective buffer zones need to be universally added into the SETS. These buffer zones need to be applied around the no surface occupancy and no leasing areas to minimize the effects of oil and gas activities within these protected areas for any proposed mitigations to be effective. Additional buffers need to be placed around caribou habitat and studies such as these need to be incorporated in all Alternatives, including Alternative D.	(see above)
Freitas	Benjamin	World Wildlife Fund	79957	6	In October 2021 WWF submitted detailed scoping comments to BLM to help the agency strengthen its SEIS analysis based on knowledge of the shortcomings in the 2019 Final EIS. WWF emphasized the need for the agency to develop a robust alternatives analysis and use the best available data with respect to polar bears, caribou, birds, shipping, economics, and climate change. While DOI has improved some of its analysis and data in the Draft SEIS, in this letter, WWF provides the agency with specific recommendations for improvement as the agency moves forward to a Final SEIS. In particular, WWF urges DOI to: (1) develop a new and more protective action alternative; (2) improve polar bear protections in the action alternative stipulations and required operating procedures; and (3) use newer and more robust data in the Final SEIS with respect to polar bears, impacts from shipping, the economics of an oil and gas leasing program, and climate change. By incorporating these suggestions, DOI can help ensure protection of the Coastal Plain and its resources. Any leasing program must provide the highest level of protection for the resources of the Coastal Plain and include a robust analysis of the climate impacts from oil and gas leasing.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures. New data has been incorporated into the Final SEIS analyses.
Freitas	Benjamin	World Wildlife Fund	79957	8	DOI Must Develop a More Protective Alternative Consisting of Only 400,000 Acres and More Protective Stipulations and Required Operating Procedures DOI must "[r]igorously explore and objectively evaluate all reasonable alternatives" to a proposed action.(14) The purpose of the alternatives requirement is to analyze a variety of impacts and present a range of choices to the decision maker and inform the public.(15) Accordingly, the SEIS must include an evaluation of "all reasonable alternatives," and provide the decision maker with a "range of alternatives" from which to elect.(16) Every alternative must be given "substantial treatment . . . in detail . . . so that reviewers may evaluate their comparative merits."(17) Consistent with NEPA's basic policy objective to protect the environment, this includes more environmentally protective alternatives.(18) "The existence of a viable but unexamined alternative renders an [ETS] inadequate."(19) Agencies must consider a no-action alternative in all environmental reviews.(20) Without an accurate and thorough presentation of a no action alternative that reflects baseline conditions, "there is simply no way to determine what effect the proposed [action] will have on the environment, and, consequently, no way to comply with NEPA."(21) (14) Id. § 1502.14(a). (15) Id. §§ 1500.1,1502.14, 1505.1(e); State of Cal. v. Block, 690 F.2d 753 (9th Cir. 1982) (citation omitted). (16) 40 C.F.R. §§ 1502.14(a), 1505.1(e). (17) Id. § 1502.14(b). (18) Id. § 1500.2(e) (agencies must "[u]se the NEPA process to identify and assess reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment"); see also, e.g., Kootenai Tribe of Idaho v. Veneman, 313 F.3d 1094, 1121-22 (9th Cir. 2002) (citing cases), abrogated on other grounds by The Wilderness Socy' v. U.S. Forest Serv., 630 F.3d 1173, 1178-80 (9th Cir. 2011) (en banc). (19) Mont. Wilderness Ass'n v. Connell, 725 F.3d 988, 1004 (9th Cir. 2013) (quotations and citation omitted). (20) 42 U.S.C. § 4332(2); 40 C.F.R. § 1502.14(d). (21) Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988). As acknowledged by DOI, the alternatives considered in the 2019 Final EIS and 2020 ROD were legally deficient.(22) All of the action alternatives were based on an unlawfully limited interpretation of the Tax Act: that the act required BLM to authorize 2,000 acres of development and could not restrict development to fewer acres. As an initial matter, WWF is encouraged to see DOT's interpretation of the 2,000-acre limit now properly acknowledges that the Tax Act provision limits the total number of surface acres of all federal lands impacted across the Coastal Plain to 2,000 acres, including production and support facilities and regardless of whether such land is leased.(23) (22) Secretarial Order 3401 (June 1, 2021). See also, e.g., Department of the Interior, Decision, Suspension of Operations and Production to Alaska Industrial Development and Export Authority (June 1, 2021). (23) Draft SEIS, at p. 1-9.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures. New data has been incorporated into the Final SEIS analyses.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	9	Moreover, as properly acknowledged by DOI in the Draft SEIS, the Tax Act requires that 400,000 acres of lands be available for leasing in a second lease sale to be held by December 2024.(24) Despite this acknowledgment, DOI has failed to include a leasing alternative wherein only the minimum required 400,000 acres would be available for leasing. Instead, the minimum acreage DOI is considering for leasing in Alternative D consists of 765,800 acres.(25) To comply with NEPA the agencies must consider a range of reasonable alternatives that does not assume the agencies are required to authorize development beyond the 400,000 acres required by the Tax Act. To this end, since the Tax Act precludes a "no action alternative" consisting of a no leasing alternative, a legally sufficient range of alternatives must include a scenario where only 400,000 acres is available for leasing. Moreover, such an alternative must only consist of leasing tracts offered in the "areas that have the highest potential for the discovery of hydrocarbons," as required by the Tax Act.(26) (24) Id at p. 1-1 ("The Tax Act also requires the BLM to hold two lease sales of at least 400,000 acres each by December 2024."). (25) Id at p. 2-2. (26) 2017 Tax Act § 20001(c)(1)(B).	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures. New data has been incorporated into the Final SEIS analyses.
Freitas	Benjamin	World Wildlife Fund	79957	10	The areas of high hydrocarbon potential within the Coastal Plain Supplemental EIS boundary overlap with high-quality denning habitat for polar bears. The 1002 region has been able to support 5-30 land dens per year and, due to the increasing loss of sea ice habitat, polar bears are likely to continue denning on land in the 1002 area.(26) (26) 2017 Tax Act § 20001(c)(1)(B). A new, more protective alternative-in addition to offering 400,000 acres for leasing-must also include more protective stipulations and required operating procedures than currently offered by DOI in Alternative D. Because the Tax Act requires leasing to occur in the areas of highest hydrocarbon potential, and because those areas overlap significantly with high quality polar bear habitat, WWF recommends the agencies develop more protective stipulations and required operating procedures to protect polar bears and their habitat from oil and gas activities. Among other things, such measures could minimize the acreage available for lease and seismic exploration; keep leasing out of key areas, such as areas FWS identified as high-density for denning; limit areas where seismic exploration can occur and/or infrastructure may be constructed; impose non-waivable buffers around suitable denning habitat; and impose timing restrictions on oil and gas activities to ensure activities in denning habitat occur later in the winter, when denning bears have already departed from their dens. WWF specifically recommends the following additional protective measures for polar bears and their habitats in a new, more protective alternative: - No seismic on unleased areas and non-waivable seismic location restrictions on leased areas to protect polar bears - the agencies should include in a new, more protective alternative stipulations to prohibit seismic exploration and exploration drilling activities in all unleased areas (including prohibiting pre-leasing seismic exploration) and restrict seismic activities in leased areas of known polar bear denning and non-denning habitat. The agencies should prohibit seismic activities within five miles of polar bear maternal denning habitat and prohibit seismic in other areas until after den departure. For areas identified by USFWS as having high densities of maternal polar bear dens,(27) those areas should be made unavailable for leasing and this restriction must not be waived. While the Draft SEIS Lease Stipulation 4 (Alternatives C and D) prohibits oil and gas operations including seismic exploration on "major nearshore marine waters, lagoons, barrier islands, and coastal islands" in order to protect polar bears, this probation is time-limited to May 15 to November 1 and may be waived upon request to BLM.(28) For a new, more protective alternative a timing limitation for seismic activities on major nearshore marine waters, lagoons, barrier islands, and coastal islands must not be waivable. (27) See Draft SEIS, at p. 3-232 ("the highest density of maternal dens in Alaska 2000-2015 (2.06-2.32 dens per 100 km2) was located in the northwestern corner of the project area (Patil et al. 2022)."). (28) Draft SEIS at p. 2-12.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures. New data has been incorporated into the Final SEIS analyses.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	11	In addition, a new and more protective alternative must also include more protective stipulations and required operating procedures to protect against increased greenhouse gas emissions from new oil and gas production in light of the nation's carbon net zero goals and mitigate against adverse impacts across this ecologically sensitive Arctic marine ecosystem from increased vessel- traffic due to increased shipping associated with the proposed oil and gas development of the Coastal Plain. It is also vitally important to further protect the Arctic from the impacts of pollution from black carbon, from noise and chemical pollution related to shipping, and other industrial marine (open water or ice-based) activities.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. The BLM and FWS recognize the importance of accounting for adverse impacts from GHG emissions that could result from activities conducted pursuant to the leasing program. The feasibility of using low-GHG emission vehicles and equipment and other emissions reduction methods will be assessed for each proposal when submitted. As illustrated in Table 31, the contribution of GHG emissions from exploration, development, and production activities themselves would be small in comparison to the contribution of GHG emissions from downstream combustion of produced oil and associated market effects. As explained in Appendix C.6., there are many uncertainties with projecting future petroleum activities, such as the timing of oil field discoveries and associated development and the amount of economically recoverable oil. What is known, however, is that even in an optimistic scenario, it takes a number of years to progress from leasing to exploration to development to production, transport, and downstream consumption. Thus, there is a significant time lapse between the leasing phase and the manifestation of GHG emissions from downstream consumption and associated market effects. Meanwhile, the Department of the Interior currently lacks an established and widely applicable program for offsetting GHG emissions that directly or indirectly result from oil and gas leasing, or standards establishing which party in the long causal chain between leasing, exploration, development and production, transportation, and consumption should be responsible for offsetting such emissions. In the absence of such a program or at least generally acceptable standards of how one would be implemented, it is infeasible to impose such a requirement at the leasing stage of an oil and gas program, especially one in which actual production is highly uncertain and likely in the distant future. A more prudent and effective approach is to refrain from prescribing a potentially problematic standard now, and to instead revisit potential mitigation strategies when reviewing specific proposals in the future, when project GHG emissions inventories are available and more effective and standardized mitigation and offset strategies are likely to exist.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	12	While WWF appreciates the inclusion of more protective stipulations and required operating procedures in Alternative D as compared to the 2019 Final EIS, DOI must strengthen the polar bear protections in Alternative D before finalizing this SEIS. Despite the importance of the Coastal Plain to Southern Beaufort Sea ("SBS") polar bears, the Draft SEIS fails to adequately analyze meaningful alternatives and effective mitigation measures to avoid injurious or lethal impacts, particularly from seismic exploration and to denning habitat. Among other things, in Alternative D, DOI should develop more robust stipulations and required operating procedures to mitigate and minimize impacts to SBS polar bears from factors such as noise disturbance, aircraft traffic, physical obstructions, human-bear interactions, a decline in prey species, potential oil and hazardous material spills, and effects to habitat. As such, WWF proposes the following amendments and additions to the current measures outlined in Alternative D: Alternative D - Current Stipulation or ROP Lease Stipulation 5-Coastal Polar Bear Denning River Habitat "From the coastline to 5 miles inland, no permanent oil and gas infrastructure would be permitted within 1 mile of potential polar bear denning habitat on the Canning River, Niguanak River, Katakturuk River, Marsh Creek, Carter Creek, and Sadlerochit River, and all associated tributaries as defined by Durner et al. (2006), unless the BLM Authorized Officer approves alternative protective measures." WWF Recommendation for Alternative D Polar bear denning habitat as defined by Durner et al. (2006) is too restrictive and static, and not current. Polar bears are adapting to climate change and shifting their habitat use accordingly. There have been regional- scale shifts in den distribution within the SBS subpopulation in the past three decades, with an increase in denning on land and a further increase predicted in the future (Patil et al, 2022). Therefore, denning habitat should be defined on an ongoing basis using the current best available information, including predicted probability of use. (Patil et al, 2022)	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Freitas	Benjamin	World Wildlife Fund	79957	13	Alternative D - Current Stipulation or ROP Lease Stipulation 9-Coastal Areas (NSO) Before beginning exploration or development within 2 miles inland of the coastline, the lessee/operator/contractor, with local traditional knowledge experts, would develop and implement an impact and conflict avoidance and monitoring plan to assess, minimize, and mitigate the effects of the infrastructure and its use on these coastal habitats and their use by wildlife and people. The impact and conflict avoidance and monitoring plan would utilize a monitoring and adaptive management approach. Operators would be responsible for developing comprehensive prevention and response plans, including Oil Discharge Prevention and Contingency Plans and spill prevention, control, and countermeasure plans and maintain adequate oil spill response capability to effectively respond during periods of broken ice or open water, based on the statutes, regulations, and guidelines of the EPA, ADEC, and the BSEE, as well as ROPs, stipulations, and policy guidelines of the BLM. WWF Recommendation for Alternative D These stipulations are inadequate. Oil spill modeling of simulated oil spills originating from pipelines along the coast of the 1002 area shows that even a short (6 day) spill could expose dozens of polar bears per week to lethal and sub-lethal levels of oil. In the simulations, oil moved quickly and could affect communities in northern Alaska, creating challenging conditions for oil spill mitigation (Atwood, 2023).	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Freitas	Benjamin	World Wildlife Fund	79957	14	Alternative D - Current Stipulation or ROP Lease Stipulation 14-Polar Bear Den Detection, Avoidance, Monitoring, and Reporting Attempt to locate polar bear dens WWF Recommendation for Alternative D Methods such as infrared imagery and the use of polar bear scent-trained dogs do not detect 100% of dens. Even when conditions are optimal, the detection rate is capped at ~45% for single flights (Smith et al, 2020). Wilson and Durner (2020) estimated 20 dens/year within the 1002 and determined that seismic exploration across the 1002 would likely disturb one or more dens, even if FLIR surveys were used to avoid dens (Wilson and Derner, 2020). Because the SBS subpopulation produces few dens per year, even modest cub mortality due to den disturbance could negatively affect overall recruitment and population trends (Patil et al, 2022). Until 100% of polar bear dens can be accurately and reliably detected, all seismic activity within polar bear denning habitat should be prohibited during the denning period (November-April).	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Freitas	Benjamin	World Wildlife Fund	79957	15	Alternative D - Current Stipulation or ROP Required Operating Procedure 15 Objective: Reduce changes in snow distribution associated with the use of snow fences to protect water quantity and wildlife habitat, including snow drifts used by denning polar bears. Requirement/Standard: The use of snow fences to reduce or increase snow depth requires permitting by the BLM Authorized Officer. WWF Recommendation for Alternative D From this description, it is not clear how changes in snow distribution caused by snow fences will be mitigated/reduced. Recommendation: further clarity is required in order to assess the effectiveness of this operating procedure in reducing changes in snow distribution, such that snow drifts are still available to denning polar bears. For example, under which criteria would use of snow fences be permitted.	In Alternative D2, snow fences would be sited >5 miles from shore to minimize the chances of a polar bear encountering them and choosing to den.
Freitas	Benjamin	World Wildlife Fund	79957	16	Alternative D - Current Stipulation or ROP Required Operating Procedure 34 Objective: Minimize the effects of low-flying aircraft on wildlife, subsistence activities, local communities, and recreationists of the area, including hunters and anglers. Requirement/Standard: The operator would ensure that operators of aircraft used for permitted oil and gas activities and associated studies (such as cultural resource surveys) maintain altitudes according to the following guidelines WWF Recommendation for Alternative D The guidelines should follow the best available science, such as the paper by Quigley et al. currently in review with the Journal of Wildlife Management that investigates behavioral response of polar bears to aircraft overflights.	ROP 34, Guideline B has been updated to reflect use of best available science.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	17	Alternative D - Current Stipulation or ROP Required Operating Procedure 46 Vessels in Vicinity of Pacific Walruses and Polar Bears b. Except in an emergency, vessel operators would not approach within 0.5 miles of observed polar bears, within 0.5 miles of walrus observed on ice, or within 1 mile of walrus observed on land. c. For Polar Bears: i. Operational and support vessels must be staffed with dedicated marine mammal observers to alert crew of the presence of polar bears and initiate mitigation responses. ii. Vessels must maintain the maximum distance possible from polar bears. No vessel should approach within an 805-meter (0.5-mile) radius of polar bears observed on land or ice. iii. Vessels must avoid areas of active or anticipated polar bear subsistence hunting activity as determined through community consultations. iv. The USFWS may require trained marine mammal monitors on the site of the activity or on board any vessel or vehicles to monitor the impacts of Industry's activity on polar bear.] Objective: Minimize impacts on marine mammals from vessel traffic. WWF Recommendation for Alternative D The operating procedure does not state whether icebreaking by vessels is permitted or not, for example in years when sea ice has not receded by July 1. The operating procedure does not state that vessels will operate in such a way to ensure that 1) there is no separation of polar bear family groups (i.e., mothers with cubs) that are swimming or present on sea ice in the vicinity of vessels, or 2) family groups are not pushed further from the shore by vessels transiting between the coastline and the family group. Fur of polar bear cubs has relatively poor insulating properties in water, making them prone to hypothermia. Recommendation: Icebreaking by support vessels is not permitted at any time, to avoid fragmentation and destruction of polar bear habitat. Vessels will operate in such a way to ensure that there is no separation of polar bear family groups that are swimming or present on sea ice in the vicinity of vessels, and that family groups are not pushed further away from shore by vessels.	For vessels outside of the Coastal Plain/Refuge, BLM lacks authority to impose the recommended restrictions.
Garnaas-Holmes	Steve	-	32831	2	Please develop an alternative that maximally protects the coastal plain from future oil leasing.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Grafe	Erik	Earthjustice	80222	3	Limiting the amount of fossil fuel produced on any leases in the Refuge would limit the Program's carbon emissions and mitigate its damage to the climate and Refuge. Alternative D should include a measure to limit the amount of fossil fuel production and subsequent emissions from any leases issued as a result of the sale. One way to limit climate damage from Refuge leases would be to condition any exploration or development of Refuge leases upon a finding by Interior that developing and burning fossil fuels from the leases is compatible with reducing greenhouse gas emissions to meet climate commitments. As described below, such a measure is well within Interior's authority. It also would further the Biden Administration's commitment to "deploy the full capacity of its agencies to combat the climate crisis" and "reduce[] climate pollution in every sector of the economy," including by "aligning the management of . . . public lands and waters . . . to support climate action."(12) (11) Id. at 3-10. (12) Exec. Order No. 14,008, 86 Fed. Reg. 7619, 7622-23 (Feb. 1, 2021). The DSEIS does not conduct this analysis or even provide very meaningful information to address the question of whether fossil fuel production from the Refuge can be compatible with climate commitments. It offers only a comparison of net emissions from oil produced by the Program with the overall, economy-wide emissions target for 2030.(13) It is well established that such comparative analysis is insufficient.(14) Further, the comparison in the DSEIS is particularly uninformative about how production from the Program can be compatible with climate commitments, because Interior uses 2030 commitments as the metric of comparison, but no oil would be produced from Program leases until 2032.(15) This comparison does not provide useful information about how fossil fuel from the Program would help the United States further reduce its emissions to net zero by 2050. Interior should insert a condition in leases that makes clear that lessees cannot explore or develop the leases pending a future analysis by Interior that concludes such production is consistent with meeting climate commitments. (13) DSEIS at 3-12, 3-14. (14) See 350 Mont. v. Haaland, 50 F.4th 1254, 1259 (9th Cir. 2022) (holding that comparing project emissions "against total global emissions predestined that the emissions would appear relatively minor"); Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 538 F.3d 1172, 1216, 1223 (9th Cir. 2008) (rejecting comparative analysis of decision emissions to overall emissions); California v. Bernhardt, 472 F. Supp. 3d 573, 623 (N.D. Cal. 2020) (rejecting BLM assessment that only quantified emissions and compared them to nationwide total emissions); see also Diné Citizens Against Ruining Our Env't v. Haaland, 59 F.4th 1016, 1043 (10th Cir. 2023) ("Simply stating what percentage the emissions will make up of regional, national, and global emissions does not meaningfully inform the public or decisionmakers about the impact of the emissions.") (citing Wyoming v. U.S. Dep't of Agric., 661 F.3d 1209, 1253 (10th Cir. 2011)). (15) DSEIS at 3-12, 3-14.	A lease stipulation limiting the amount of oil and gas a lessee can recover from a lease would be contrary to the purposes of Section 20001(c)(1) of PL 115-97. The GHG analysis included in the document follows the latest CEQ guidance on how to address and describe GHG impacts in NEPA and discloses the amount of GHG resulting from direct and indirect impacts from the proposed action. The current state of science does not allow for a quantitative analysis as to how the GHG released from the proposed action would directly or explicitly impact the environment in and around Coastal Plain.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Grafe	Erik	Earthjustice	80222	5	There are several ways Interior could go about making a determination whether permitting exploration and development in the Refuge is compatible with commitments to reduce greenhouse gas emissions to achieve climate commitments. We describe four below. 1. Consistency with national emissions targets. Interior could identify a target for emissions from the federal oil and gas program and require Interior's leasing and permitting decisions to be consistent with achieving that goal. For example, Interior could aim to reduce greenhouse gas emissions from federal oil and gas production to net zero by 2050, so that the federal oil and gas program is doing its part to meet the broader U.S. commitment to achieve those reductions economy-wide. Under this approach, Interior could determine the quantity of greenhouse gas emissions reductions necessary to reduce federal emissions to net zero by 2050 and then allocate annual allowable emissions across Interior land management offices to achieve the emission target. Climate screening in permitting processes within the Program would be based on these allocations. 2. Consistency with Refuge-specific targets. Interior could establish a limit on permitting to account for downstream emissions of proposed projects specific to the Refuge and independent of any potential national public lands mechanism. For example, Interior could require a regular assessment of the climate impacts of oil and gas projects and potential projects on the Refuge. Such an assessment could set the basis for decisions in the following year or other period for approval of any exploration or development proposals within the Refuge. Though not necessarily tied in a quantitative way to national climate goals, such a process could identify a series of factors for the agency to consider in evaluating the relative contributions of proposed projects to the climate problem and resulting impacts to the Refuge and its resources and values. Interior could tie its approval decisions to an assessment of such factors, along with factors relating to the other potential direct impacts of such projects. For example, Interior could specify factors such as the size of the project and resulting greenhouse gas emissions, the timing of the project and the period over which emissions would be generated, and the potential for the construction of the project and its infrastructure to increase the likelihood that the project locks in future production in excess of the needs of a low carbon future.(39) Interior could base decisions to approve, modify, defer, or deny project proposals based on such factors. (39) Factors assessing the potential for locking in future production associated with a current proposal are the subject of recent analyses that BLM could use to design such an approach. See, e.g., Fisch-Romito et al. 2021; SEI 2015. 3. Project emissions impact modelling. Interior could use the quantitative greenhouse gas assessment tool that scientists at the Natural Resources Defense Council (NRDC) have developed for evaluating the relative impact and significance of greenhouse gas emissions at the project level. In a nutshell, the tool evaluates project emissions over time and in the context of the entire energy system with the purpose of objectively determining whether the project's emission impacts are consistent with the realistic constraints of achieving greenhouse gas emission limitation goals. In its initial design, NRDC has chosen the 1.5°C threshold because of the substantial negative effects climate change is expected to deliver with warming in that range versus the significantly more substantial effects of warming above 1.5°C.(40) This tool can also be calibrated to assess consistency with other targets, such as the U.S. 2030 Nationally Determined Contribution (NDC), wherever there is sufficient data.(41) (40) IPCC, Summary for Policymakers In: Climate Change 2023: Synthesis Report, Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2023). (41) Sufficient data here is defined as an internally consistent data source meeting both required climate scenario inputs-i.e., budgeted emissions and fossil energy demand-as derived from one or more viable models for the energy system to transition along the alternative selected emission trajectory. For example, pathways consistent with the U.S.'s 2030 NDC, where U.S. emissions fall to 50 percent of 2005 levels by the year 2030, can be approximated through models where that target is met en route to longer-term targets. The greenhouse gas assessment tool evaluates the impact and significance of a project's greenhouse gas emissions by evaluating its anticipated future releases in the context of U.S. energy system characteristics and the gap between status quo and climate goal consistent operations, as judged by best available science at the time of assessment. The tool evaluates the extent to which a new fossil fuel project (or group of leases) can be expected to be built (or developed) and operated in a manner that is consistent with the central system-wide emissions constraints of decarbonization to a 1.5°C target while also meeting energy needs in the process of decarbonizing. To achieve an objective and scientifically sound result from these comparisons, the tool: -Accounts for 1. the project's lifecycle greenhouse gas emissions, 2. the project's lifetime energy throughput, 3. a defined budget of emissions constraints and energy demand needs, derived from a scientifically determined set of trajectories for greenhouse gas emissions releases over time (through at least 2100) that are constrained to meet desired climate targets, and 4. defined estimates of already committed emissions and energy from future operation of existing energy infrastructure. -Provides a formula for determining a project's emissions impact, defined as the share of the remaining budgeted emissions it consumes after emissions from already committed sources are accounted for, all considered over the life of the project. -Provides a formula for rationally and quantitatively interpreting the overall significance of the project's emissions impact by putting it in context of the project's size and commensurate role in the 1.5°C-transitioning energy system, i.e., the project's "energy contribution." The project's energy contribution is defined as its planned or potential fuel throughput as a share of projected fossil energy demand over its operating lifetime, given the existing availability of already developed supplies to meet energy demands. -Generates an easy-to-interpret and scientifically based decision rule for judging whether the project is significant as defined by the need to stay within emissions limits and meet energy needs in a 1.5°C system, or otherwise carbon-constrained economy. If the share of the remaining emissions budget the project would consume is in balance with the share of fossil energy the project would supply, that implies the project's emissions intensity (per unit of energy supplied) is consistent with the necessary system-wide average for a new project joining the decarbonizing energy system over the time period it's proposed to operate. The greenhouse gas assessment tool in this way determines emissions significance of a project by measuring its balance of	Considering the first and third point, please refer to Table 9-1 of the BLM Air Specialists Report (https://www.blm.gov/content/ghg/2022/), which has been incorporated by reference in the SEIS. Table 9-1 evaluates the potential federal fossil fuel GHG emissions with respect to Global Carbon Budgets. Under the 1.5 degree Celsius scenario, the time to exhaust the remaining budget is 7.68 years. If all federal oil and gas emissions were removed the time changes to 7.72 years. The results from eliminating all federal oil and gas emissions changes the carbon budget by 16 days, further showing the negligible GHG emissions resulting from Alternative D. Additionally, oil and gas projects take years to plan and execute. BLM would review these 20+ year plans during future project specific NEPA, which would include the analysis of the social cost of carbon. A social cost of carbon analysis was completed as part of the SEIS, see Appendix G, Section G.2.1. References have been added to the Chapter 3, Section 3.2.1 Climate and Meteorology to point readers to the appropriate section for that analysis.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Grafe (cont.)	Erik (cont.)	Earthjustice (cont.)	80222 (cont.)	5 (cont.)	carbon emissions "impact" within the 1.5°C warming threshold against its energy "contribution" provided to the evolving energy system, in an approach analogous to cost-benefit analysis. However, it is ultimately a test of whether the project can pull its weight while navigating a transitioning energy system from our status quo to one that limits warming to 1.5°C in the long-term. NRDC provided a walkthrough of the tool's application to the Willow Master Development Plan in comments submitted to Interior on August 29, 2022.(42) (42) Earthjustice et al., Letter to S. Rice, BLM, Re: Assessment of Greenhouse Gas Emissions Significance in the Willow Master Development Plan Draft Supplemental Environmental Impact Statement at 9-23 (August 29, 2022). Interior ultimately used the NRDC climate tool as part of its analysis of the Willow project. In that instance, however, Interior used the tool only to help evaluate significance under NEPA. It did not use the test as part of its calculus in selecting a preferred alternative. The tool is designed not just to evaluate the significance of a project's climate impacts (and thus determine whether an environmental assessment or environmental impact statement is appropriate under NEPA), but to guide substantive agency decision-making consistent with scientific standards. The tool provides one mechanism for Interior to use to assess whether any given project should be approved and under what conditions. 4. Assessment based on the social cost of carbon. Interior could adopt a mechanism based on a social cost of carbon analysis. In this approach, Interior would require a social cost of carbon analysis for any permitting decision. The requirement could specify the ratio between the social cost of carbon from the emissions generated, and the quantifiable economic and other benefits of the decision necessary for a decision to proceed. For example, the inquiry could require that benefits exceed the social costs of the decision or apply some other ratio of benefits to social cost. Or it could require a particular justification with an enhanced burden for approving a project in the face of a substantially negative social cost analysis. Though such an approach would not necessarily link directly to established U.S. climate goals, it would advance the same goal and limit the approval of projects that are contrary to economically efficient action on climate change. Such a mechanism would have to include provisions to ensure that a robust social cost analysis is conducted that captures the full social cost of reasonably foreseeable emissions, for example, by linking to recent guidance from the U.S. Environmental Protection Agency and the Council on Environmental Quality. The requirement should also set out an obligation for regular assessment of ongoing operations to compare the ongoing economic benefits of production with the social costs of greenhouse gas emissions from that production, and to provide for a mechanism for suspensions or production limits to be imposed when needed.	(see above)
Grafe	Erik	Earthjustice	80222	6	Alternative D should offer no more than 400,000 acres for lease.(43) The Section 20001(c)(1) of PL 115-97 provides that the agency offer "not fewer than 400,000 acres area-wide in each lease sale" and "those areas that have the highest potential for the discovery of hydrocarbons."(44) No other law requires that any individual lease sale in the Refuge offer 800,000 acres. To the contrary, both the Refuge Act and ANILCA require Interior to ensure that the Refuge's non-oil-and-gas purposes are fully realized. (43) Contra DSEIS at 2-2, Tbl. 2-1. (44) Pub. L. No. 115-97, § 20001(c)(1)(B)(i). The DSEIS's own analysis demonstrates that offering 800,000 acres significantly increases the risk that the Refuge's statutorily protected values will be substantially degraded. ANILCA provides that the first purpose for which the Refuge was established and "shall be managed" is "to conserve fish and wildlife populations and habitats in their natural diversity[.]"(45) Given that the Coastal Plain provides habitat for the Refuge's diverse fish and wildlife, offering more than the required acreage necessarily trenches on this management requirement. And offering more acres than required may have particularly dire consequences for some of the most sensitive elements of the Refuge's ecosystem. (45) Pub. L. No. 96-487, § 303(2)(B). Polar bear habitat will be disproportionately affected by increased acreage. According to the DSEIS, polar bear terrestrial denning habitat constitutes "76.3 percent (1,193,000 acres) of the program area."(46) Moreover, according to the agency's own analysis, known dens "are not distributed evenly across the landscape" and "the combined high and medium [hydrocarbon potential] zones hav[e] the most denning habitat (75 percent) and number of documented dens (95 percent)."(47) (46) DSEIS at 3-244. (47) Id. at 3-249. Currently, Alternative D allows for oil and gas activity on the vast majority of the acreage identified as potential maternal denning habitat. Even with no-surface occupancy stipulations, these areas would still be subject to damaging seismic exploration that could result in "moderate to major direct impacts on the [Southern Beaufort Sea (SBS)] population of bears."(48) The U.S. Fish and Wildlife Service (USFWS) drove this point home in a 2019 letter where the agency indicated that not leasing is better than No Surface Occupancy (NSO) stipulations for high and medium density polar bear habitat.(49) Reducing the total acreage offered to exclude maternal denning habitat would reduce this risk to polar bear populations and habitat, and better ensure consistency with ANILCA's requirements. (48) Id. at 3-256. (49) USFWS Regional Director - Alaska Region, Memorandum to BLM Project Manager, Re: Recommendations for No Leasing areas to create an 800,000 acre alternative in the 2018 Draft Environmental Impact Statement (DEIS) for the Coastal Plain Oil and Gas Leasing Program for the Arctic National Wildlife Refuge, Alaska (Apr. 8, 2019) ("We view the benefits of [No Leasing] compared to [NSO] as reducing impacts from exploration activities, having less potential for damage to subsurface resources important to the Arctic Refuge including groundwater, soils and permafrost, and eliminating the potential for exceptions to NSO restrictions.").	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Grafe	Erik	Earthjustice	80222	8	Similarly, Porcupine caribou herd calving and post-calving areas are disproportionately affected by the acreage offered under Alternative D.(54) The analysis in the DSEIS outlines the deleterious effects of oil and gas development on caribou, including the Porcupine Caribou Herd.(55) And it particularly notes the potentially widespread displacement effect of infrastructure, including roads.(56) Alternative D allows for development with only standard terms and conditions on thousands of acres of potential Porcupine Caribou Herd calving grounds.(57) Even where NSO stipulations are in place, the DSEIS admits that "it is likely that roads will cross areas with NSO restrictions to access leased areas," that "there likely will be some displacement of maternal caribou during calving," and that development "could cause delays or deflections of Porcupine Caribou Herd and Central Arctic Herd animals during post-calving movements."(58) All told, the surface disturbance projected under Alternative D could result in "418,000 acres of potential Porcupine Caribou Herd calving displacement."(59) Displacement during calving is associated with declines in calf survival and displacement in the post-calving period is associated with increased nutritional and physiological stress.(60) And while leasing conditions may reduce some of this harm, they cannot eliminate it. In addition to the restrictions urged below, reducing the total acreage available for leasing under Alternative D would further ensure that the Program is fulfilling the protective purposes of the Refuge as laid out in ANILCA. (54) The DSEIS's definition of calving and post-calving area lacks scientific support. BLM should utilize a definition of these areas rooted in the best available science and including all areas of Coastal Plain that experience meaningful use by the Porcupine Caribou Herd during the calving and post-calving periods. Notwithstanding this flawed definition, the DSEIS still clearly illustrates the harm that can come to caribou from oil and gas activity, particularly during the critical calving and post-calving stages. (55) DSEIS at 3-204 to 3-213, 3-218 to 3-220. (56) Id. at 3-207 to 3-208. (57) Id. at 3-218. (58) Id. (59) Id. (60) Id. at 3-207, 3-209 to 3-210, 3-222 to 3-225.	The SEIS considers both historic and projected future calving and post-calving areas as may be effected due to climate warming. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Grafe	Erik	Earthjustice	80222	9	Beyond wildlife, offering more than 400,000 acres for leasing will unnecessarily harm the Coastal Plain's hydrological resources. As the DSEIS acknowledges, development on the Coastal Plain-including road building and use-would harm water quantity, water flow, and water quality.(61) While Alternative D would provide more protections for hydrological resources than B or C, it would still expose thousands of acres of these resources to the impacts of exploration and development.(62) Reducing the acreage available for lease under Alternative D would further safeguard these resources, allowing Interior to more completely fulfill their obligations under ANILCA.(63) (61) Id. at 3-95 to 3-102. (62) Id. at 3-103. (63) See Pub. L. No. 96-487, § 303(2)(B)(iv). Similarly, the acreage contemplated by Alternative D will put large swaths of the Coastal Plain's terrestrial resources-soil, vegetation, and permafrost-in harm's way. These resources are the foundation of the Coastal Plain's ecosystem. All phases of development- seismic exploration, drilling, road construction, facility development-risk adverse, long-term impacts to the area's vegetation (especially given the relatively low snow fall and high windiness of the area).(64) Development will also alter the geomorphology of the area, changing drainage patterns, causing water to pool, increasing thermokarst, and accelerating permafrost thaw.(65) These changes can exacerbate the aforementioned impacts to vegetation.(66) Development can also directly alter the distribution of snow on the landscape, adding to the thaw effect.(67) And all this activity will exacerbate the ongoing effects of climate change on the Coastal Plain's permafrost.(68) Offering fewer acres would better protect these resources. (64) DSEIS at 3-119 to 3-123. (65) Id. at 3-80. (66) Id. at 3-121. (67) Id. at 3-81. (68) Id. at 3-79.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Grafe	Erik	Earthjustice	80222	10	Interior should modify Alternative D to restrict activities and development particularly harmful to sensitive species on acres left open to leasing.(69) As currently written, Alternative D is also insufficiently protective of Refuge purposes because it allows seismic on all acres open to leasing, leaves almost 40,000 acres open to surface occupancy, including areas important to caribou, and only provides timing limitations for 1,800 acres of the Program area.(70) Changes are critical to better achieve the Refuge purposes of protecting the Refuge's wildlife in its natural diversity and to meet treaty obligations related to caribou.(71) (69) See Pub. L. No. 96-487, § 303(2). (70) DSEIS at 2-2, Tbl. 2-1; id. at 2-4. (71) See supra n.8 (describing purposes). As the DSEIS recognizes, seismic exploration can be detrimental to many of the resources of the Coastal Plain. It damages vegetation, resulting in long-term damage to forage plants critical to caribou and changing the hydrography and topography of the coastal plain.(72) Mitigation measures used elsewhere, such as snow depth requirements, are unlikely to be effective in the Coastal Plain.(73) The only way to avoid this irreparable damage to this sensitive ecosystem is to prohibit seismic exploration across the majority of the Coastal Plain. In particular, areas important to caribou should be closed to seismic activity because damage to forage plants could reduce the availability of seasonally important forage, with negative consequences for caribou.(74) (72) See DSEIS at 3-205 (damage to caribou foraging plants); supra p. __ (describing damage to permafrost and vegetation). (73) See Center for Biological Diversity et al., Letter to S. Sweet, BLM, Re: Scoping Comments on the Coastal Plain Oil and Gas Leasing Program Supplemental Environmental Impact Statement at 5-10 (Oct. 4, 2021) (describing effects of seismic on permafrost and polar bears); Center for Biological Diversity et al., Letter to S. LaMarr, BLM, Re: Marsh Creek East seismic comments at 3-9 (Nov. 6, 2020). (74) DSEIS at 3-205. In addition, seismic vehicles can run over or otherwise disturb polar bear dens, causing den abandonment or even crushing and killing polar bears in a population that is already taken at rates that exceed potential biological removal.(75) Interior recognizes that existing den detection measures, which would be required before seismic operations, could leave as many as six to eleven dens undetected, and "seismic vehicles would be likely to pass within 165 to 660 feet of all dens in the program area," close enough to cause some mothers to abandon their dens.(76) Disturbance of undetected dens could have "moderate to major impacts" for polar bears that would have to be reduced to a negligible level for future incidental take authorization.(77) Interior does not explain how it could achieve negligible levels of disturbance to meet Marine Mammal Protection Act requirements if seismic is authorized in polar bear denning habitat without developing new, more accurate den detection measures. Further, Interior acknowledges that it could be difficult to maintain negligible levels of disturbance in the future as polar bears increase their use of terrestrial denning habitat and development under the oil and gas program increases.(78) Interior can only ensure that polar bear dens are not disturbed by prohibiting seismic activities entirely in denning areas. (75) Id. at 3-248 to 3-250, 3-255 to 3-256; compare USFWS, Stock Assessment Report for Polar Bear (Ursus maritimus): Southern Beaufort Sea Stock at 11 (June 24, 2021) (potential biological removal estimated at 14 bears per year), with id. at 12-14, 16-17 (average take of bears for the years 2006 - 2015 exceeded 33 bears per year), 36; see also 86 Fed. Reg. 33,337, 33,337-38 (June 24, 2021) (adopting final stock assessment report); 16 U.S.C. §§ 1362(9), (20) (defining "optimum sustainable population" and "potential biological removal level"). (76) DSEIS at 3-249. (77) Id. at 3-251. (78) Id.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Grafe	Erik	Earthjustice	80222	11	Interior should also further restrict surface activities. As the DSEIS acknowledges, surface activities, including roads, pipelines, structures, vehicles, and human activity can disturb and displace caribou not only during the calving and post-calving periods, but also during the insect relief season.(79) These disturbances can interfere with access to insect-relief areas, resulting in "high energetic costs, lower rates of foraging, lower quality forage, a decline in body condition, and high levels of trampling of forage in the project area", and declines in body condition can reduce productivity and survival rates.(80) Yet Alternative D allows surface use of 332,000 acres of post-calving habitat.(81) Although lease stipulations would provide timing restrictions for construction in post-calving habitat and insect-relief areas, roads, well pads, airstrips, and pipelines could be constructed in these areas.(82) Even in areas that are considered no surface occupancy, roads and easements would nonetheless be permitted.(83) While timing restrictions on construction activities are beneficial, more is needed to protect caribou. All calving, post-calving, and insect-relief areas that are open to leasing should be subject to no surface occupancy requirements, and those requirements should not allow for roads, easements, or elevated pipelines. (79) Id. at 3-207 to 3-208, 3-210. (80) Id. at 3-210. (81) Id. at 2-3, Tbl. 2-2. (82) Id. at 2-16. (83) Id. at 3-218. In expanding surface restrictions, Interior should create a clear cap for all surface activity, including roads, easements, and elevated pipelines. The Section 20001(c)(1) of PL 115-97 allows Interior to "authorize up to 2,000 surface acres" for "production and support facilities[.]"(84) Interior may authorize less than 2,000 acres of surface occupancy, but not more. But the DSEIS states that snow and ice roads and elevated pipelines would not count toward this limit,(85) and further states that roads would likely cross through NSO and even unleased areas.(86) With these exceptions, substantially more than 2,000 acres could be open to surface occupancy, counter to the limits in the Section 20001(c)(1) of PL 115-97, and it is not clear how many sensitive areas would be crossed by roads or other surface development. The 2,000-acre cap is a strict limit for all surface occupancy and Interior must construe it accordingly. Further, Interior is not required to grant every request it receives for an easement or right-of-way for oil and gas purposes, but should proceed under the requirements of ANILCA Title XI, which regulates Interior's authorization of transportation and utility system right-of-ways and easements in the Refuge and other conservation system units.(87) (84) Pub. L. No. 115-97, § 20001(c)(3). (85) DSEIS at 1-9. (86) Id. at 3-218. (87) See Pub. L. No. 96-487, § 1101(c).	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures. Additionally, No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Grafe	Erik	Earthjustice	80222	7	In particular, as suggested by USFWS' 2019 letter, the agency should exclude from leasing those areas where polar bear dens are most likely to occur. Polar bears are threatened under the Endangered Species Act. And the SBS population is in particularly dire straits. The DSEIS notes that "[t]he most important characteristic of maternal denning habitat is the presence of topographic features of sufficient height and slope to catch blowing snow and form persistent drifts in early winter, with at least 4.3 feet of vertical topographic relief and steep slopes []."(50) Using this information, the DSEIS identified 18,200 acres as "[e]stimated [a]rea of [p]otential [m]aternal [d]enning [h]abitat."(51) The agency should exempt this area from leasing, along with buffers sufficient to protect dens, mothers, and cubs from the impacts of seismic explorations.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Granato	Linda	-	22573	2	The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security. BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd. Please tighten up the language and let's protect this area completely with no room for loopholes, misunderstanding, misinterpretation. Life as we know it is at stake	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Granato	Linda	-	22573	1	Even under the most protective alternative put forth, "no surface occupancy" (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS. Clear, concise communication is extremely important and necessary. There isn't time or room for doing this Halfway.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Grannemann	Ken	-	62117	2	2) Dismissal of the No Action alternative: Both the original EIS and the supplemental fail to give adequate attention to the No Action alternative. There are numerous benefits to the No Action alternative but they are largely neglected in the documents.	The no action alternative does not meet the intent of the Section 20001(c)(1) of PL 115-97.
greer	jill	-	62177	1	Furthermore, there is no clear definition to terms such as "no surface occupancy" (NSO), thus the possibility arises for permanent infrastructure & development. In such remote locations, who is to stop a "misinterpretation" of the statute. The Draft SEIS cannot serve the intended purpose unless all leased tracts have strict NSO stipulations that are clearly set forth, AND permit no possible legal "wiggle-room.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
H.	Zach	-	24233	1	The Supplemental EIS (SEIS) should include analyses for how any leased areas will be accessed. For instance, the 1002 area is about 50 miles from the existing road network in Prudhoe Bay/Deadhorse, but the SEIS does not discuss the resources or impacts that would come from constructing ice roads to access the lease area to support exploration.	During future, site-specific NEPA, aspects of development such as ice road construction, will be analyzed once project proposals are received. Lease Stipulation 13 (Master development Plan) intends to minimize the extent of development and redundant infrastructure by a single operator and among multiple operators
Hamilton	Bruce	-	45518	5	Once you have a set of wild areas with the least damage projected to wildlife, you still need to go a step further to protect the Refuge. First, make sure that the offering is not one acre more than the minimum required to offer under the law. Every additional acre offered only adds to the damage to the Refuge and the damage to the global environment by the burning of the fossil fuels. Also take care to avoid streams, wildlife corridors, key waterfowl and raptor nesting sites. Be mindful of how any produced oil and gas will need to be accessed and transported and the impact of those transportation corridors and how to keep them to a minimum. Whenever possible leases should have strict non-waivable no surface occupancy stipulations. These are not standard oil field leases in an existing West Texas oil field, this is the one and only Arctic National Wildlife Refuge and if you plan to drill and produce here you need to abide by the strictest protective standards, or take your drill rigs elsewhere. If NSO stipulations make the leases prohibitive to exploit, so be it. That is the price of any development in this wilderness.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Hanson	Art	-	13654	1	I strongly urge you to develop an alternative that maximally protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich'in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, Climate Change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will exacerbate these stresses, cause Irreparable harm to this irreplaceable region, and to the millions of birds and other animals that migrate there every summer from around the world, and undermine urgent action to address the Climate Crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Hanson	Art	-	79828	5	ven under the most protective alternative put forth, “no surface occupancy” stipulations are broad and undefined and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they Must be well-defined and unwaivable in the EIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Hanson	Art	-	79828	2	The alternatives set forth in the Draft SEIS do Not grant strong enough protections to the Porcupine caribou herd, which the Gwich'in Nation relies on for cultural survival and food security.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
Hayward	Michelle	-	39606	6	Even the least impactful option of “no surface occupancy” (NSO) has broad and vague terms, creating plenty of loopholes that will be exploited, resulting in greater impacts than claimed on paper. NSO stipulations must be highly detailed and set in stone within the Draft SEIS, due to having the greatest claims of least impact, increasing its chances of being supported.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Heslep	Alison	-	80164	12	Following a comprehensive review of the draft SEIS, with particular emphasis on the PCH, and subsistence harvesting practices of the Gwich'in and Inuvialuit peoples in the NWT, and consistent with the principle of fostering balanced and sustainable development, the GNWT recommends Alternative D as a baseline and proposes further restrictions on the lease sales and maximum acreage allowable for leasing. From the GNWT's assessment, Alternative D appears to satisfy the need for oil and gas development as stipulated in Section 20001(c)(1) of the Tax Cuts and Jobs Act and offers enhanced protection and mitigation measures for the PCH compared to the other alternatives outlined in the draft SEIS. In addition to the mitigations associated with Alternative D, the GNWT recommends that BLM confine lease offerings to 400,000 acres for each lease sale to further mitigate adverse impacts from the Program. The lease sales should be capped at two offerings, ensuring that the combined offered acreage does not exceed 800,000 acres, outlined as the minimum allowable allocation in the Tax Cuts and Jobs Act. The BLM should clearly delineate the specific tracts of land earmarked for leasing and prohibit seismic activity on areas not slated for potential lease consideration.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Heslep	Alison	-	80164	14	#0 Ch/Sec/Sub-sec N/A Title Overarching Comment Comment(s) The Government of the Northwest Territories (GNWT) is interested in the Coastal Plain Oil and Gas Leasing Program, as species that have large home ranges and/or undergo large seasonal migrations, such as polar bears from the Southern Beaufort Sea subpopulation and Porcupine Caribou, have ranges that include both the Arctic National Wildlife Refuge (ANWR) and the Northwest Territories (NWT). In addition, the GNWT is a party to the Porcupine Caribou Management Agreement and is represented on the International Porcupine Caribou Board. As such, the GNWT has a responsibility to support the stewardship and conservation of the Porcupine herd and protection of subsistence harvest by Gwich'in and Inuvialuit people in the NWT. These goals and responsibilities are the basis for the GNWT's participation in the review of the Coastal Plain Oil and Gas Leasing Program. The GNWT has reviewed the draft Supplemental Environmental Impact Statement (SEIS) prepared by the Bureau of Land Management (BLM). While there remains uncertainty regarding the effectiveness of proposed mitigations and a potential for adverse impacts to transboundary species such as the Porcupine Caribou herd (PCH) and polar bears, Alternative D provides for more protection and mitigation measures for those species than Alternative B or C. Alternative D also excludes more land from lease sales than Alternative B or C. Alternative D excludes 797,700 acres of land from lease sales. This 797,700 acres of land that is not available for lease sale includes areas identified by the GNWT as areas frequently used by the PCH (see the GNWT's December 17, 2020 submission on the Coastal Plain Oil and Gas Lease Sale Nomination and Comment process). Recommendation(s) Of the alternatives presented in the draft SEIS, the GNWT prefers Alternative D because it allows all purposes of ANWR to be met and in general is more protective of PCH than Alternative B or C. The GNWT recommends the BLM select Alternative D but modify it by: - Limiting lease sales to two offerings. - Ensuring the total land offered for leasing does not exceed the 800,000 acres minimum allowable allocation and limiting each lease sale to 400,000 acres. - Involve Indigenous governments and Indigenous organizations from Canada in drafting the final Environmental Impact Statement (EIS) for Alternative D, ensuring that traditional knowledge plays a pivotal role in guiding conservation strategies. - Hold community hearings in Fort McPherson and Aklavik and ensure that the Hunters and Trappers Committees, Renewable Resource Councils, and the public are notified of such meetings.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Heslep	Alison	-	80164	16	#2 Ch/Sec/Sub-sec 2.3.5 Title Lease Stipulations Comment(s) The BLM indicates that lease stipulations or required operating procedures (ROPs) may be waived if the intended objective can be achieved without it. While some ROPs and lease stipulations outline explicit criteria for their waiver, others do not. There is ambiguity on how these specific conditions correlate with the basic requirement of "objectives being met" when deciding to waive a lease stipulation or ROP. Recommendation(s) Change: "The objective of a stipulation must be met before a waiver, exception, or modification would be granted." To: "The objective of a stipulation must be met before a waiver, exception, or modification would be granted. Requirements for granting a lease waiver, exception, or modification of a lease stipulation are written in the description of each lease stipulation where relevant. No waiver, exception, or modification should be granted if no requirements are provided." AND: "Similar to stipulations, the objective of ROP must be met for exceptions, modifications, or waivers to be granted." To: "Similar to stipulations, the objective of ROP must be met for exceptions, modifications, or waivers to be granted. As with stipulations, specific requirements for a waiver, modification, or exception are listed in the ROP. If none are listed, no waiver, exception, or modification should be provided."	Waivers, exceptions, and modifications are necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions. Appropriate stipulations are attached to the lease when the BLM issues it. As part of a lease contract, stipulations are specific to the lease. All oil and gas activity permits issued to a lessee must comply with the lease stipulations appropriate to the activity under review, such as exploratory drilling or production pad construction. A stipulation included in an oil and gas lease could be subject to a waiver, exception, or modification, as appropriate. The objective of a stipulation must be met before a waiver, exception, or modification would be granted. Waivers, exceptions, and modifications are: 1) A waiver—A permanent exemption to a stipulation on a lease; 2) An exception—A one-time exemption to a lease stipulation, determined on a case-by-case basis, or 3) A modification—A change attached to a lease stipulation, either temporarily or for the life of the lease. The BLM Authorized Officer may authorize a modification to a lease stipulation only if the officer determines that the factors leading to the stipulation have changed sufficiently to make the stipulation no longer justified; the proposed operation would still have to meet the objective stated for the stipulation. While the BLM may grant a waiver, exception, or modification of a stipulation through the permitting process, it may also impose additional requirements through permitting terms and conditions to meet the objectives of any stipulation. This would be the case if the BLM Authorized Officer considers that such requirements are warranted to protect the land and resources, in accordance with the BLM's responsibility under relevant laws and regulations. Note that PL 115-97 requires that the BLM authorize ROWs for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or with a NSO stipulation. The Authorized Officer will issue a waiver, exception, or modification to a lease stipulation or ROP only following 30 days of public notice, although this timeframe could change if agreed upon and legally permissible. Moreover, the Authorized Officer must document their decision and rationale for any waiver, exception, or modification in writing.

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Heslep	Alison	-	80164	17	#3 Ch/Sec/Sub-sec 2.3.5 Title Lease Stipulations Comment(s) The draft SEIS notes in subsection 2.3.5 that a BLM Authorized Officer may authorize a modification to a lease stipulation in certain circumstances and that the BLM can grant a waiver, exception, or modification of a stipulation through the permitting process. Recommendation(s) Given the importance of the Coastal Plain to the PCH and the relatively undeveloped nature of the Coastal Plain, the GNWT recommends that the authority for the final review or decision on modifications or waivers be elevated to the director level with consultation with the Fish and Wildlife Service at the same level.	Waivers, exceptions, and modifications are necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions. Appropriate stipulations are attached to the lease when the BLM issues it. As part of a lease contract, stipulations are specific to the lease. All oil and gas activity permits issued to a lessee must comply with the lease stipulations appropriate to the activity under review, such as exploratory drilling or production pad construction. A stipulation included in an oil and gas lease could be subject to a waiver, exception, or modification, as appropriate. The objective of a stipulation must be met before a waiver, exception, or modification would be granted. Waivers, exceptions, and modifications are: 1) A waiver—A permanent exemption to a stipulation on a lease; 2) An exception—A one-time exemption to a lease stipulation, determined on a case-by-case basis, or 3) A modification—A change attached to a lease stipulation, either temporarily or for the life of the lease. The BLM Authorized Officer may authorize a modification to a lease stipulation only if the officer determines that the factors leading to the stipulation have changed sufficiently to make the stipulation no longer justified; the proposed operation would still have to meet the objective stated for the stipulation. While the BLM may grant a waiver, exception, or modification of a stipulation through the permitting process, it may also impose additional requirements through permitting terms and conditions to meet the objectives of any stipulation. This would be the case if the BLM Authorized Officer considers that such requirements are warranted to protect the land and resources, in accordance with the BLM's responsibility under relevant laws and regulations. Note that PL 115-97 requires that the BLM authorize ROWs for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or with a NSO stipulation. The Authorized Officer will issue a waiver, exception, or modification to a lease stipulation or ROP only following 30 days of public notice, although this timeframe could change if agreed upon and legally permissible. Moreover, the Authorized Officer must document their decision and rationale for any waiver, exception, or modification in writing.
Heslep	Alison	-	80164	18	#4 Ch/Sec/Sub-sec 2.3.5 Title Table 2-3. Lease Stipulations and Required Operating Procedures by Action Alternative Comment(s) ROP 36 requires the lease operator to work with affected subsistence communities to minimize impacts on subsistence uses. However, this requirement does not include Canadian communities. Recommendation(s) Add the Gwich'in Tribal Council, and the Inuvialuit Regional Corporation to the list of affected subsistence communities under Standard (a). They can be classified as "Canadian Indigenous governments and Indigenous organizations" as they are not limited to single communities. Within Standard (b), introduce a stipulation requiring applicants to also forward documentation of coordination to the Porcupine Caribou Management Board (PCMB) and/or the International Porcupine Caribou Board (IPCB). Under Standard (e), specifically list the Gwich'in Tribal Council, the Inuvialuit Regional Corporation, and the subsistence user organizations to be consulted under "Community Consultation."	Consultation and coordination with various affected Tribes in Alaska allows for a meaningfully broad range of Tribal input. It would be anticipated that Gwich'in Tribes in Alaska would provide similar input as would Gwich'in Tribes in Canada.
Heslep	Alison	-	80164	19	#5 Ch/Sec/Sub-sec 2.3.5 Title Table 2-3. Lease Stipulations and Required Operating Procedures by Action Alternative Comment(s) Lease stipulation 6 under Alternative D requires that "Sections of the road would be evacuated whenever a large number of caribou (approximately 100 or more) approach the road within 2 miles (May 15 - July 28)". The rationale for a trigger of 100 caribou and a trigger of two miles is not clear. Recommendation(s) The final SEIS should explain how the triggers/thresholds were determined for the mitigation of evacuating sections of the road whenever a large number of caribou approach the road.	Smith and Cameron (1985) found that groups of greater than 100 caribou, common when under insect harassment and attempting to move to insect-relief areas at the coast, have greater difficulty crossing roads and pipelines than smaller groups. There is an increased potential for impacts to caribou as herd numbers increase in the vicinity of roads and therefore, this number is used as a parameter to minimize potential impacts.

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Heslep	Alison	-	80164	20	#6 Ch/Sec/Sub-sec 2.4.3 Title No Waivers, Modifications, or Exceptions Comment(s) In Table 2-3, which details Lease Stipulations and ROPs by Action Alternative, certain Lease Stipulations/ROPs specify conditions for waiving a stipulation/ROP, while others do not. Therefore, the purpose of each stipulation and ROP must be clearly defined to guarantee that objectives are achieved, even if a stipulation or ROP is waived. Recommendation(s) For clarity in waiving lease stipulations or ROPs, the GNWT recommends that the BLM specify that leases should only be waived when the specific requirements for such a waiver are detailed in the description of a particular ROP or stipulation. If the conditions for waiving a lease stipulation/ROP are not explicitly mentioned in Table 2-3, then regulators should not have the authority to waive that lease stipulation/ROP.	Waivers, exceptions, and modifications are necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions. Appropriate stipulations are attached to the lease when the BLM issues it. As part of a lease contract, stipulations are specific to the lease. All oil and gas activity permits issued to a lessee must comply with the lease stipulations appropriate to the activity under review, such as exploratory drilling or production pad construction. A stipulation included in an oil and gas lease could be subject to a waiver, exception, or modification, as appropriate. The objective of a stipulation must be met before a waiver, exception, or modification would be granted. Waivers, exceptions, and modifications are: 1) A waiver—A permanent exemption to a stipulation on a lease; 2) An exception—A one-time exemption to a lease stipulation, determined on a case-by-case basis, or 3) A modification—A change attached to a lease stipulation, either temporarily or for the life of the lease. The BLM Authorized Officer may authorize a modification to a lease stipulation only if the officer determines that the factors leading to the stipulation have changed sufficiently to make the stipulation no longer justified; the proposed operation would still have to meet the objective stated for the stipulation. While the BLM may grant a waiver, exception, or modification of a stipulation through the permitting process, it may also impose additional requirements through permitting terms and conditions to meet the objectives of any stipulation. This would be the case if the BLM Authorized Officer considers that such requirements are warranted to protect the land and resources, in accordance with the BLM's responsibility under relevant laws and regulations. Note that PL 115-97 requires that the BLM authorize ROWs for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or with a NSO stipulation. The Authorized Officer will issue a waiver, exception, or modification to a lease stipulation or ROP only following 30 days of public notice, although this timeframe could change if agreed upon and legally permissible. Moreover, the Authorized Officer must document their decision and rationale for any waiver, exception, or modification in writing.
Heslep	Alison	-	80164	35	#21 Ch/Sec/Sub-sec N/A Title Minimum Acceptable Lease Stipulations and ROPs Comment(s) It is the GNWT's understanding that the BLM is not bound to select the Alternatives outlined in the draft SEIS but could authorize different aspects from each Alternative. The lease stipulations and ROPs associated with Alternative D provide the most protection for polar bears and Porcupine Caribou as compared to the lease stipulations and ROPs in Alternative B and C. Importantly, Alternative D (and C) would only allow seismic exploration in areas of land available for lease sales. The GNWT believes it is important for the stewardship and conservation of species that inhabit both the Arctic National Wildlife Refuge and the NWT that the mitigations provided for under the lease stipulations and ROPs associated with Alternative D, at a minimum, be applied to any future lease. Recommendation(s) If the BLM decides to authorize the land outlined in Alternative B or C for oil and gas lease sales the GNWT recommends that the lease stipulations and ROPs from Alternative D be applied to those lease sales.	The SEIS analyzes a broad range of alternatives with differing stipulations. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Histand	Sarah	-	80342	1	The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, which the Gwich'in Nation relies on for cultural survival and food security. BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Changing migration routes and habitat will likely increase the impacts of any oil and gas activity on the Porcupine herd.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Holleman	Marybeth	-	79514	3	Even under the most protective alternative put forth, "no surface occupancy" stipulations are broad and undefined and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the EIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Hoover	Vicky	-	72934	1	Please develop an alternative that fully protects the coastal plain from future oil leasing. The area is a sacred place for the Gwich'in people who have relied on the Porcupine caribou herd for millennia. Polar bears increasingly rely on the coastal plain's terrestrial denning sites . As in the rest of the Arctic, which is warming faster than the rest of the world, climate change hinders the rhythms of life in the refuge. Expanding oil leasing into the refuge will exacerbate these stresses, and undermine urgent action to address the climate crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Hope	Margaret	-	3130	1	Please develop an alternative that maximally protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a SACRED PLACE FOR THE GWICH'IN PEOPLE who have relied on the herd for millennia. It is VITAL TO POLAR BEARS, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will exacerbate these stresses, cause irreparable harm to this irreplaceable region, and to the millions of birds and other animals that migrate there every summer from around the world, and undermine urgent action to address the climate crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Hubbard	Olivia	University of Colorado Boulder	80088	2	Alternative D is designed to address a deficiency in the National Environmental Policy Act (NEPA) identified by the Secretary. It includes more protective measures and restrictions, emphasizing conservation. The BLM considered reducing the amount of land to be offered for leasing in Alternative D2 to a minimum required by the Tax Act (800,000 acres). However, there is a need to examine more restrictions to protect the environment from oil and gas drilling and to assess whether lease sales beyond the minimum requirement are necessary to gather more information.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Itchoak	Karlin	-	80450	3	while Alternative D provides a start to addressing some of those necessary elements, other critical considerations have been left out, including the following 3 recommendations submitted during the scoping period: 1) further minimizing the acreage available for leasing, 2) including additional stringent and importantly non-waveable stipulations or resource protection developed through government-to-government consultation and incorporating, incorporating, traditional, indigenous knowledge, 3) deferring lease, implementation, and any permitting of exploration or other development activities until certain conditions are met, including but not limited to 1) a formal apology by the President of the United States. to the indigenous people of the Arctic for historical injustices, 2) Co-creation of a plan for future shared stewardship, shared land ownership and Co. Stewardship of the Arctic refuge, 3)free prior and informed consent by indigenous peoples in the impacted area before proceeding with any leasing or permitting implementation.	Alternative D2, a sub-alternative of Alternative D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and analyzes the statutory minimum of 400,000 acres as available for leasing. In developing Alternatives D and D2, more stringent lease stipulations and required operating procedures were analyzed and further clarified USFWS' role in the permitting process with the BLM's Authorized Officer. With the passage of the 2017 Tax Act, Section 20001 of PL-115-97 Congress mandated Secretary of the Interior, acting through the BLM, to establish and administer an oil and gas program and hold two lease sales prior to December 22, 2024. Therefore, the program cannot be further deferred as described in Section 2.4.2. The BLM and USFWS have been and will continue to engage Tribes in meaningful government-to-government consultation in order to provide an opportunity for Tribes to shape the direction of the oil and gas program management activities (see Section 4.3). As the BLM implements the program, it will explore opportunities with Tribes for co-stewardship of the program, per Secretarial Order 3403 and BLM Permanent Instruction Memorandum 2022-011.
Itchoak	Karlin	-	80450	1	The alternatives, as set forth in the draft SEIS, do not grant strong enough protections to the porcupine caribou herd which the Gwich'in Nation relies on for cultural survival and food security. We ask that the agencies properly center indigenous rights in their analysis and any program adopted. The SEIS must thoroughly address and adopt an alternative that minimizes the full suite of cultural, traditional, historical, ecological, spiritual, and other impacts of an oil and gas leasing program on indigenous peoples.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
Itchoak	Karlin	-	80450	2	This alternative must recognize and account for past indigenous land ownership, past and current, indigenous land stewardship and historical and present injustices toward indigenous peoples. The alternative must fully incorporate and create space for traditional, indigenous knowledge, indigenous world views, and future shared stewardship by indigenous peoples.	Tribal coordination and consultation and the incorporation of traditional knowledge is incorporated into multiple lease stipulations and ROPs.
Jones	Craig	-	80405	2	a big heartache that we have is, where does BLM have the right to yank leases that we're already in possession of? I'd like, at some point, somebody to help us understand that.	Not substantive.
JONES-Appalled Expat	Beth	-	40871	1	It's high time for the BLM to develop an effective alternative that fully protects this irreplaceable coastal plain from future oil leasing.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Jorgenson	Janet	-	80336	1	Within the constraints of the Tax Act, there still should be some other less damaging alternative in the SEIS, such as requiring the development to be "roadless", with no or few gravel roads and with supplies delivered on ice roads in the winter. Other options might be allowing leases only adjacent to Pt. Thompson (not stretching all the way east to the Niguanak River) or only offering 400,000 acres for lease in the second sale. Alternative D is preferable to B and C because it spreads a web of infrastructure over less area. There are many impacts beyond just the ground covered by gravel roads and pads, such as interruption of the natural hydrology, introduction of non-native species, road dust and disruptions to wildlife and subsistence activities. Those impacts spread far from the roads, so containing them into a smaller area is preferable. However, I would much rather see no oil leasing in the Arctic Refuge.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Jorgenson	Janet	-	80336	7	ALTERNATIVES There should be a table listing the number of acres and percent of 1002 Area leased under each alternative. Descriptions of alternatives in the Executive Summary don't give this information and I found it difficult to find in the whole document. I found this information (more or less) on p. 3-123 - 126. I didn't find it in a figure or table and had to eye-ball it from the maps. We need to know # of acres to compare the alternatives. It is important to know how large an area would be covered by a web of infrastructure and travel routes. "Holes" between threads of the web are not 'wilderness' or undisturbed. They can get dust, invasive species, and wildlife disturbance over whole area, not just on a road or pad. It is also important because seismic exploration would be allowed only on the leased area, so tundra damage from vehicles would vary greatly between alternatives.	Acreage data for each action alternative is provided in Chapter 2. Regardless of which alternative is selected in the ROD, per Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section."
Jorgenson	Janet	-	80336	4	Lease stipulations: #1, Rivers - Alternative C has 1/2 mile setbacks from more creeks than B. 2 important rivers for wildlife habitat are Niguanak and Carter and setbacks should be added to alternative B for them. It doesn't make sense that part of Alternative D is less protective than C, eg Carter and Marsh get only a 1/4 mile setback in D. #12, 13 and 14 apply only to Alternative D. All three are reasonable and could all be added to the other 2 alternatives, at least with some changes to soften the requirements and provide less protection. For example stipulation 12 is reasonable and already gives operators an 'out' by allowing them to 'design and construct ... to accommodate the thaw subsidence'.	The SEIS analyzes a broad range of alternatives with differing stipulations. The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of balancing the five purposes of the refuge.
Jorgenson	Janet	-	80336	5	Rop 11, Requirement (a): Snow depth and/or SWE requirements. The different wording under each of the 3 alternatives is confusing and makes it hard to compare the three. Why is there a 9" depth rule only under Alternative B? There needs to be information in the SEIS about how snow would be measured and who would do it, as that would make a big difference in how effective the ROP would be. A 9" rule for snow depth should be enforced. Including an option of 3" over the highest tussocks under Alternative B injects too much subjectivity. Someone could come up with some situation where the 3" of snow over some tussocks could be measured but snow depth never reached anywhere near 9".	Each of the three action alternatives for the Draft SEIS contain different wording for snow depth and/or SWE requirements to analyze a range of options and resulting potential impacts on resources. Snow is measured at weather stations managed by the USFWS/USGS and is taken from ground-based measurements in advance of any proposed action requiring it.
Jorgenson	Janet	-	80336	6	ROP 41 - summer tundra travel This says that it is OK to use a vehicle if it is on state summer approved list, or else provide studies to show it is OK. I doubt the state approved list is based on rigorous studies. It says that the ROP is satisfied if they submit the DNR list of summer-approved vehicles. I had thought approval was supposed to be on a case by case basis, which would mean that summer vehicle travel on tundra was not to be done routinely and would need permission each time. This should clarify if they are free to go wherever and whenever they want, once the list is on file.	The AK-DNR off-road tundra vehicle certification qualifies as an acceptable study to meet the requirements of ROP 41; however, it is not the only acceptable study. The AK DNR summer-approved vehicle list is based on actual ground testing of OHV equipped as they would be for a potential proposed action. The State frequently tests and approves/disapproves new vehicles and configurations proposed for off-road tundra use. BLM/USFWS also requires a comprehensive vehicle use list for all projects complete with specs for how they will be outfitted and calculated vehicle ground pressure (in PSI). Occasionally vehicles not on the AK DNR summer-approved list would be proposed and the BLM Authorized Officer would have to evaluate that use on an individual case-by-case basis.
K	PJ	-	79882	2	Even under the most protective alternative put forth, "no surface occupancy" (NSO) stipulations are broad and unclear, with apparent loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Kastel	Diane	-	49288	1	Please develop an alternative that, maximally, protects the Coastal Plain from, future, oil leasing! The area is, vital, calving grounds for the Porcupine caribou herd, a, sacred, place for the Gwich'in people who have relied on the herd for millennia. It is vital to polar bears, which, increasingly, rely on the, terrestrial, maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the Refuge, which is warming faster than the rest of the world!	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Keim	Steve	-	22361	1	The coastal plain is a sacred place to the Gwich'in Nation, and the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program. The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Keim	Steve	-	22361	3	Even with the most protective alternative put forth, "no surface occupancy" (NSO), stipulations are too broad and undefined. There appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Kelly and Family	Lisa Ann	-	25180	1	1) The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Kendall	Perry	-	13190	1	Posthaste we require development of an alternative that maximally protects our coastal plain from egregious future oil leasing. This area is held sacred by the Gwich'in people who have relied on the herd for millennia and a crucial calving grounds for the Porcupine caribou herd too.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Kornstein	Nina	-	56503	1	Please develop an alternative that maximally protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich'in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will not support the wellbeing of this irreplaceable region or the millions of birds and other animals that migrate there every summer from around the world.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Kring	Juli	-	80113	2	Even under the most protective alternative offered, "no surface occupancy" (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Kutschbach Brohl	Lisa	-	79621	2	The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, which the Gwich'in Nation relies on for cultural survival and food security.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
L	Laura	-	33248	3	The "no surface occupancy" (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Lateiner	Ulysses	-	76929	1	Please develop an alternative that maximally protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich'in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. This and all other areas of the Arctic are warming faster than the rest of the world due to climate change. Expanding oil leasing into the refuge will make these stresses worse, cause irreparable damage to this unique region, and harm the millions of birds and other animals that migrate there every summer from around the world. We need more urgent action to address the climate crisis. Additional oil and gas leasing would be completely inconsistent with what is needed, and badly self-defeating.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Latner	Nancy	-	34236	4	The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, which the Gwich'in Nation relies on for cultural survival and food security.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Lee	Brenda	-	30027	1	Even under the most protective alternative put forth, “no surface occupancy” (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as “An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis.” This is consistent with the 2019 Final EIS.
Lemke	Deana	Porcupine Caribou Management Board	80334	7	The PCMB asserts that in order to genuinely reflect these international obligations, the SEIS should have recommended an alternative that made the minimum area required by law (400,000 acres) available for lease. Of the options presented, Alternative D is the most conservative; however, amending Alternative D to reduce the total available area from 765,800 acres to 400,000 acres would align with the full range of options that are available by law. If modifying Alternative D is not an option, an additional option that includes the minimum lease size should be included in the updated SEIS.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Leque	Sally	-	8461	1	Please develop an alternative that maximally protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich’in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will exacerbate these stresses, cause irreparable harm to this irreplaceable region, and to the millions of birds and other animals that migrate there every summer from around the world, and undermine urgent action to address the climate crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Lerner	Kenny	-	61828	1	Under the protective alternatives, loopholes need to be cleaned up. Vague language should more specifically ban all infrastructure and development. Furthermore, the culture of the Gwich’in people should be protected as is their right as a society. Lastly, the changes that Climate Change is bringing about need to be considered when looking at the migration of the Porcupine caribou.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Levitt	Robert	-	19744	1	Please develop an alternative that maximally protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich’in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will exacerbate these stresses, cause irreparable harm to this irreplaceable region, and to the millions of birds and other animals that migrate there every summer from around the world, and undermine urgent action to address the climate crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Lewis	Sherman	-	5382	1	Please develop an alternative that protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich'in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will exacerbate these stresses, cause irreparable harm to this irreplaceable region, and to the millions of birds and other animals that migrate there every summer from around the world, and undermine urgent action to address the climate crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Lewis	Bonnie	-	7460	1	I want you to please develop an alternative that maximally protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich'in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will exacerbate these stresses, cause irreparable harm to this irreplaceable region, and to the millions of birds and other animals that migrate there every summer from around the world, and undermine urgent action to address the climate crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Lish	Christopher	-	79004	1	The Draft SEIS has an added alternative for development consideration, Alternative D, that leans towards conserving wildlife. I appreciate that your Draft SEIS offers a conservation option to ensure higher protections for the Arctic National Wildlife Refuge. However, fragmenting this sensitive habitat with oil pads, roads, gravel mines, workers' camps, seismic drilling and processing facilities that are all necessary for a successful drilling project will rupture the delicate balance of the Arctic tundra and put more than one species on the path to extinction. More must be done. The alternatives presented in the SEIS, including Alternative D, do not go far enough to protect the people, wildlife, and other irreplaceable resources in the Arctic National Wildlife Refuge and must be strengthened. The Draft SEIS fails to truthfully explain what would be lost by opening the Arctic National Wildlife Refuge to oil leasing and development. The conservation option must be strengthened to ensure the area's irreplaceable ecological and cultural values are fully and permanently protected from the threat of oil and gas development.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Lish	Christopher	-	79004	5	- The conservation alternative should limit the leasable area to no more than the minimum needed for any mandatory sale, and not an acre more	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Lish	Christopher	-	79004	4	- Eliminate the numerous loopholes in the so-called conservation alternative that would allow for harmful infrastructure and activities in areas that are identified as "no surface occupancy" (NSO). Even under the most protective alternative put forth, stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must provide maximum protection and be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

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Liskovec	Jim	-	79039	2	I see the way forward, and it's a very simple way. The leasing provisions must be so restrictive that oil companies will not bid on the one remaining lease, because drilling will not be economically viable. In my view there are four important components to the restrictions: • A greatly expanded analysis of the impacts on subsistence hunting by the Gwich'in people. The Gwich'in depend on the migratory caribou and oil development is not compatible. Their centuries-long subsistence way of life is to be admired. Prudhoe Bay had a migratory caribou herd and oil development destroyed it. • Surface occupancy loopholes must be eliminated. • Polar bears den and give birth to cubs on the north slope of the coastal plain. The species is classified as Threatened. Absolutely no disturbance, seismic or above ground, will be tolerated. • And finally, and what I believe is the deal breaker: To satisfy the leasing provision of the 2017 law, of the 1.5 million acres of the coastal plain, only ONE ACRE of development should be offered to be leased. Not one acre more. When the oil companies pass because of this restriction, I propose that the one acre be leased to a partnership of non-profit organizations such the Sierra Club, The Wilderness Society, the National Audubon Society, and others. They would hold the lease in perpetuity and firmly commit to NEVER DRILL. The fee for the lease would be ONE DOLLAR.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Long	Becky	-	33606	9	"No-Surface Occupancy" stipulations for leased tracts are too broad and undefined. They must be well-defined and not waivable in the final EIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
lyman	robert	-	22055	1	I strongly urge you to revise the SEIS to mandate much stronger provisions for the preservation of the Porcupine Caribou Herd, as well as other Wildlife in the Refuge.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Mannchen	Brandt	-	23905	1	Alternatives in the Draft SEIS don't require adequate and strong protection for the Porcupine caribou herd. This herd is what the Gwich'in Nation relies on for cultural survival and food. BLM must look at caribou migration routes and how climate change will affect them.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Mannchen	Brandt	-	23905	2	The "no surface occupancy" (NSO) stipulations are too weak and there are loopholes that allow for infrastructure/development. NSO stipulations, to be protective, must be well-defined and not subject to waivers.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Mantell	Jace	-	80284	4	4. The "no surface occupancy" provisions for infrastructure and development do not appear to be sufficiently defined and could allow loopholes that do not provide adequate protection in leased tracts. They must be better defined and unwaivable in the EIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
McCulley	Alice	Tr'ondëk Hwëch'in	80073	3	Limit the extent of leasing to the minimum amount of land required by law. We acknowledge that PL 115-97 s.20001 requires the sale of at least two leases by December 22, 2027, with each sale being at least 400,000 acres in areas with the highest hydrocarbon potential. However, to meet this legal requirement while upholding the other conservation objectives of ANILCA, there is no viable reason for the BLM to offer any alternative that exceeds this minimum amount of land. We recommend that alternatives B and C reduce the amount of land available for leasing.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
McCulley	Alice	Tr'ondëk Hwëch'in	80073	8	Traditional ecological knowledge (TEK) has been accumulated and verified over lengthy periods of time by people with an intimate knowledge of the area and species under consideration. There appears to be a role for TEK in decision-making related to Alternative D. This consideration for the value of TEK should be incorporated into all action alternatives. Canadian subsistence users have documented substantial amounts of TEK on Porcupine caribou that should be used to improve decision-making processes related to oil and gas development in ANWR.	The text in Alternatives B and C was brought forward from the Draft SEIS with only minimal updates, as appropriate.
McCulley	Alice	Tr'ondëk Hwëch'in	80073	4	Commit to long-term, permanent protection for all areas on the Coastal Plain program area that will not be leased. We understand that long-term permanent protection for the `1002 lands' of ANWR is outside of scope of the draft SEIS; however, pursuing additional protective measures alongside the SEIS process would go a long way to reassure concerned parties of the commitment of the current Administration to protecting and upholding the conservation objectives of ANWR. We also acknowledge and appreciate that under the draft SEIS, seismic exploration activities will not be permitted outside of areas approved for leasing. To take this one step further and acknowledge the input provided during the previous lease nomination period, tracks of land that were removed from consideration during the previous lease sale should also be removed from all alternatives under consideration. We recognize that the slow recovery of arctic vegetation has been taken into consideration by the BLM/USFWS when surface disturbance limits were lowered for alternatives C and D, and more importantly, gravel pits are now included as surface disturbance, and these limits cannot be offset by reclamation activities.	The SEIS must maintain its focus within the published Purpose and Need Statement. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
McCulley	Alice	Tr'ondëk Hwëch'in	80073	9	The draft SEIS spoke to adaptive management, but uncertainty remains in effectiveness in proposed mitigations for the PCH. The BLM and USFWS have failed to provide explicit, evidence-based rationale for key assumptions, nor have these assumptions been clearly linked to proposed mitigations. This lack of transparency makes it difficult to evaluate the risks to the health of the PCH or to subsistence harvest rights of PCH user communities.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Mello	Annette	-	22559	2	As regards the Porcupine caribou herd, the alternatives set forth in the Draft SEIS do not grant strong enough protections to the herd, upon which the Gwich'in Nation relies for cultural survival and food security. BLM should look at the caribou migration route through a lens of climate change and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Mello	Annette	-	22559	1	Also, even under the most protective alternative put forth, “no surface occupancy” (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Metcalf	Virginia	-	74250	1	I respectfully ask that you develop an alternative that permanently protects the coastal plain from future oil leasing. As you know this area is vital calving grounds for the Porcupine caribou herd and a most sacred place for the Gwich'in people who have been sustained and have depended on the herd for thousands of years This ecosystem is vital to polar bears, which increasingly rely on the maternal denning sites it provides.	With the passage of the 2017 Tax Act, Section 20001 of PL-115-97 Congress mandated Secretary of the Interior, acting through the BLM, to establish and administer an oil and gas program for the leasing, development, production, and transportation of oil and gas in and from the Coastal Plain area within the Arctic Refuge. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
Metzler	Glenn	-	70812	1	Please repeal the "Tax Act" provision that opened the Refuge to oil and gas leasing and propose permanent protections through Wilderness designation for the entire Arctic Refuge. Doing so will provide strong protections for the Porcupine caribou herd, a crucial component of the ecosystem and important animal for the local people.	Repealing PL 115-97 is outside the scope of this Leasing SEIS.
Miller	Pamela A	Arctic Audubon Society	80339	1	Oil leasing and development would destroy the intact wild quality of both the coastal plain and adjacent designated Wilderness lands in the Arctic Refuge. The Draft SEIS fails to fully explain what would be lost in the integrity of the whole intact landscape across the Refuge by opening the Arctic Refuge Coastal Plain to oil leasing, exploration, and development. Therefore, we urge better consideration of the No Action alternative and that it also include a full analysis of the recommended permanent protection for the Coastal Plain as designated Wilderness.	The no action alternative does not meet the intent of Section 20001(c)(1) of PL 115-97.
Miller	Pamela A.	-	80396	2	We thank Secretary Haaland and BLM for canceling the AIDEA leases issued under the rushed and legally deficient prior EIS process launched under the Trump administration. We urge better consideration of the no action alternative and a strengthened alternative which would address permanent Coastal Plain protection as designated wilderness.	The no action alternative does not meet the intent of Section 20001(c)(1) of PL 115-97.
Moderow	Andy	-	80454	3	The agency should also strengthen and clarify no surface occupancy, and what that means to make certain that those provisions can be counted on to truly protect lands from infrastructure in decades to come.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Moriarty	Kara	Alaska Oil & Gas Association	79980	20	Alternative B Remains the Associations' Recommended Alternative and Should Be Adopted As the Preferred Alternative. The Draft SEIS states, "[a]ny decision that the BLM makes following the analysis in this Leasing SEIS must be consistent with PL 115-97 and take into consideration all of the Arctic Refuge's purposes set out in Section 303(2)(B) of ANILCA, as amended by Section 20001(b)(2)(B) of PL 115-97."(65) Alternative B allows the opportunity to lease the program area and has the fewest acres with NSO stipulations.(66) As protective measures, Alternative B also provides for Leasing Stipulations and required operating procedures ("ROPs") to avoid, minimize, and mitigate potential adverse environmental impacts.(67) (65) Draft SEIS at § 2.1. (66) See Draft SEIS at § 2.3 Table 2-1. (67) Draft SEIS at § 2.3.5, Table 2-3. Alternatives C and D do not meet the purpose and need as it should be informed by the Section 20001(c)(1) of PL 115-97, that is, to establish and administer a competitive oil and natural gas program for the leasing, development, production, and transportation of oil and natural gas in and from the Coastal Plain. In response to our previous comments, BLM stated that all alternatives are designed to meet the stated Purpose and Need. We encourage the agency to reconsider. For reasons explained more fully below, we believe that restrictions designating certain areas as open or closed to leasing, permitting less than 2,000 acres of surface development through the Coastal Plain, and prohibiting surface infrastructure in sensitive areas do not meet the requirements of the Section 20001(c)(1) of PL 115-97 or the identified Purpose and Need.	The agencies have noted this information.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Moriarty	Kara	Alaska Oil & Gas Association	79980	25	Alternatives C and D allow for analysis of less than 2,000 acres of surface development throughout the Coastal Plain.(79) BLM must review the legal parameters that are clearly stated in the Tax Act and refrain from imposing additional unnecessary and unlawful surface occupancy restrictions. (79) Draft SEIS at § 2.2. The Tax Act requires BLM to authorize "up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities"(80) BLM interprets this 2,000-acre limit on surface occupancy to apply to "all federal land across the Coastal Plain, regardless of whether such land is leased," including "off-lease pipelines or roads authorized by a right-of-way [ROW] grant."(81) The statutory language and legislative history are also clear that Congress directed BLM to authorize development of up to 2,000 surface acres of federal lands separate from and in addition to any federal lands subject to ROWs or easements. (80) Tax Act § 20001(c)(3). (81) Draft SEIS at § 1.9.1. With respect to ROWs and easements, the language of the Tax Act clearly directs that "[t]he Secretary shall issue any rights-of-way or easements across the Coastal Plain for the exploration, development, production, or transportation necessary to carry out this section."(82) Tax Act, Section 20001(c)(3) separately addresses surface occupancy for the separate purposes of "production and support facilities"-which are not within ROWs or easements.(83) (82) Tax Act, § 20001(c)(2) (emphases added). (83) Id. at § 20001(c)(3). This plain statutory language is confirmed by the Joint Explanatory Statement of the Committee of Conference,(84) which makes clear that Congress did not intend for facilities on ROWs or easements to count toward the 2,000-acre limitation: (84) A joint explanatory statement is the most reliable piece of legislative history in ascertaining congressional intent. See McKinney, Richard J. & Sweet, Ellen A., Federal Legislative History Research: A Practitioners' Guide to Compiling the Documents and Sifting for Legislative Intent. (last revised July 2015) ("in a legislative history of a U.S. public law, the greatest weight is usually accorded to the joint explanatory statement in a bill's conference report"). Available at: https://www.lsd.org/federal-legislative-history-guide . The legislation directs the Secretary to issue any necessary rights-of-way or easements across the Coastal Plain for the exploration, development, production, or transportation associated with the oil and gas program. Additionally, the section authorizes the development of up to 2,000 surface acres of federal land on the Coastal Plain.(85) (85) H.R. Rep. No. 115-466, at 675 (2017) (emphasis added). This statement plainly shows that, through the Tax Act, Congress directed BLM to allow development of up to 2,000 surface acres of federal lands in addition to-not inclusive of-any federal lands subject to ROWs or easements. Any future interpretations of this provision regarding future actions under the Coastal Plain Oil and Gas Lease Program should provide for the development of up to 2,000 surface acres of federal land, not including ROWs or easements. The Final SEIS must be modified accordingly to provide for the development of up to 2,000 surface acres of federal land, not including ROWs or easements.	Regardless of which alternative is selected in the ROD, per-Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section."
Moriarty	Kara	Alaska Oil & Gas Association	79980	7	The no surface occupancy ("NSO") restrictions and setbacks contained in the Draft SEIS, especially in Alternative D, are overly broad and inconsistent with the Tax Act and Congress's intent.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Moriarty	Kara	Alaska Oil & Gas Association	79980	8	BLM lacks authority to impose broad occupancy restrictions beyond the clearly stated 2,000 acres limitation the Tax Act establishes. The Act's plain language and legislative history make clear that Congress directed BLM to authorize up to 2,000 surface areas of federal lands separate and in addition to any federal lands subject to rights-of-way or easements.	Per Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section."

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Moriarty	Kara	Alaska Oil & Gas Association	79980	21	As discussed above, the Associations support Alternative B and its corresponding Leasing Stipulations, but believe that the proposed NSO restrictions and setbacks in the Draft SEIS, especially in Alternative D, are overly broad and any updates must ensure consistency with the Tax Act and the intent of Congress. The Tax Act provides no authority for BLM to include alternatives that designate certain areas of the Coastal Plain as open or closed to leasing. Indeed, neither ANILCA nor the Tax Act includes any mechanism or grant of authority for the DOI Secretary to withdraw some or all of the 1002 Area from leasing. Instead, Congress explicitly required the Secretary to offer for lease, in each lease sale, at least "400,000 acres area-wide" and "those areas that have the highest potential for the discovery of hydrocarbons." It required the Secretary to issue "any rights-of-way or easements across the Coastal Plain for the exploration, development, production, or transportation necessary to carry out" Section 20001. Congress set the applicable limit on surface facility development at 2,000 acres,97 a minimal footprint in the approximately 1,563,500-acre Coastal Plain area and the 19.3-million-acre Arctic Refuge-this 2,000 acres amounts to less than 0.128% of the Coastal Plan and approximately 0.010% of the Refuge. Together, these provisions reflect Congress' considered determination of a leasing program that strikes an appropriate balance between development and resource protection. Yet the map of Alternative D makes clear that it would not allow for a competitive leasing program in accordance with the provisions of Section 20001 and transportation would likely be impossible given the imposition of NSO restrictions in the vast majority of the 1002 area.(68) (68) See Draft SEIS map 2-5. While surface protection and mitigation measures can be appropriately considered as the NEPA and permitting processes move forward to review specific on-the-ground development proposals, the NSO stipulations comprise a priori prohibitions on surface use, which Congress did not authorize, and prevent the Secretary from carrying out its statutory obligations to offer for lease the areas with the highest potential for the discovery of hydrocarbons. Sweeping limitations on development never considered by Congress upset the intended balance and compromise the oil and natural gas program Congress established. In short, Congress has already spoken to surface development by limiting production and support facilities to 2,000 acres. Congress did not authorize BLM to further limit surface occupancy and to undermine its obligations with respect to leasing of those areas with the highest hydrocarbon potential and issuance of rights-of-way and easements in support of such leasing.	All alternatives are designed to balance the five purposes of the refuge. Some development is still permitted in No Surface-Occupancy areas. No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Moriarty	Kara	Alaska Oil & Gas Association	79980	23	The NSO restrictions and extensive setbacks are inconsistent with the Section 20001(c)(1) of PL 115-97's requirement that BLM establish an "area-wide" program that includes those areas that have the highest potential for the discovery of hydrocarbons. The limited and dated subsurface data currently available does not allow for identification of the areas with the highest potential for hydrocarbon development. To carry out the intent of Congress, BLM must adopt a leasing approach that first allows for early area-wide access before considering area closures or limits on surface occupancy. BLM must recognize the importance of a thorough seismic acquisition and exploratory drilling period by lease holders in order to identify the areas with highest potential for hydrocarbon development, consistent with congressional intent. Moreover, as discussed below, the consequences of the approach set forth in the Draft SEIS defeats the purpose and need of the leasing program. To carry out Congress's intent, BLM must adopt an approach that allows for up-to-date geological and geophysical data acquisition and initial exploratory drilling. BLM should impose development-related mitigation measures based on site-specific information, and only after the areas with the highest potential for hydrocarbon development have been identified. This plain intent of the Section 20001(c)(1) of PL 115-97 is further confirmed by the requirement that BLM manage the Coastal Plain program "in a manner similar to the administration of lease sales" for the NPR-A, "including [its] regulations,"(75) which must be interpreted as limited to the regulations in effect at the time of the congressional action. BLM's inclusion of strenuous NSO stipulations in the ROD conflicts with this mandate. Neither the NPRPA nor its current implementing regulations, established an NSO regime across large swaths of the NPR-A. Rather, the NPRPA provides specific protection of surface areas where needed.(76) Further, BLM's NPRPA regulations contemplate that special stipulations may be set forth in the notice of sale, but "[a]dditional stipulations needed to protect surface resources and special areas may be imposed at the time the surface use plan and permit to drill are approved."(77) Consistent with these regulations, the NPR-A Leasing EIS did not include broad NSO restrictions on lands offered for leasing. (78) (75) Id. § 20001(b)(3). (76) The NPRPA rescinded previous withdrawals for the Reserve under 42 U.S.C. § 6502 "for the purposes of the oil and gas leasing program authorized under this section" and instead provided for protection of surface areas where needed. See 42 U.S.C. § 6506(a)(e); See, e.g., Id. § 6504(a) (exploration in certain areas "shall be conducted in a manner which will assure the maximum protection of such surface values to the extent consistent with the requirements of this Act for the exploration of the reserve"); Id. § 6506(b) (authorizing Secretary to impose such conditions, restrictions, and prohibitions as deemed necessary or appropriate to mitigate reasonably foreseeable and significantly adverse effects on the surface resources of the NPR-A). (77) 43 C.F.R. § 3131.3 (emphasis added); See also § 3162.3-1(c) (Lessee must "submit to the authorized officer for approval an Application for Permit to Drill for each well. No drilling operations, nor surface disturbance preliminary thereto, may be commenced prior to the authorized officer's approval of the permit."). (78) The NPR-A EIS included "Special Areas" related to specific resources on lease program lands, but was explicit that a Special Area designation "does not itself impose specific protections, but instead highlights areas and resources for which the BLM will extend 'maximum protection' consistent with exploration of the Reserve." BLM, National Petroleum Reserve-Alaska Final Integrated Activity Plan/Environmental Impact Statement at ES-4 (June 2020); See also N. Alaska Env'tl. Ctr. v. Kempthorne, 457 F.3d 969, 976 (9th Cir. 2006) (describing NPR-A leases as "more like the 'non NSO leases'" which "authorize the lessees to undertake development subject to government regulation of surface disturbing activities").	All alternatives are designed to balance the five purposes of the refuge. Some development is still permitted in No Surface-Occupancy areas. No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

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Moriarty	Kara	Alaska Oil & Gas Association	79980	24	As BLM's currently existing NPRPA regulations recognize, it is premature to make broad assumptions about the appropriateness of surface occupancy across large swaths of land, particularly when the Tax Act very clearly mandates area-wide leasing of the areas with the highest potential for hydrocarbon discovery. Any Final SEIS should remove these overly broad NSO restrictions and setbacks to ensure that the contemplated lease sales are administered in a manner consistent with the Tax Act. BLM should make determinations on the appropriateness of surface occupancy restrictions as compared to other successfully deployed mitigation measures based on site-specific analyses of reservoir targets, the best available technology, and site-specific wildlife studies, as is done in the NPR-A.	All alternatives are designed to balance the five purposes of the refuge. Some development is still permitted in No Surface-Occupancy areas. No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Moriarty	Kara	Alaska Oil & Gas Association	79980	26	Leasing Stipulations Clearly written and enforceable Leasing Stipulations are a key to the successful development of a robust oil and natural gas leasing program. Leasing stipulations can be designed to protect one resource and also have positive benefits in protecting additional resources as well. Overall, as before, we acknowledge the basis for and support most of the 14 Leasing Stipulations. In our comments on BLM's 2018 Draft EIS, we identified concerns relating to the NSO stipulations and broad setbacks as contemplated under Leasing Stipulations 1-5, 7, and 9 being inconsistent with the plain language of the Section 20001(c)(1) of PL 115-97. These issues mostly related to their potential application under Alternatives C, D1, and D2 and, with the selection of Alternative B in the Final EIS and record of decision, became less concerning yet still problematic. Here, given that BLM has not identified a preferred alternative, we reiterate the concerns that we raised previously for BLM's continued consideration and resolution. For example, Leasing Stipulation 10 for Alternative D would prohibit surface occupancy within 3 miles of the southern and eastern boundaries of the Coastal Plain near the Mollie Beattie Wilderness Area. This presumptive setback is clearly inconsistent with the Section 20001(c)(1) of PL 115-97 and purpose and need as identified. In its place, additional NEPA review for case-specific projects can consider additional measures if needed. We also continue to ask for greater clarity in Leasing Stipulation 1 on the justification between the required setback distances and protection of terrain, habitat or floodplain features, and that setbacks should not be arbitrary but instead based on the presence of such features. Setbacks affecting pipeline crossings should include clearly provided scenarios under which crossings would be permitted, thereby providing permittees greater certainty and not requiring waivers. For additional clarity, we recommended separating frameworks relating to river deltas from rivers and streams.	All alternatives are designed to balance the five purposes of the refuge. Some development is still permitted in No Surface-Occupancy areas. No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis."
Moriarty	Kara	Alaska Oil & Gas Association	79980	28	-ROP 6(a) - EPA's minimum air monitoring standards are difficult to implement without existing infrastructure. We request that the language of this ROP be modified to limit site-specific air monitoring at locations without existing infrastructure to extraordinary circumstances in which existing baseline concentrations are known to be materially different from regional measurements. This modification is appropriate because over 30 years of baseline data collection shows uniform baseline background conditions at or below measurement thresholds across the Coastal Plain, except in cases of localized wind-blown fugitive dust and wild land fires.	Language has not been modified. The requirement for a minimum of 1 year of ambient air quality data may be necessary for site-specific project analysis.
Moriarty	Kara	Alaska Oil & Gas Association	79980	29	-ROP 6(c) - To remove ambiguity, this ROP should be revised to clarify the scope of indirect emissions sources or to allow indirect sources to be addressed qualitatively, consistent with the most current practice on the North Slope.	The requirement for quantitative analysis of the inventory would provide more site-specific information, and therefore may be required if deemed necessary by the Authorized Officer.
Moriarty	Kara	Alaska Oil & Gas Association	79980	30	-ROP 7 - While not applying to Alternative B, we want to again emphasize the need to remove this ROP if considered for other alternatives. It requires a proponent of a permanent oil and natural gas development to design and implement a monitoring study of contaminants in locally used subsistence foods. Potential contaminants from oil and gas operations are already prevented from entering subsistence foods due to the applicability of numerous monitoring and release prevention requirements. And requiring this type of sampling can be intrusive on the users and likely to be met with skepticism. If deemed necessary on a case-by-case basis, this type of sampling is best conducted by a regulatory agency.	No change. ROP 7 was carried forward into Alternative D2. The Authorized Officer and Tribal governments may coordinate with other appropriate entities (which could include regulatory agencies) before approving the operator's study design.
Moriarty	Kara	Alaska Oil & Gas Association	79980	31	-ROP 8 - We have significant concerns with ROP 8 and recommend its removal. This ROP would prevent the withdrawal of unfrozen water from springs, rivers, and streams during winter. This ROP would have significant adverse impacts on oil and natural gas operations, particularly given that rivers and streams comprise most of the water resource available in the lease areas. Moreover, the ROP is unnecessary and inconsistent with proven existing regulation of water withdrawals on the North Slope. BLM should consider modifying this ROP to be similar to stipulations protecting anadromous fish, including the use of fish screens and limitations on the amount of liquid water under ice that could be removed.	No change. As outlined in Chapter 3, Section 3.2.10, water availability is limited within the Program Area and conservation during winter months is essential to balance the purposes of the Refuge amongst each other, namely: 1) To conserve fish and wildlife populations and habitats in their natural diversity, and 2) To ensure water quality and necessary quantity within the Refuge.
Moriarty	Kara	Alaska Oil & Gas Association	79980	32	-ROP 9 - Based on our experience with this ROP in NPR-A where it is contentious, we recommend deleting paragraph (d) and adding a clause to paragraphs (a) and (b) that allows up to 20% total lake volume to be used when both ice and water are being withdrawn. This would be protective of hydrology and habitat, and consistent with state regulations.	Suggested edits have been applied to Alternative D2.
Moriarty	Kara	Alaska Oil & Gas Association	79980	33	-ROP 10 - This ROP for Alternative B appears to have been modified and we appreciate the clarifications provided especially per our comments to treat polar bears and ice seals separately with their own species-specific requirements. We also had concerns for Alternative D language requiring a sound source verification which we believe would be difficult to attain in shallow waters and not provide reliable data. Instead, we recommended that adding language that operators "will work closely with regulators to ensure that mitigation measures are developed that are consistent with the Marine Mammal Protection Act and agency marine mammal guidelines, and take into account practicability, site-specific information, and project activity details."	Suggested edits have been applied to Alternative D2.

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Moriarty	Kara	Alaska Oil & Gas Association	79980	34	-ROP 11(e) - This component of the ROP prohibits ice roads from using the same route each year and states that an undefined offset may be required to avoid portions of previous ice road routes. This is not warranted because, as recognized in the GMT2 Supplemental EIS, "[a] study by Yokel et al. (2007) suggests that seasonal ice roads and pads constructed within the same footprint each year do not have additive effects over years."119 Moreover, constructing an ice road in the same location as subsequent years is considered best practice and may be necessary to avoid difficult terrain, archaeological sites or sensitive environmental resources.	The ROP 11 requirement does not require an offset from year to year and it is anticipated that an offset of ice features would not occur from one season to the subsequent season. However, the BLM Authorized Officer would have flexibility to relocate these features in future years should it be determined to be environmentally preferable.
Moriarty	Kara	Alaska Oil & Gas Association	79980	35	-ROP 34 - This ROP would require minimum flight altitudes over certain areas and we ask for clarification to accommodate the need to fly lower for some required activities (e.g., archaeological clearance, spill response equipment staging and demobilization). In addition, rather than providing for "possible suspension of all flights" for "disturbance determined to be unacceptable," this ROP should be modified to provide for "adjustments, including redirection, modified scheduling, or temporary suspension of specific flights...." Finally, the ROP's provision that takeoffs and landings to support oil and natural gas operations would be limited "to the maximum extent possible" should be revised to limit takeoffs and landings "to the extent practicable and consistent with prudent operation of facilities."	ROP 34 does include flexibility to accommodate different altitudes of flight based on the activity - see part d. Suggested edits have been applied to Alternative D2 ROP 34 - see part b.
Morrison	David	-	25387	2	Even under the most protective alternative put forth, "no surface occupancy" (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Mower	Amy	-	36036	3	The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, which the Gwich'in Nation relies on for cultural survival and food security.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Mower	Amy	-	36036	5	Even under the most protective alternative put forth, "no surface occupancy" stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the EIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Naples	Jean	-	19894	1	It is crucial for you to please develop an alternative that maximally protects the coastal plain from future destructive fossil fuel leasing and drilling. This area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich'in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Naples	Jean	-	25931	2	It is crucial for you to please develop an alternative that maximally protects the coastal plain from future destructive fossil fuel leasing and drilling. This area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich'in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Naples	Jean	-	66912	1	I strongly urge you to please continue to oppose development in the coastal plain, and I call on the Biden administration to do more to firmly protect the Arctic. It is crucial for you to please develop an alternative that maximally protects the coastal plain from future destructive fossil fuel leasing and drilling. This area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich'in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Naples	Jean	-	25931	1	Even under the most protective alternative put forth, "no surface occupancy" (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	4	Development of a 400,000-acre alternative that would be located nearly entirely within the High Hydrocarbon potential area.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	55	Many of the recommendations and submissions made by the Tribes as cooperating agencies in the development of this SEIS document, and in particular the development of action alternatives, were roundly ignored by the agencies. While the Tribes participated in good faith in the alternatives development workshop, many of their recommendations to protect the Coastal Plain were ignored. As described in Section VI below, the Tribes reiterate many of their previous suggestions. The agencies must implement these suggestions in order for the SEIS analysis to comply with the NEPA mandate that the agencies consider a reasonable range of alternatives. Most importantly, as detailed in their comments on the preliminary draft SEIS, the agencies must consider a new, more protective alternative that consists of leasing the congressionally mandated minimum 400,000 acres.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	56	Finally, as described in the draft SEIS, the agencies inappropriately eliminated important alternatives from detailed analysis, such as deferred leasing and no waivers, modifications, and exceptions.(174) Moreover, the agencies have inappropriately eliminated-without any explanation or disclosure of the option in the draft SEIS-the Tribes' suggested alternative of making available for lease the 400,000 minimum acres, as required by Congress. (174) Draft SEIS at 2-88.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	58	All alternatives in the SEIS should consider both the leasing program and the Refuge-protective statutes.(191) While no alternative that allows for oil and gas exploration and development is acceptable to the Tribes, all alternatives analyzed in the NEPA process must be fully protective of all purposes of the Arctic Refuge, as a matter of law. (191) City of Carmel-by-the-Sea v. U.S. Dep't of Transportation, 123 F.3d 1142, 1155 (9th Cir. 1997) (explaining that because the purpose and need statement drives the alternatives development, alternatives that meet the purpose and need should be considered in the analysis).	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	59	Finally, in developing the SEIS, the BLM must also incorporate the information, analysis, and findings from other statutorily mandated review processes, such as Section 106 of the NHPA and Section 810 of ANILCA. As the Tribes explained throughout the 2018-2020 process and in their lawsuit against the agency, BLM must first undertake the NHPA Section 106 and ANILCA Section 810 processes prior to beginning alternatives development. The Tribes remind the BLM that the NHPA Section 106 process must be initiated early in the planning process so that it can inform the development, selection, and evaluation of the program alternatives,(192) and that failure to initiate the NHPA Section 106 process to-date is a glaring legal deficiency. (192) 36 C.F.R. § 800.1(c). The Tribes have reviewed the action alternatives in draft SEIS and the 2019 Final EIS and find that, in some respects, the 2019 Final EIS proposed a broader range of alternatives than is currently found in the draft SEIS. Substantively, the 2019 Final EIS Alternative D2 consisted of a leasing option wherein no acreage would be offered subject only to standard terms and conditions. All acreage offered for lease under the 2019 Final EIS Alternative D2 consisted of either No Surface Occupancy, Controlled Surface Use, or Time Limitation lands. The draft SEIS, meanwhile, fails to contain a similar action alternative wherein no acreage would be offered that would be subject only to standard terms and conditions.	The BLM will comply with all applicable laws, including ANILCA, for oil and gas activities. Appendix F is the final ANILCA 810 analysis for the SEIS. A Programmatic Agreement (PA) for Section 106 compliance was developed during the 2019 Final EIS and remains in effect for the SEIS.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	60	One practical implication of the SEIS containing only three action alternatives, as currently formulated, is that the agency is unlawfully limiting its options to tilt towards alternatives that are less protective of caribou habitat while also failing to encompass the full range of alternatives that meet the mandates of both the Tax Act and ANILCA. As the draft SEIS states, Alternative D has the most acreage included under No Surface Occupancy (NSO) and No Leasing requirements. Although this initially appears more protective, acreage alone is not the only important criterion to protect caribou. Large areas without any development likely are the most beneficial to caribou and Alternative D fails to provide this. Even though areas of Controlled Surface Use, Time Limitation and Standard Terms and Conditions lands are reduced in size in Alternative D as compared to the other Draft SEIS action alternatives, they are scattered as islands in a sea of NSOs.(194) Additionally, NSO is a misnomer as lease holders can have road and pipeline access across those lands to their lease holdings.(195) Thus, islands of oil development could lead to a maze of transportation corridors through NSO lands. Comparatively, the 2019 Final EIS Alternative D2 contained no such islands in a sea of NSO, instead opting for a broad swath of strictly NSO lands. (194) See Draft SEIS App. A, at Map 2-5. (195) Draft SEIS at 3-218 ("Although only 39,500 acres are available for leasing and allow surface occupancy, it is likely that roads will cross areas with NSO restrictions to access leased areas."). To remedy this, the Tribes reiterate their suggestion, that the agencies should develop a fourth action alternative in the Final EIS that is more protective than the alternatives found in the draft SEIS.	The Final SEIS range of alternatives has been updated based on public input requesting maximum protection for key resources and new updated information. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale, all of which would be open for seismic exploration.

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Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	61	To rectify the draft SEIS's failure to comply with NEPA's mandate for a reasonable range of alternatives, the agencies should develop an Alternative E for inclusion in the final SEIS. BLM and USFWS should work closely with the Tribes and other cooperating agencies to develop an Alternative E to meet NEPA's mandate for a reasonable range of alternatives. At a minimum, such a new Alternative E should contain the following: -The total area available for lease sale be set at the Tax Act's minimum of 400,000 acres. -The total area available for lease sale should consist only of No Surface Occupancy, Controlled Surface Use, and Time Limitation lands. Like the 2019 Final EIS Alternative D2, this alternative should not include lands subject only to Standard Terms and Conditions. -Lease Stipulations and ROPs that are more protective than draft SEIS Alternative D. -A Lease Stipulation intended to ensure that any lessee/operator awarded leases first proves up such things as bonding, insurance, expertise and experience with similar developments, and intent to develop. A new Lease Stipulation that ensures that those bidding can carry out project development from initial project planning through project abandonment and reclamation, including adequate expertise and experience with similar developments.	The Final SEIS range of alternatives has been updated based on public input requesting protection for key resources and new updated information. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale, all of which would be open for seismic exploration. Bonding would be determined and required with the specific oil and gas authorization (43 CFR 3134). An operator will submit an application for permit to drill that must be reviewed and approved by the Authorized Officer that provides project planning details.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	43	Include the details contained in Appendix S of the 2019 Final ETS entitled "Tracking and Enforcement of Facility Acreage" in the final SEIS document. The two key paragraphs read: "Required Operating Procedure (ROP) 33 requires operators to submit to the BLM Authorized Officer detailed GTS data for all oil and gas facilities within 6 months of construction completion. The BLM intends to use the data to calculate the amount of acreage covered by production and support facilities. Tt would continually and cumulatively track the acreages for all such facilities on federal lands throughout the Coastal Plain. BLM authorizations for constructing production and support facilities would contain acreage limits for those facilities. At no time would the BLM issue authorizations that allow the cumulative 2,000-acre limit to be exceeded. During field inspections and when reviewing the GTS data submitted under ROP 33, the BLM would determine whether the facility footprints are within the authorized acreage limits. Tf an operator exceeds its limits, the BLM would take appropriate action to promptly bring the operator back into compliance." (136) (136) 2019 Final ETS App. S, at S-8. The final paragraph on reclamation does not apply to the SEIS as it allows subtraction of reclaimed acreage from the 2,000-acre limit. -Similarly, the Tribes urge BLM/USFWS to include a new Lease Stipulation, shown as New LS 17 in these comments, covering Maximum Acreage for Alternatives C (1,500) and Alternative D (1,100). These acreages would be tracked and enforced as described in Appendix S, above.	See Appendix T, Response to Comments, header Tracking and Enforcement of Facility Acreage for additional information on how the BLM would track the 2,000-acre ceiling. Further Appendix B, (Section B.6.1 Surface Development Limitations) outlines that the SEIS contains the BLM's interpretation of Section 20001(c)(3) of PL 115-97, which states the following: "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section. For the purposes of impact analysis, BLM employs that interpretation as an assumption in each of the action alternatives analyzed in the SEIS." Therefore, although the reasonably foreseeable development scenario include differing potential acreages of impact, the upper limit of 2,000 acres for all project development in the Program Area is set by the Public Law 115-97.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	62	As an initial matter, as to the use of Traditional Knowledge, Alternative D contains several important Leasing Stipulations and ROPs based on cooperating agency inputs such as the caribou protection measures in LS 6 and ROPs 23 and 23.1 and the requirements to involve Tribal governments in areas where these governments have substantive knowledge. However, Tribal government consultation requirements and utilization of Traditional Knowledge are not consistently included in Alternative D. The Tribes understand that BLM/USFWS is considering future co-management agreements with Tribes; if that is the case, more details need to be provided in upcoming government-to-government consultations with the Tribes. Notably, because the Tax Act requires that "the Secretary shall manage the oil and gas program on the Coastal Plain in a manner similar to the administration of lease sales under the Naval Petroleum Reserves Production Act of 1976,"(196) the Tribes urge BLM and USFWS to review all LSs and ROPs contained in the National Petroleum Reserve Alaska's Integrated Activity Plan,(197) and to include in the final SEIS those provisions and language that would increase environmental protections of the Coastal Plain which are not currently covered by the LSs and ROPs in the draft SEIS. For example, the Integrated Activity Plan's ROP A-11 on contamination of subsistence foods has no analogue for Alternative B (ROP 7 only applies to Alternatives C and D). Additionally, see New ROP 3.1, below. (196) Pub. L. No. 115-97, § 20001(b)(3), 131 Stat 2236 (2017). (197) BLM, National Petroleum Reserve in Alaska Integrated Activity Plan Record of Decision (April 2022), https://eplanning.blm.gov/public_projects/117408/200284263/20058238/250064420/2022_NPRA_IAP_ROD_508.p df .	The agencies have noted this information.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	63	LS or ROP # LS9 Alternative D Change Needed Alt. D's Requirement/Standard should include only the first sentence of Alternative C, "(NSO) Exploratory well drill pads, seismic activities [as noted above], production well drill pads, or CPFs for oil or gas would not be permitted within 2 miles inland of the coastline." DELETE the current Requirement/Standard language in Alt. D. Rationale To protect the sensitive coastal areas which are important for waterfowl, marine mammals, caribou, polar bears, cultural resources, etc., there should be no exceptions allowing for oil or gas exploration (including seismic activities) or production infrastructure in this region near the coastline.	Waivers, exceptions, and modifications are necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions. Appropriate stipulations are attached to the lease when the BLM issues it. As part of a lease contract, stipulations are specific to the lease. All oil and gas activity permits issued to a lessee must comply with the lease stipulations appropriate to the activity under review, such as exploratory drilling or production pad construction. A stipulation included in an oil and gas lease could be subject to a waiver, exception, or modification, as appropriate. The objective of a stipulation must be met before a waiver, exception, or modification would be granted. Waivers, exceptions, and modifications are: 1) A waiver—A permanent exemption to a stipulation on a lease; 2) An exception—A one-time exemption to a lease stipulation, determined on a case-by-case basis, or 3) A modification—A change attached to a lease stipulation, either temporarily or for the life of the lease. The BLM Authorized Officer may authorize a modification to a lease stipulation only if the officer determines that the factors leading to the stipulation have changed sufficiently to make the stipulation no longer justified; the proposed operation would still have to meet the objective stated for the stipulation. While the BLM may grant a waiver, exception, or modification of a stipulation through the permitting process, it may also impose additional requirements through permitting terms and conditions to meet the objectives of any stipulation. This would be the case if the BLM Authorized Officer considers that such requirements are warranted to protect the land and resources, in accordance with the BLM's responsibility under relevant laws and regulations. Note that PL 115-97 requires that the BLM authorize ROWs for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or with a NSO stipulation. The Authorized Officer will issue a waiver, exception, or modification to a lease stipulation or ROP only following 30 days of public notice, although this timeframe could change if agreed upon and legally permissible. Moreover, the Authorized Officer must document their decision and rationale for any waiver, exception, or modification in writing.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	64	LS or ROP # LS 9 Alternative B,C,D Change Needed ADD LS 4 Requirement/Standard a. from Alternative D. Rationale This provision allows a barge landing and a seawater treatment plant and other non-exploration and non-production infrastructure to be constructed in the Coastal Area with appropriate approvals and consultations.	Suggested language adopted in Alternative D2.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	65	LS or ROP # LS 12 Alternative B, C Change Needed Objective and Requirement/Standard from Alt. D needs to apply to Alts. B and C. Rationale This lease stipulation is critical to prevent infrastructure failures resulting from inevitable climate change during the infrastructure's lifetimes.	The text in Alternatives B and C was brought forward from the Final EIS with only minimal updates, as appropriate. However, Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	66	LS or ROP # LS 13 Alternative B, C Change Needed Objective and Requirement/Standard from Alt. D needs to apply to Alts. B and C. Rationale This lease stipulation is critical to prevent non-compact and redundant infrastructure that would adversely impact wildlife, habitats, and subsistence.	The text in Alternatives B and C was brought forward from the Final EIS with only minimal updates, as appropriate. However, Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	67	LS or ROP # LS 13 Alternative D Change Needed ADD Requirement/Standard c.: "Prohibit development in or near sensitive ecological areas such as coastal regions, wetter riparian areas, and rare landscape features." Rationale ADD Requirement/Standard c.: "Prohibit development in or near sensitive ecological areas such as coastal regions, wetter riparian areas, and rare landscape features."	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	68	LS or ROP # LS 13 Alternative B, C, D Change Needed Tribal governments need a role in reviewing and approving Master Development Plans. Rationale Tribal governments are the experts on the environment in the program. area and they can contribute to avoiding and reducing impacts.	Suggested language adopted in Alternative D2.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	69	LS or ROP # LS 14 Alternative B,C Change Needed Objective and Requirement/Standard from Alt. D needs to apply to Alts. B and C. Rationale All alternatives should protect denning polar bears.	The text in Alternatives B and C was brought forward from the Draft SEIS with only minimal updates, as appropriate. However, Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	70	LS or ROP # LS 14 Alternative B, C, D Change Needed ADD language that ensures this Lease Stipulation applies to seismic activities. Rationale Because seismic activities take place in winter, it is critical that this lease stipulation applies to protect polar bears in their dens.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	71	LS or ROP # New LS 15 Alternative C,D Change Needed ADD "Lease Stipulation 15 - Seismic Objective: Limit the impacts of seismic activities to areas available for lease sale. Requirement/Standard: (CSU) Seismic exploration may occur in areas available for lease sale in accordance with LS 4, LS 9, LS 14, ROP 2, ROP 10, ROP 11, ROP 14, ROP 37, and other applicable ROPs that are non-specific to seismic." Rationale This lease stipulation would prevent adverse impacts from seismic activities in no lease areas.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	72	LS or ROP # New LS 16 Alternative B, C, D Change Needed ADD "Lease Stipulation 16 - Eligible Bidder Objective: Ensure that lease bidders and joint bidders have the financial and technical capabilities to develop oil and gas projects on the coastal plain. Requirement/Standard: Bidders and joint bidders must have adequate financial resources to cover project development, bonding, and insurance. Bidders and joint bidders also must have a previous record of successful oil and gas development, production, and processing under Arctic conditions at the scale needed for operations on the Coastal Plain." Rationale This lease stipulation ensures that those bidding can carry out project development from initial project planning through project abandonment and reclamation.	Per 43 CFR 3132.1- Who may hold a lease: Leases issued pursuant to this subpart may be held only by: (a) Citizens and nationals of the United States; (b) Aliens lawfully admitted for permanent residence in the United States as defined in 8 U.S.C. 1101(a)(20); (c) Private, public or municipal corporations organized under the laws of the United States or of any State or of the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa or any of its territories; or (d) Associations of such citizens, nationals, resident aliens or private, public or municipal corporations. This recommendation has not been adopted into the SEIS because the determination of whether a bidder may hold a lease is outside the scope of the SEIS analysis.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	73	LS or ROP # New LS 17 Alternative C, D Change Needed ADD "Lease Stipulation 17 - Maximum Acreage Objective: Limit overall habitat disturbance. Requirement/Standard: Infrastructure acreage cannot exceed 1,500 acres for Alternative C, 1,100 acres for Alternative D." Rationale Rounding upward and codifying the acres disturbed by infrastructure while still meeting the Tax Act's requirements and NEPA's requirement for a reasonable range of alternatives.	Limiting development to anything less than 2000 acres would not meet the requirements of the Section 20001(c)(1) of PL 115-97.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	74	LS or ROP # ROP 3 Alternative B, C, D Change Needed Tribal governments need a role in reviewing and approving comprehensive waste management plans. Rationale Tribal governments are the experts on the environment in the program area and they can contribute to avoiding and reducing impacts.	ROP 3 does not cover waste management. However, the inclusion of local traditional knowledge expertise has been added to the Requirement/Standard of ROP 2 in Alternative D2.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	75	LS or ROP # New ROP 3.1 Alternative B, C, D Change Needed ADD Objective: Ensure pipeline integrity. Requirement/Standard: All pipelines shall be designed, constructed, and operated under [a BLM Authorized Officer]-approved Integrity Management plan that is specific to the product transported and shall be constructed to accommodate the best available technology for detecting and preventing corrosion or mechanical defects. Rationale This ROP, similar to ROP E-4 of the National Petroleum Reserve Alaska's Integrated Activity Plan (2022), would address a gap in the draft SEIS that could result in pipeline-related contamination and other pipeline problems.	Under the directives of Section 20001(c)(1) of PL 115-97, a lease does grant the lessee certain rights to drill for and extract oil and gas subject to further environmental review and reasonable regulation, including applicable laws, terms, conditions, and stipulations of the lease. Pipeline design, location, etc. will be analyzed during project specific NEPA for future oil and gas activities when proposed.

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Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	76	LS or ROP # ROP 7 Alternative B, C Change Needed Requirement/Standard from Alt. D on contamination of subsistence foods needs to apply to Alts. B and C. The Tribes strongly support the ROP in Alt. D. Rationale All alternatives should prevent contamination of subsistence foods. As stated in Alt. D, "[t]he study would identify the level of contaminants in subsistence foods before the proposed permanent oil and gas development and would monitor the level of these contaminants throughout the operation and abandonment phases... the BLM Authorized Officer may require changes in the operator's processes to reduce or eliminate emissions of the contaminant."	The text in Alternatives B and C was brought forward from the Draft SEIS with only minimal updates, as appropriate. However, Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	77	LS or ROP # ROP 8 Alternative B, C, D Change Needed Tribal governments need a role in reviewing and approving water modeling and monitoring plans. Rationale Tribal governments are the experts on the environment in the program area and can contribute to avoiding and reducing impacts.	Affected Tribes will be consulted as appropriate during the processing of applications for oil and gas activities. The inclusion of local traditional knowledge expertise has been added to the Requirement/Standard of ROP 8 in Alternative D2.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	78	LS or ROP # ROP 9 Alternative B, C, D Change Needed Tribal governments need a role in reviewing and approving water withdrawal locations and timing. Rationale Tribal governments are the experts on the fish community, and connectivity to other lakes or streams and adjacent bird nesting habitat in the program area, and they can contribute to avoiding and reducing impacts. Also, clarify who would be using Traditional Knowledge and how they would determine if it's available.	Affected Tribes will be consulted as appropriate during the processing of applications for oil and gas activities. The inclusion of local traditional knowledge expertise is was already present in ROP 9 Alternative D. Alternative D2, a sub-alternative of D, carries forward the language suggested from Alternative D.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	79	LS or ROP # ROP 9 Alternative B, C, D Change Needed ADD required sampling of lakes for fish every five years. Rationale ROP 9 currently is inadequate because it does not require fish sampling yet it requires actions related to the types of fish present. Additionally, fish need to be resampled periodically as the types of fish present may change due to climate change	ROP 22, in Alternative D2 has adopted requirements for sampling of fish where stream crossing is are channelized.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	80	LS or ROP # ROP 11 Alternative B, C, D Change Needed Tribal governments need to be part of the seismic operations and winter overland travel monitoring teams. Rationale Tribal governments are the experts on winter travel and identifying sensitive areas during winter.	Affected Tribes will be consulted as appropriate during the processing of applications for oil and gas activities. The inclusion of local traditional knowledge expertise ad been adopted in ROP 11 of Alternative D2.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	81	LS or ROP # ROP 14 Alternative B, C, D Change Needed Traditional Knowledge must be included for each alternative AND the Requirement/Standard must clarify who is to consult with whom on including Traditional Knowledge. Rationale Traditional Knowledge on fish overwintering is essential to prevent damage from seismic surveys.	The text in Alternatives B and C was brought forward from the Draft SEIS with only minimal updates, as appropriate. The requirements and standards across all alternatives were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	82	LS or ROP # ROP 19 Alternative B, C, D Change Needed Traditional Knowledge needs to inform water quality, wildlife diversity, populations, and habitats. Rationale Tribal governments are the experts on the environment in the project area.	The inclusion of local traditional knowledge expertise ad been adopted in ROP 19 of Alternative D2.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	83	LS or ROP # ROP 20 Alternative B, C, D Change Needed Traditional Knowledge needs to inform fish passage data along with protection and access to subsistence resources AND Tribal governments need to be part of the development and coordination of monitoring programs. Rationale Tribal governments are the experts on the environment and their members are the ones subsisting.	The inclusion of local traditional knowledge expertise has been added to the Requirement/Standard of ROP 20 in Alternative D2.

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Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	84	LS or ROP # ROP 21 Alternative B, C, D Change Needed ADD thermal protection requirements (e.g., minimum thickness to prevent permafrost degradation) for future mining pads, airstrips, and roads. Rationale As discussed in Chapter 3, p. 3-97, future infrastructure would need to be designed to address a warmer climate's potential impacts on permafrost. ROP 21 needs to include a requirement to address design changes necessitated by a warming climate.	The inclusion of thermal protection measures would be considered when project-specific activities are proposed.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	85	LS or ROP # ROP 22 Alternative B, C, D Change Needed Clarify who is determining the availability of Traditional Knowledge of fish, erosion, natural drainage, ice-jams, aufeis, wetlands, floodplains, and stream flows. Rationale Tribal governments are the experts on the environment in the project area.	The inclusion of local traditional knowledge expertise has been added to the Requirement/Standard of ROP 20 in Alternative D2.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	86	LS or ROP # ROP 23.1 Alternative D Change Needed ADD after e. ii., "iii. Aircraft use plan". Rationale ROP 34 requires an "Aircraft use plan." That plan needs to meet the requirements of ROP 23.1 e. and should be listed here.	Alternative D2 ROP 23.1 has a had a reference to ROP 34 added.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	87	LS or ROP # ROP 24 Alternative B, C, D Change Needed ADD after "storage," "maintenance," in d. Rationale Sod/overburden must be maintained for successful reuse.	Suggested language adopted in Alternative D2
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	88	LS or ROP # ROP 24 Alternative B, C Change Needed Requirement/Standard from Alt. D f. needs to apply to Alts. B and C AND Requirement/Standard from Alt. D e. needs to apply to Alt. B. Rationale All alternatives should protect raptor nesting habitat and nesting raptors, and all alternatives should prevent contamination of constructed water storage reservoirs.	The text in Alternatives B and C was brought forward from the Draft SEIS with only minimal updates, as appropriate. The requirements and standards across all alternatives were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	89	LS or ROP # ROP 24 Alternative B, C, D Change Needed Tribal governments need to be part of the mapping and surveying of raptor nesting sites and Traditional Knowledge needs to inform these efforts. Rationale Tribal governments are bird experts.	Suggested language adopted in Alternative D2
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	90	LS or ROP # ROP 25 Alternative B, C, D Change Needed Traditional Knowledge needs to inform this ROP. The annual report needs to go to Tribal Governments for review. Rationale Tribal governments are bird experts.	Language adopted in Alternative B stating that the report would be made available to local traditional knowledge expert upon request. This requirement carries into Alternatives C and D and is adopted into Alternative D2
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	91	LS or ROP # ROP 27 Alternative B, C, D Change Needed Traditional Knowledge needs to inform this ROP. Rationale Tribal governments are experts on the environment.	Suggested language adopted in Alternative D2
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	92	LS or ROP # ROP 28 Alternative B, C, D Change Needed Clarify who will incorporate Traditional Knowledge into this ROP and how they would determine its availability. Current use of passive sentences make this ROP unenforceable. Rationale As acknowledged in Alt. D, Traditional Knowledge of the area needs to be incorporated into facility construction decisions.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed.

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Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	93	LS or ROP # ROP 28 Alternative B, C Change Needed Requirement/Standard language on "ice rich soils and locations of yedoma deposits" needs to be included in Alts. B and C. Rationale All alternatives need to prevent infrastructure failures from ice rich soils and yedoma deposits. As stated on p. 3-53, " Because of the presence of ice-rich permafrost, about one third of the Coastal Plain has the potential for thaw settlement of 16 to 98 feet (Jorgenson et al. 2015)."	Alternative D2 has adopted additional language related to ice-rich soils and yedoma deposits
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	94	LS or ROP # ROPs 29 and 29.1 Alternative B, C Change Needed As was done for Alt. D, protection of cultural and paleontological resources needs to be separated in Alts. B and C. Rationale Separating cultural and paleontological resources provides the proper focus for each resource.	The text in Alternatives B and C was brought forward from the Draft SEIS with only minimal updates, as appropriate. The requirements and standards across all alternatives were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	95	LS or ROP # ROP 30 Alternative D Change Needed ROP 24's requirements do not address everything in Alt. B's Objective and Requirement/Standard. Alt. D should be no less stringent than Alt. B. Rationale Alt. D needs to be strengthened to minimize the loss of nesting habitat for cliff-nesting raptors.	Lease stipulations and required operating procedures have been cross-referenced for consistency
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	96	LS or ROP # ROP 30 Alternative B, C, D Change Needed Traditional Knowledge needs to be part of the hydrological study. Rationale Tribal governments are experts on the environment.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	97	LS or ROP # ROP 32 Alternative B, C, D Change Needed Traditional Knowledge needs to inform this ROP. Tribal governments need to be part of the nest surveys, evaluation of activities, and development of trainings. Rationale Tribal governments are experts on eiders.	Language adopted in Alternative D2 stating that the survey results would be made available to the NSB upon request.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	98	LS or ROP # ROP 35 Alternative B, C, D Change Needed Tribal Governments need to be part of the review of abandonment and reclamation plans. Rationale Tribal governments are experts on the environment.	Language adopted in Alternative D2 stating that the plan would be made available to the NSB upon request.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	99	LS or ROP # ROP 40 Alternative B, C, D Change Needed ADD a requirement to evaluate personnel who have undergone training. Rationale Training alone is not enough. Personnel undergoing training need to be evaluated to ensure the training has been effective.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed. Before- and after-training evaluations are not practical.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	100	LS or ROP # ROP 41 Alternative B, C, D Change Needed Traditional Knowledge needs to inform this ROP. Rationale Tribal governments are the experts on the environment and their citizens are the ones subsisting so they know when subsistence activities occur.	Tribal governments are already included in this ROP
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	101	LS or ROP # ROP 44 Alternative B, C, D Change Needed Traditional Knowledge needs to inform this ROP. Rationale Tribal Governments need a role in the sensitive plant surveys and in review of the resulting applications for development. Tribal governments are experts on the environment.	The inclusion of local traditional knowledge expertise has been added to the Requirement/Standard of ROP 44 in Alternative D2.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	102	LS or ROP # ROP 45 Alternative B, C, D Change Needed Traditional Knowledge needs to inform this ROP. Rationale Tribal Governments need a role in the sensitive species surveys and in review of the resulting applications for development. Tribal governments are experts on the environment.	The inclusion of local traditional knowledge expertise has been added to the Requirement/Standard of ROP 45 in Alternative D2.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	103	The draft SEIS contains virtually no changes to the LSs and ROPs for Alternative B (Alternative B in the FETS) and Alternative C (Alternative D1 in the FETS; limiting seismic to the area available for lease sale is the one significant change). The lack of changes to Alternatives B and C's LSs and ROPs is unacceptable for the following reasons: -The FETS had "multiple legal deficiencies"(198) including the "failure to adequately analyze a reasonable range of alternatives."(199) The SEIS's Alternatives B and C's LSs and ROPs, which are the basis for the SEIS's comparative analyses, should have been updated and they were not. (198) Draft SEIS at 1-1. (199) Id. -The LS and ROP language in the draft SEIS's Alternatives B and C do not meet the stated objectives. For example, whenever the word "minimize" is used in the objective, there should be a non-subjective understanding of what "minimize" means that applies consistently to all alternatives. For example, part of LS 1's objective for each of the alternatives is to "[m]inimize the disruption of natural flow patterns and changes to water quality." The requirements and standards of Alternatives B, C, and D, however, include different setback limits and different rivers where the setbacks would apply. -There are objectives and requirements/standards that apply only to some of the action alternatives, e.g., LSs 12, 13, and 14, and ROP 7 covers subsistence food contamination. The SEIS needs to eliminate its use of passive voice in its requirements and standards so it will be clear who will carry out actions.	The text in Alternatives B and C was brought forward from the Draft SEIS with only minimal updates, as appropriate. The requirements and standards across all alternatives were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	104	The Tribes strongly support Alternative D's AMP details including ROP 23.1 c., "Development of an accessible and comprehensive data repository" and d., an "Annual monitoring and evaluation program." A key component that should be included would ensure that the AMP Steering Committee has access to technical expertise on how other agencies and co-management boards use adaptive management to deal with industrial development and migratory tundra caribou. Additionally, LSs 6, 7, and 8 rely on kernel analysis to represent concentrated caribou calving and post-calving (i.e., >40% of years where the 95% kernel overlaps). There is nothing magic about the 40% figure, however. The main problem is that the higher percentage of overlapping distributions, the smaller the area of the ">40% of years" polygon becomes. If BLM and USFWS insist on using 40%, there is a need to restrict the SEIS analysis to only years when there was significant calving in the program area.	The analysis has been updated to reflect the updated data and information made available during the SEIS development process.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	106	The objective of LSs should be to protect the most critical calving habitats in the program area, including considering distribution shifts predicted due to climate change. Severson et al. (2021)(201) predicts a higher reliance by caribou on the program area in general and a much higher reliance on the High and Moderate Hydrocarbon potential zones. When this type of concentrated caribou calving and post-calving analysis is used, if it includes years when late snowmelt prevents calving in the program area, the analysis diminishes the importance of calving and post-calving areas within the program area. (201) Ibid.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
nguyen	alice	-	26407	2	The SEIS must protect ALL designated critical habitat for polar bears and ensure that the Agreement on the Conservation of the Porcupine Caribou Herd is honored.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
nguyen	alice	-	26407	1	If current law makes that option unavailable, then BLM must adopt the most protective option (no surface occupancy) with modifications to ensure strong conservation. The draft SEIS's NSO option contains broad and undefined stipulations and loopholes that would allow for infrastructure and development. NSO must be updated with well-defined and unwaivable protections.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Not Provided	Not Provided	-	23835	1	You need to pass permanent protections through Wilderness designation for the entire 19.2 million-acre Arctic Refuge.	The SEIS review does not allow for permanent protection due to the Section 20001(c)(1) of PL 115-97 provision that directs the BLM to "administer an Oil and Gas Leasing Program on the Coastal Plain.
Not Provided	Not Provided	-	28987	1	The draft SEIS must acknowledge the cultural harm to the Gwich'in nation by the oil and gas leasing program, establish strong protections for the Porcupine caribou herd, and eliminate loopholes which allow for development.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Not Provided	Not Provided	-	80325	3	PROTECTIONS THAT APPLY IN SELECT BIOLOGICALLY SENSITIVE AREAS Objective: Minimize the disruption of natural flow patterns and changes to water quality; the disruption of natural functions resulting from the loss or change to vegetative and physical characteristics of floodplain and riparian areas, springs, and aufeis; the loss of spawning, rearing, or overwintering fish habitat; the loss of cultural and paleontological resources; the loss of raptor habitat; impacts on subsistence cabins and campsites; and the disruption of subsistence activities. Requirement/Standard: (NSO) Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited in the streambed and within the described setback distances outlined below, from the southern boundary of the Coastal Plain to the stream mouth. For streams that are entirely in the Coastal Plain, the setback extends to the head of the stream, as identified in the National Hydrography Dataset. Essential pipelines and road crossings would be permitted through setback areas in accordance with Section 20001(c)(2) of PL 115-97, which requires issuance of rights-of-way or easements across the Coastal Plain, including access to private land used in support of the federal oil and gas leasing program, for the exploration, development, production, or transportation necessary to carry out Section 20001. Gravel mines could be permitted in setback areas. Setbacks may not be practical in river deltas; in these situations, an exception may be granted by the Authorized Officer if the operator can demonstrate: (1) there are no practical alternatives to locating facilities in these areas; (2) the proposed actions would maintain or enhance resource functions; and (3) permanent facilities are designed to withstand a 100-year flood. a. Canning River: from the western boundary of the Coastal Plain to 1 mile east of the eastern edge of the active floodplain b. Hulahula River: 1 mile in all directions from the active floodplain c. Aichilik River: 1 mile from the eastern edge of the Coastal Plain boundary d. Okpilak River: 1 mile from the banks' ordinary high-water mark e. Jago River: 1 mile from the banks' ordinary high-water mark f. The following rivers and creeks will have a 0.5- mile setback from the banks' ordinary high- water mark: i. Sadlerochit River ii. Tamayariak River iii. Okerokovik River iv. Katakturuk River v. Marsh Creek	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B in the 2019 Final EIS. The language included in the comment "...including access to private land used in support of the federal oil and gas leasing program..." was determined to be inconsistent with the provisions of 20001(c)(3) of PL 115-97 and therefore, was not carried forward into the SEIS range of alternatives. These remaining proposed text has been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	4	Lease Stipulation 2-Canning River Delta and Lakes Objective: Protect and minimize adverse effects on the water quality, quantity, and diversity of fish and wildlife habitats and populations, subsistence resources, and cultural resources; protect and minimize the disruption of natural flow patterns and changes to water quality, the disruption of natural functions resulting from the loss or change to vegetation and physical characteristics of floodplain and riparian areas; the loss of passage, spawning, rearing, or overwintering habitat for fish; the loss of cultural and paleontological resources; and adverse effects to migratory birds.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B in the 2019 Final EIS. The language included in the comment "...including access to private land used in support of the federal oil and gas leasing program..." was determined to be inconsistent with the provisions of 20001(c)(3) of PL 115-97 and therefore, was not carried forward into the SEIS range of alternatives. These remaining proposed text has been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	5	Lease Stipulation 3-Springs/Aufeus Objective: Protect the water quality, quantity, and diversity of fish and wildlife habitats and populations associated with springs and aufeis across the Coastal Plain. River systems with springs provide year- round habitat and host the most diverse and largest populations of fish, aquatic invertebrates, and wildlife; they are associated with major subsistence activity and cultural resources. An aufeis is a unique feature associated with perennial springs. It helps sustain river flow during summer and provides insect relief for caribou. Because the subsurface flow paths to perennial springs are unknown and could be disturbed by drilling, use buffer areas around the major perennial springs that support fish populations in which no leasing is permitted. Requirement/Standard: Before drilling, the lessee/operator/permittee would conduct studies to ensure drilling would not disrupt flow to or from the perennial springs and waste injection wells will not contaminate any perennial springs. Study plans would be developed in consultation with the BLM, USFWS, and other agencies, as appropriate.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	6	Lease Stipulation 4-Nearshore marine, lagoon, and barrier island habitats of the Southern Beaufort Sea within the boundary of the Arctic Refuge (Map 2-2 and Map 2-4) Objective: Protect fish and wildlife habitat, including that for waterfowl and shorebirds, caribou insect relief, marine mammals, and polar bear summer and winter coastal habitat; preserve air and water quality; and minimize impacts on subsistence activities, recreation, historic travel routes, and cultural resources in the nearshore marine area. Requirement/Standard: (NSO) Exploratory well drill pads, production well drill pads, or a CPF for oil or gas would not be permitted in nearshore marine waters, lagoons, or barrier islands within the boundaries of the Coastal Plain. a. The BLM Authorized Officer may approve infrastructure for oil and gas activities necessary to be located in these critical and sensitive habitats, such as barge landing, docks, spill response staging and storage areas, and pipelines. b. Before conducting open water activities, the lessee/operator/contractor would consult with the Alaska Eskimo Whaling Commission, the NSB, and local whaling captains' associations to minimize impacts on subsistence whaling and other subsistence activities of the communities of the North Slope. In a case in which the BLM authorizes permanent oil and gas infrastructure in the nearshore marine area, the lessee/operator/contractor would develop and implement an impact and conflict avoidance and monitoring plan. This would be used to assess, minimize, and mitigate the effects of the infrastructure and its use on these nearshore marine area habitats and their use by wildlife and people, including the following: i. Design and construct facilities to minimize impacts on subsistence uses, travel corridors, and seasonally concentrated fish and wildlife resources. ii. Daily operations, including use of support vehicles, watercraft, and aircraft, alone or in combination with other past, present, and reasonably foreseeable activities, would be conducted to minimize impacts on subsistence and other public uses, travel corridors, and seasonally concentrated fish and wildlife resources. The location of oil and gas facilities, including artificial islands, platforms, associated pipelines, ice or other roads, and bridges or causeways, would be sited and constructed to not pose a hazard to public navigation, using traditional high-use subsistence-related travel routes into and through the major coastal lagoons and bays, as identified by the community of Kaktovik and the NSB. iii. Operators would be responsible for developing comprehensive prevention and response plans, including Oil Discharge Prevention and Contingency Plans and Spill Prevention, Control, and Countermeasure plans and maintain adequate oil spill response capability to effectively respond during periods of ice, broken ice, or open water, based on the statutes, regulations, and guidelines of the USFWS, EPA, Alaska Department of Environmental Conservation (ADEC), and the Bureau of Safety and Environmental Enforcement (BSEE), as well as ROPs, stipulations, and policy guidelines of the BLM.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	7	Lease Stipulation 5-Coastal Polar Bear Denning River Habitat Objective: Minimize disturbance to denning polar bears, and disturbance or alteration of key river and creek maternal denning habitat areas. Requirement/Standard: Comply with ESA and Marine Mammal Protection Act (MMPA) requirements.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	8	Lease Stipulation 6-Caribou Summer Habitat Note: All lands in the Arctic Refuge Coastal Plain are recognized as habitat of the PCH and CAH and would be managed to allow for unhindered movement of caribou through the area. Objective: Minimize disturbance and hindrance of caribou or alteration of caribou movements. Requirement/Standard: See ROP 23.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	9	Lease Stipulation 7-Porcupine Caribou Primary Calving Habitat Area (Map 2-2) Note: PCH primary calving habitat area was defined as the area used for calving (based on annual 95 percent contours calculated using kernel density estimation of parturient female caribou locations May 26-June 10) during more than 40 percent of the years surveyed. Objective: Minimize disturbance and hindrance of caribou or alteration of their movements in the south-southeast portion of the Coastal Plain, which has been identified as important caribou habitat during calving. Requirement/Standard: (TL) Construction activities using heavy equipment, excluding drilling from existing production pads, would be suspended in the PCH primary calving habitat area from May 20 through June 20. These areas encompass approximately 721,200 acres. If caribou arrive on the Coastal Plain before May 20, construction activities using heavy equipment would be suspended. The lessee shall submit with the development proposal a stop work plan that considers this, and any other mitigation related to caribou early arrival. The intent of this latter requirement is to provide flexibility to adapt to changing climate conditions that may occur during the life of fields in the region. The Authorized Officer may waive this stipulation if the operator, through coordination with appropriate federal, state, and local regulatory agencies can demonstrate calving is not occurring in the lease area; or may grant an exception if the operator can demonstrate their action would not hinder caribou or alter their movements. a. The following ground and air traffic restrictions would apply to permanent oil and gas- related roads in the areas and time periods indicated: i. Within the calving habitat area, from May 20 through June 20, traffic speed shall not exceed 15 miles per hour when caribou are within 0.5 mile of the road. Additional strategies may include limiting trips and using convoys and different vehicle types, to the extent practicable. The lessee shall submit with the development proposal a vehicle use plan that considers these and any other mitigation. The plan shall include a vehicle-use monitoring plan. The BLM Authorized Officer would require adjustments if resulting disturbance is determined to be unacceptable. a. Major equipment, materials, and supplies to be used at oil and gas work sites in the calving habitat area should be stockpiled prior to the period of May 20 through June 20 to minimize road traffic during that period. ii. Operators of aircraft used for permitted activities would maintain an altitude of at least 1,500 feet above ground level (except for takeoffs and landings) over caribou calving range, unless doing so would endanger human life or violate safe flying practices. See Required Operating Procedure 34 for additional conditions.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	10	Lease Stipulation 8-Porcupine Caribou Post- Calving Habitat Area Note: The PCH post-calving area was defined as the area used by female caribou (based on annual 95 percent contours calculated using kernel density estimation of female caribou locations June 11-30) during more than 40 percent of the years surveyed. Objective: To protect key surface resources and subsistence resources/activities from permanent oil and gas development and associated activities in areas used by caribou during post-calving and insect-relief periods. Requirement/Standard: See ROP 23.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	11	Lease Stipulation 9-Coastal Area Objective: Protect nearshore marine waters, lagoons, barrier islands, coastlines, and their value as fish and wildlife habitat, including for waterfowl, shorebirds, and marine mammals; minimize the hindrance or alteration of caribou movement in caribou coastal insect-relief areas; minimize hindrance or alteration of polar bear use and movement in coastal habitats; protect and minimize disturbance from oil and gas activities to nearshore marine habitats for polar bears and seals; prevent loss and alteration of important coastal bird habitat; and prevent impacts on nearshore marine subsistence resources and activities. Requirement/Standard: Before beginning exploration or development within 2 miles inland of the coastline, the lessee/operator/contractor would develop and implement an impact and conflict avoidance and monitoring plan to assess, minimize, and mitigate the effects of the infrastructure and its use on these coastal habitats and their use by wildlife and people. Operators would be responsible for developing comprehensive prevention and response plans, including Oil Discharge Prevention and Contingency Plans and spill prevention, control, and countermeasure plans and maintain adequate oil spill response capability to effectively respond during periods of broken ice or open water, based on the statutes, regulations, and guidelines of the EPA, ADEC, and the BSEE, as well as ROPs, stipulations, and policy guidelines of the BLM.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	12	Lease Stipulation 10 Objective: Ensure Native allotment owners maintain control over use of their land. Requirement/Standard: Use of the surface of Native allotments for the construction and maintenance of improvements is prohibited unless written consent is obtained from the allotment owner.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	13	Required Operating Procedure 1 Objective: Protect public health, safety, and the environment by disposing of solid and waste and garbage, in accordance with applicable federal, State, and local laws and regulations. Requirement/Standard: Areas of operation would be left clean of all debris.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	14	Required Operating Procedure 2 Objective: Minimize impacts on the environment from nonhazardous and hazardous waste generation. Encourage continuous environmental improvement. Protect the health and safety of oil and gas field workers, local communities, Coastal Plain subsistence users, Coastal Plain recreationists, and the general public. Avoid human-caused changes in predator populations. Minimize attracting predators, particularly bears, to human use areas. Requirement/Standard: The lessee/operator/contractor would prepare and implement a comprehensive waste management plan for all phases of exploration, development, and production, including seismic activities. The plan would include methods and procedures to use bear resistant containers for all waste materials and classes. The plan would be submitted to the BLM Authorized Officer for approval, in consultation with federal, State, and NSB regulatory and resource agencies, as appropriate (based on agency legal authority and jurisdictional responsibility), as part of a plan of operations or other similar permit application. Management decisions affecting waste generation would be addressed in the following order of priority: (1) prevention and reduction, (2) recycling, (3) treatment, and (4) disposal. The plan would consider and take into account the following requirements: a. Methods to avoid attracting wildlife to food and garbage: The plan would identify precautions that are to be taken to avoid attracting wildlife to food and garbage. The use of bear-resistant containers for all waste would be required. b. Disposal of rotting waste: Requirements prohibit burying garbage. Lessees/operators/contractors would have a written procedure to ensure that rotting waste would be handled and disposed of in a manner that prevents the attraction of wildlife. All rotting waste would be incinerated, backhauled, or composted in a manner approved by the BLM Authorized Officer. All solid waste, including incinerator ash, would be disposed of in an approved waste-disposal facility, in accordance with EPA and ADEC regulations and procedures. Burying human waste is prohibited, except as authorized by the BLM Authorized Officer. The use of bear-resistant containers for all waste would be required. c. Disposal of pumpable waste products: Except as specifically provided, the BLM requires that all pumpable solid, liquid, and sludge waste be disposed of by injection, in accordance with the applicable regulations and procedures. On-pad temporary muds and cuttings storage, as approved by the ADEC, would be allowed as necessary to facilitate annular injection and backhaul operations. d. Disposal of wastewater and domestic wastewater: The BLM prohibits wastewater discharges or disposal of domestic wastewater into bodies of fresh, estuarine, and marine water, including wetlands, unless authorized by an Alaska Pollutant Discharge Elimination System (APDES) or State permit. e. Prevention of the release of poly- and perfluoroalkyl substances: At facilities where fire-fighting foam is required, use fluorine-free foam unless other state or federal regulations require aqueous film-forming foam (AFFF) use. If AFFF use is required, contain, collect, treat, and properly dispose of all runoff, wastewater from training events, and, to the greatest extent possible, from any emergency response events. All discharges must be reported to the ADEC Spill Response Division, Contaminated Sites Program. Measures should also be taken to fully inform workers/trainees of the potential health risks of fluorinated foams and to specify appropriate personal protective equipment to limit exposure during training and use. Training events shall be conducted in lined areas or basins to prevent the release of poly- and perfluoroalkyl substances associated with AFFF.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	15	Required Operating Procedure 3 Objective: Minimize the impact of contaminants from refueling operations on fish, wildlife, and the environment. Requirement/Standard: Refueling equipment within 100 feet of the active floodplain of any waterbody is prohibited. Fuel storage stations would be located at least 100 feet from any waterbody, except for small caches (up to 210 gallons) for motor boats, float planes, and ski planes, and for small equipment, such as portable generators and water pumps. The BLM Authorized Officer may allow storage and operations at areas closer than the stated distances if properly designed and maintained to account for local hydrologic conditions.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	16	Required Operating Procedure 4 Objective: Minimize conflicts from the interaction between humans and bears during oil and gas activities. Requirement/Standard: - Implement policies and procedures to conduct activities in a manner that minimizes adverse impacts on polar bears, their habitat, and their availability for subsistence uses. - Implement adaptive management practices, such as temporal or spatial activity restrictions, in response to the presence of polar bears or polar bears engaged in a biologically significant activity, must be used to avoid interactions with and minimize impacts to them and their availability for subsistence uses. - Cooperate with the USFWS and other designated federal, state, and local agencies to monitor and mitigate the impacts of Industry activities on polar bears. - Designate trained and qualified personnel to monitor for the presence of polar bears, initiate mitigation measures, and monitor, record, and report the effects of Industry activities on polar bears. - Provide polar bear awareness training to personnel. - Contact affected subsistence communities and hunter organizations to discuss potential conflicts. - Polar bears: The lessee/operator/contractor, as a part of lease operation planning, would prepare and implement polar bear-interaction plans to minimize conflicts between polar bears and humans. These polar bear interaction plans would be developed in consultation with and approved by the USFWS and the ADFG. The plans would include specific measures identified by the USFWS for petroleum activities on the Coastal Plain, which may include updated measures and/or may include similar measures identified in the current USFWS Incidental Take Regulations (81 CFR 52318; § 18.128) that have been promulgated and applied to petroleum activities to the west of the Coastal Plain. If the USFWS issues Incidental Take Regulations for petroleum activities in the Coastal Plain, those would be followed instead. These plans must include: - The type of activity and where and when the activity will occur (i.e., a plan of operation); - A food, waste, and other "bear attractants" management plan; - Personnel training policies, procedures, and materials; - Site-specific polar bear interaction risk evaluation and mitigation measures; - Polar bear avoidance and encounter procedures; and - Polar bear observation and reporting procedures. - Grizzly bears: The lessee/operator/contractor would prepare and implement a grizzly bear interaction plan as necessary, in consultation with and approved by the ADFG.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	17	Required Operating Procedure 5 Objective: Reduce air quality impacts. Requirement/Standard: All oil and gas operations (vehicles and equipment) that burn diesel fuels must use ultra-low sulfur diesel, as defined by the EPA.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	18	Required Operating Procedure 6 Objective: Prevent unnecessary or undue degradation of the air and lands and protect health. Requirement/Standard: a. All projects and permitted uses will comply with all applicable National and State Ambient Air Quality Standards (NAAQS/AAQs) and ensure Air Quality Related Values (AQRVs) are protected under the Clean Air Act, or other applicable statutes. b. Prior to initiation of a NEPA analysis for an application to develop a CPF, production pad/well, airstrip, road, gas compressor station, or other potential air pollutant emission source (hereafter called project), the BLM Authorized Officer may require the project proponent to provide a minimum of 1 year of baseline ambient air monitoring data for pollutants of concern, as determined by the BLM. This would apply if no representative air monitoring data are available for the project area or if existing representative ambient air monitoring data are insufficient, incomplete, or do not meet minimum air monitoring standards set by the ADEC or the EPA. If the BLM determines that baseline monitoring is required, this pre-analysis data must meet ADEC and EPA air monitoring standards and cover the year before the submittal. Pre-project monitoring may not be appropriate where the life of the project is less than 1 year. c. For an application to develop a CPF, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source: i. The project proponent shall prepare and submit for BLM approval an emissions inventory that includes quantified emissions of regulated air pollutants from all direct and indirect sources related to the proposed project, including reasonably foreseeable air pollutant emissions of criteria air pollutants, volatile organic compounds (VOCs), hazardous air pollutants, and GHGs estimated for each year for the life of the project. The BLM uses this estimated emissions inventory to identify pollutants of concern and to determine the appropriate form of air analysis to be conducted for the proposed project. ii. The BLM may require air quality modeling for purposes of analyzing project direct, indirect, or cumulative impacts on air quality. The BLM may require air quality modeling depending on: 1. the magnitude of potential air emissions from the project; 2. proximity to a federally mandated Class I area; 3. proximity to a population center; 4. location within or proximity to a nonattainment or maintenance area; 5. meteorological or geographic conditions; 6. existing air quality conditions; 7. magnitude of existing development in the area; or 8. issues identified during the NEPA process. The BLM will determine the information required for a project-specific modeling analysis through the development of a modeling protocol for each analysis. The BLM will consult with appropriate federal (including federal land managers), State, and/or local agencies regarding modeling to inform its modeling decision and avoid duplication of effort. The modeling shall compare predicted impacts to all applicable local, State, and federal air quality standards and increments, as well as other scientifically defensible significance thresholds (such as impacts on air quality related values, incremental cancer risks, etc.). iii. The BLM may require the proponent to provide an emissions reduction plan that includes a detailed description of operator-committed measures to reduce project-related air pollutant emissions, including, but not limited to, criteria pollutants, GHGs, heavy metals, mercury, and fugitive dust. d. Air monitoring or air modeling reports will be provided to the BLM; federal land managers; federal, state, local community, or Tribal governments; and other interested parties, as appropriate. e. The BLM may require monitoring for the life of the project depending on: i. the magnitude of potential air emissions from the project; ii. proximity to a federally mandated Class I area; iii. proximity to a population center; iv. location within or proximity to a nonattainment or maintenance area; v. meteorological or geographic conditions; vi. existing air quality conditions; vii. magnitude of existing development in the area; or issues identified during the NEPA process. f. If ambient air monitoring or air quality modeling indicates that project-related emissions cause or contribute to impacts, unnecessary or undue degradation of the lands, exceedances of the NAAQS/AAQs, or fails to protect health (either directly or through use of subsistence resources), then the BLM may require changes or additional emission control strategies. To reduce or minimize emissions from proposed activities, in order to comply with the NAAQS/AAQs and/or minimize impacts to AQRVs, the BLM shall consider air quality mitigation measure(s) within its authority in addition to regulatory requirements and proponent-committed emission reduction measures, and also for emission sources not otherwise regulated by ADEC or EPA. Mitigation measures will be analyzed through the appropriate form of NEPA analysis to determine effectiveness. The BLM will consult with the federal land managers and other appropriate federal, state, and/or local agencies to determine potential mitigation options for any predicted significant impacts from the proposed project development. g. Publicly available reports on air quality baseline monitoring, emissions inventory, and modeling results developed in conformance with this ROP shall be provided by the project proponent to the NSB and to local communities and tribes in a timely manner.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	19	Required Operating Procedure 8 Objective: In flowing waters (rivers, springs, and streams), ensure water of sufficient quality and quantity to conserve fish, waterbirds, and wildlife populations and habitats in their natural diversity. Requirement/Standard: Withdrawal of unfrozen water from springs, rivers and streams during winter (onset of freeze-up to break-up) is prohibited. The removal of ice aggregate from grounded areas 4 feet deep or less may be authorized from rivers on a site-specific basis.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	20	Required Operating Procedure 9 Objective: Maintain natural hydrologic regimes in soils surrounding lakes and ponds, and maintain populations of, and adequate habitat for, fish, birds, and aquatic invertebrates. Requirement/Standard: Withdrawal of unfrozen water from lakes and the removal of ice aggregate from grounded areas 4 feet deep or less during winter (onset of freeze-up to break- up) and withdrawal of water from lakes during the summer may be authorized on a site-specific basis, depending on water volume and depth, the fish community, and connectivity to other lakes or streams and adjacent bird nesting sites. Current water use guidelines are as follows: 1. Winter Water Use a. Lakes with fish except ninespine stickleback or Alaska blackfish: unfrozen water available for withdrawal is limited to 15 percent of calculated volume deeper than 7 feet; only ice aggregate may be removed from lakes that are 7 feet deep or less. b. Lakes with only ninespine stickleback or Alaska blackfish: unfrozen water available for withdrawal is limited to 30 percent of calculated volume deeper than 5 feet; only ice aggregate may be removed from lakes that are 5 feet deep or less. c. Lakes with no fish, regardless of depth: water available for use is limited to 20 percent of total lake volume. d. In lakes where unfrozen water and ice aggregate are both removed, the total use would not exceed the respective 15 percent, 20 percent, or 30 percent volume calculations above, unless recharge calculations, river overbank flooding, or a connection to a stream or river indicate recharge will replenish full water withdrawal plus additional ice aggregate withdrawal amounts above these limits. e. Note: Compacting snow cover or removing snow from fish-bearing water bodies would be prohibited, except at approved ice road crossings, water pumping stations on lakes, or areas of grounded ice. 2. Summer Water Use a. Requests for summer water use must be made separately, and the volume allowance would be evaluated on a case-by-case basis. Approval from the BLM Authorized Officer is required. 3. All Water Use a. Any water intake structures in fish-bearing or non-fish-bearing waters would be designed, operated, and maintained to prevent fish entrapment, entrainment, or injury. Note: All water withdrawal equipment must be equipped with and use fish screening devices approved by the ADFG, Division of Habitat. b. Additional modeling or monitoring may be required to assess water level and water quality conditions before, during, and after water use from any fish-bearing lake or lake of special concern. (see above)	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	21	WINTER OVERLAND MOVES AND SEISMIC WORK The following ROPs apply to overland and over-ice moves, seismic work, and any similar cross-country vehicle use and heavy equipment on surfaces without roads during winter. These restrictions do not apply to the use of such equipment on ice roads after they are constructed. Required Operating Procedure 10 Objective: Protect grizzly bear, polar bear, and seal denning and birthing locations. Requirement/Standard: a. Grizzly bear dens: Cross-country use of all vehicles, equipment, and oil and gas activity is prohibited within 0.5 mile of occupied grizzly bear dens identified by the ADF&G or the USFWS, unless alternative protective measures are approved by the BLM Authorized Officer, in consultation with the ADF&G. b. Polar bear dens: Cross-country use of vehicles, equipment, oil and gas activity, and seismic survey activity is prohibited within 1 mile of known or observed polar bear dens, unless alternative protective measures are approved by the BLM Authorized Officer and are consistent with the MMPA and the ESA. Polar bear and seal mitigation measures for onshore activities. a. In order to limit disturbance around known polar bear dens: - Attempt to locate polar bear dens. Operators seeking to carry out onshore activities in known or suspected polar bear denning habitat during the denning season (approximately November- April) must make efforts to locate occupied polar bear dens within and near areas of operation, utilizing appropriate tools, such as infrared imagery and/or polar bear scent-trained dogs. All observed or suspected polar bear dens must be reported to the USFWS prior to the initiation of activities. - Observe the exclusion zone around known polar bear dens. Operators must observe a 1.6-km (1-mi) operational exclusion zone around all known polar bear dens during the denning season (approximately November-April, or until the female and cubs leave the areas). Should previously unknown occupied dens be discovered within 1 mi of activities, work must cease and the USFWS contacted for guidance. The USFWS would evaluate these instances on a case-by-case basis to recommend the appropriate action. Potential actions may range from cessation or modification of work to conducting additional monitoring, and the holder of the authorization must comply with any additional measures specified. - Use the den habitat map developed by the US Geological Survey (USGS). This measure ensures that the location of potential polar bear dens is considered when conducting activities in the coastal areas of the Beaufort Sea. - Polar bear den restrictions. Restrict the timing of the activity to limit disturbance around dens. b. In order to limit disturbance of activities to seal lairs in the nearshore area (<3 m water depth): - Specific to seismic operations: - Before the seismic survey begins, the operator would conduct a sound source verification test to measure the distance of vibroseis3 sound levels through grounded ice to the 120 decibels (dB) re 1 µPa threshold in open water and water within ungrounded ice . Once that distance is determined, it would be shared with the BLM and NMFS. The distance would be used to buffer all on-ice seismic survey activity operations from any open water or ungrounded ice throughout the project area. The operator would draft a formal study proposal that would be submitted to the BLM and NMFS for review and approval before the activity begins. c. For all activities: - Maintain airborne sound levels of equipment below 100 dB re 20 µPa at 66 feet. If different equipment would be used than was originally proposed, the applicant must inform the BLM Authorized Officer and share sound levels and air and water attenuation information for the new equipment. - On-ice operations after May 1 would employ a full-time trained protected species observer (PSO) on vehicles to ensure all basking seals are avoided by vehicles by at least 500 feet and would ensure that all equipment with airborne noise levels above 100 dB re 20 µPa were operating at distances from observed seals that allowed for the attenuation of noise to levels below 100 dB. All sightings of seals would be reported to the BLM using a NMFS-approved observation form. - Ice paths must not be greater than 12 feet wide. No driving beyond the shoulder of the ice path or off planned routes unless necessary to avoid ungrounded ice or for other human or marine mammal safety reasons. On-ice driving routes should minimize travel over snow/ice/topographical features that lead to birthing lair development. - No unnecessary equipment or operations (e.g., camps) would be placed or used on sea ice.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	22	Required Operating Procedure 11 Objective: Protect stream banks and freshwater sources, minimize soils compaction and the breakage, abrasion, compaction, or displacement of vegetation. Requirement/Standard: 1. Ground operation would be allowed when soil temperatures at 12 inches below the tundra surface (defined as the top of the organic layer) reaches 23 degrees Fahrenheit (°F) and snow depths are an average of 9 inches, or 3 inches over the highest tussocks. Ground operations would cease when the spring snowmelt begins. The dates would be determined by the BLM Authorized Officer. Low ground pressure vehicles used for off-road travel would be defined by the BLM Authorized Officer. These vehicles would be selected and operated in a manner that eliminates direct impacts on the tundra caused by shearing, scraping, or excessively compacting the tundra. Note: This provision does not include the use of heavy equipment required during ice road construction; however, heavy equipment would not be allowed on the tundra until conditions in "a," above, are met. 2. Bulldozing tundra mat and vegetation, trails, or seismic lines is prohibited. Clearing or smoothing drifted snow is allowed to the extent that the tundra mat is not disturbed. Only smooth pipe snow drags would be allowed for smoothing drifted snow. 3. To reduce the possibility of excessive compaction, vehicle operators would avoid using the same routes for multiple trips, unless necessitated by serious safety or environmental concerns and approved by the BLM Authorized Officer. This provision does not apply to hardened snow trails or ice roads. 4. Ice roads would be designed and located to avoid the most sensitive and easily damaged tundra types as much as practicable. Ice roads may not use the same route each year; offSEIS may be required to avoid using the same route or track in subsequent years. 5. Conventional ice road construction may not begin until off-road travel conditions are met (as described in "a," above) within the ice road route and approval to begin construction is given by the BLM Authorized Officer. 6. Snow fences may be used in areas of low snow to increase snow depths within an ice road or snow trail route. Excess snow accumulated by snow fences must be excavated or pushed to decrease snow depths to that found in surrounding tundra at the end of road use. 7. Seismic operations and winter overland travel may be monitored by agency representatives, and the operator may be required to accommodate the representative during operations. 8. Incidents of damage to the tundra would be reported to the BLM Authorized Officer within 72 hours of occurrence. Follow-up corrective actions would be determined in consultation with and approved by the BLM Authorized Officer.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	23	Required Operating Procedure 12 Objective: Maintain natural spring (breakup) runoff patterns and fish passage, minimize flooding from human-made obstructions, prevent streambed sedimentation and scour, and protect water quality and stream banks. Requirement/Standard: No similar requirements.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	24	Required Operating Procedure 13 Objective: Avoid additional freeze-down of aquatic habitat harboring overwintering fish and aquatic invertebrates that fish prey on. Requirement/Standard: Travel up and down streambeds is prohibited unless it can be demonstrated that there would be no additional impacts from such travel on overwintering fish, the aquatic invertebrates they prey on, and water quality. Rivers, streams, and lakes would be crossed at areas of grounded ice or with the approval of the BLM Authorized Officer and when it has been demonstrated that no additional impacts would occur on fish or aquatic invertebrates.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	25	Required Operating Procedure 14 Objective: Minimize the effects of high-intensity acoustic energy from seismic surveys on fish. Requirement/Standard: When conducting vibroseis-based surveys above potential fish overwintering areas (water 6 feet deep or greater, ice plus liquid depth), lessees/operators/contractors would follow recommendations by Morris and Winters (2005): only a single set of vibroseis shots would be conducted if possible; if multiple shot locations are required, these would be conducted with minimal delay; multiple days of vibroseis activity above the same overwintering area would be avoided, if possible.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	26	Required Operating Procedure 15 Objective: Reduce changes in snow distribution associated with the use of snow fences to protect water quantity and wildlife habitat, including snow drifts used by denning polar bears. Requirement/Standard: The use of snow fences to reduce or increase snow depth requires permitting by the BLM Authorized Officer.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	27	OIL AND GAS EXPLORATORY DRILLING Required Operating Procedure 16 Objective: Protect water quality in fish-bearing water bodies and minimize alteration of riparian habitat. Requirement/Standard: Exploratory drilling is prohibited in fish-bearing rivers and streams and other fish-bearing water bodies. On a case-by-case basis, the BLM Authorized Officer may consider exploratory drilling in floodplains of fish-bearing rivers and streams.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	28	Required Operating Procedure 17 Objective: Minimize surface impacts from exploratory drilling. Requirement/Standard: Construction of gravel roads would be prohibited for exploratory drilling. Use of a previously constructed road or pad may be permitted if it is environmentally preferred.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	29	FACILITY DESIGN AND CONSTRUCTION Required Operating Procedure 18 Objective: Protect subsistence use and access to subsistence hunting and fishing areas.. Requirement/Standard: All roads must be designed, constructed, maintained, and operated to create minimal environmental impacts and to avoid or minimize impacts on subsistence use and access to subsistence hunting and fishing areas. The BLM Authorized Officer would consult with appropriate entities before approving construction of roads. Subject to approval by the BLM Authorized Officer, the construction, operation, and maintenance of oil and gas field roads is the responsibility of the lessee/operator/contractor, unless the construction, operation, and maintenance of roads are assumed by the appropriate governing entity.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	30	Required Operating Procedure 19 Objective: Protect water quality and the diversity of fish, aquatic invertebrates, and wildlife populations and habitats. Requirement/Standard: 1. Permanent oil and gas facilities, including roads, airstrips, and pipelines, are prohibited within 500 feet, as measured from the ordinary high-water mark, of fish-bearing water bodies, unless further setbacks are stipulated under Lease Stipulations 1, 2, or 3. Pipeline and road crossings would be permitted by the BLM Authorized Officer in accordance with PL 115-97, following coordination with the appropriate entities. 2. Temporary winter exploration and construction camps are prohibited on frozen lakes and river ice. 3. Siting temporary winter exploration and construction camps on river sand and gravel bars is allowed and encouraged. Where trailers or modules must be leveled and the surface is vegetation, they would be leveled using blocking in a way that preserves the vegetation.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	31	Required Operating Procedure 20 Objective: Maintain free passage of marine and anadromous fish, protect subsistence use and access to subsistence hunting and fishing and anadromous fish, and protect subsistence use and access to subsistence and non-subsistence hunting and fishing. Requirement/Standard: 1. Causeways and docks are prohibited in river mouths and deltas. Artificial gravel islands and permanent bottom-founded structures are prohibited in river mouths and active stream channels on river deltas. 2. Causeways, docks, artificial islands, and bottom-founded drilling structures would be designed to ensure free passage of marine and anadromous fish and to prevent significant changes to nearshore oceanographic circulation patterns and water quality characteristics. A monitoring program, developed in coordination with appropriate entities (e.g., USFWS, NMFS, State of Alaska, or NSB), would be required to address the objectives of water quality and free passage of fish.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	32	Required Operating Procedure 21 Objective: Minimize impacts of the development footprint. Requirement/Standard: Facilities would be designed and located to minimize the development footprint and impacts on other purposes of the Arctic Refuge. Issues and methods that are to be considered, as appropriate, are as follows: 1. Using extended-reach drilling for production drilling to minimize the number of pads and the network of roads between pads 2. Sharing facilities with existing development 3. Collocating all oil and gas facilities with drill pads, except airstrips, docks, base camps, and seawater treatment plants (STPs) 4. Using gravel-reduction technologies, e.g., insulated or pile-supported pads 5. Using approved impermeable liners under gravel infrastructure to minimize the potential for hydrocarbon and other hazardous materials spills to migrate to underlying ground. 6. Harvesting the tundra organic layer within gravel pad footprints for use in rehabilitation 7. Coordinating facilities with infrastructure in support of adjacent development 8. Locating facilities and other infrastructure outside areas identified as important for wildlife habitat, subsistence uses, and recreation 9. Where aircraft traffic is a concern, balancing gravel pad size and available supply storage capacity with potential reductions in the use of aircraft to support oil and gas operations 10. Facilities and infrastructure will be designed to minimize alteration of sheetflow/overland flow 11. Where gravel is brought in from outside of the Coastal Plain, require the use of Certified	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	33	WEED-FREE GRAVEL Required Operating Procedure 22 Objective: Reduce the potential for ice-jam flooding, damage from aufeis, impacts on wetlands and floodplains, erosion, alteration of natural drainage patterns, and restriction of fish passage. Requirement/Standard: 1. To allow for sheet flow and floodplain dynamics and to ensure passage of fish and other organisms, single-span bridges are preferred over culverts, if technically feasible. When necessary, culverts could be constructed on smaller streams, if they are large enough to avoid restricting fish passage or adversely affecting natural stream flow. 2. To ensure that crossings provide for fish passage, all proposed crossing designs would adhere to the Best Management Practices (BMPs) outlined in Fish Passage Design Guidelines, developed by the USFWS Alaska Fish Passage Program, McDonald & Associates (1994), Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road-Stream Crossings (USFS 2008), and other generally accepted best management procedures prescribed by the BLM Authorized Officer, in consultation with the USFWS. 3. In addition to the BMPs outlined in the aforementioned documents for stream simulation design, the design engineer would ensure that crossing structures are designed for aufeis, permafrost, sheet flow, additional freeboard during breakup, and other unique conditions of the arctic environment.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	34	Required Operating Procedure 23 Objective: Minimize disruption of caribou movement and subsistence use. Requirement/Standard: Pipelines and roads would be designed to allow the free movement of caribou and the safe, unimpeded passage of those participating in subsistence activities. Listed below are the accepted design practices. 1. Aboveground pipelines would be elevated a minimum of 7 feet, as measured from the ground to the bottom of the pipeline at vertical support members (VSMs). 2. In areas where facilities or terrain would funnel caribou movement or impede subsistence or public access, ramps of appropriate angle and design over pipelines, buried pipelines, or pipelines buried under roads may be required by the BLM Authorized Officer, in coordination with the appropriate entity. 3. A minimum distance of 500 feet between pipelines and roads would be maintained. Where it is not feasible, alternative pipeline routes, designs, and possible burial under the road for pipeline road crossings would be considered by the BLM Authorized Officer. 4. Aboveground pipelines would have a nonreflective finish. 5. When laying out oil and gas field developments, lessees would orient infrastructure to avoid impeding caribou migration and to avoid corralling effects. 6. Before the construction of permanent facilities is authorized, the lessee would design and implement and report a study of caribou movement, unless an acceptable study specific to the PCH and CAH has been completed within the last 10 years and approved by the BLM Authorized Officer. 7. A vehicle use management plan would be developed by the lessee/operator/contractor and approved by the BLM Authorized Officer, in consultation with the appropriate federal, State, and NSB regulatory and resource agencies. The management plan would minimize or mitigate displacement during calving and would avoid, to the extent feasible, delays to caribou movements and vehicle collisions during the midsummer insect season, with traffic management following industry practices. By direction of the BLM Authorized Officer, traffic may be stopped throughout a defined area for up to 4 weeks, to prevent displacement of calving caribou. If required, a monitoring plan could include collection of data on vehicle counts and caribou interaction.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	35	Required Operating Procedure 24 Objective: Minimize the impact of mineral materials mining on air, land, water, fish, and wildlife resources. Requirement/Standard: Gravel mine site design, construction, and reclamation would be done in accordance with a plan approved by the BLM Authorized Officer. The plan would take into consideration the following: 1. Locations inside or outside the active floodplain, depending on potential site-specific impacts 2. Design and construction of gravel mine sites in active floodplains to serve as water reservoirs for future use 3. Potential use of the site for enhancing fish and wildlife habitat 4. Potential storage and reuse of sod/overburden for the mine site or at other disturbed sites on the North Slope	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	36	Required Operating Procedure 25 Objective: Avoid human-caused changes in predator populations on ground-nesting birds. Requirement/Standard: 1. Lessee/operator/contractor would use best available technology to prevent facilities from providing nesting, denning, or shelter sites for ravens, raptors, and foxes. The lessee/operator/contractor would provide the BLM Authorized Officer with an annual report on the use of oil and gas facilities by ravens, raptors, and foxes as nesting, denning, and shelter sites. 2. Feeding of wildlife and allowing wildlife to access human food or odor-emitting waste is prohibited.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	37	Required Operating Procedure 26 Objective: Reduction of risk of attraction and collisions between migrating birds and oil and gas and related facilities during low light conditions. Requirement/Standard: All structures would be designed to direct artificial exterior lighting, from August 1 to October 31, inward and downward, rather than upward and outward, unless otherwise required by the Federal Aviation Administration (FAA).	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	38	Required Operating Procedure 27 Objective: Minimize the impacts to bird species from direct interaction with oil and gas facilities. Requirement/Standard: 1. To reduce the possibility of birds colliding with aboveground utility lines (power and communication), such lines would either be buried in access roads or would be suspended on VSMs, except in rare cases, limited in extent. Exceptions are limited to the following situations: a. Overhead power or communication lines may be allowed when located entirely within the boundaries of a facility pad; b. Overhead power or communication lines may be allowed when engineering constraints at the specific and limited location make it infeasible to bury or connect the lines to a VSM; or c. Overhead power or communication lines may be allowed in situations when human safety would be compromised by other methods. 2. If exceptions are granted allowing overhead wires, overhead wires would be clearly marked along their entire length to improve visibility to low-flying birds. Such markings would be developed through consultation with the USFWS. To reduce the likelihood of birds colliding with them, communication towers would be located, to the extent practicable, on existing pads and as close as possible to buildings or other structures and on the east or west side of buildings or other structures. Towers would be designed to reduce bird strikes and raptor nesting. Support wires associated with communication towers, radio antennas, and other similar facilities, would be avoided to the extent practicable. If support wires are necessary, they would be clearly marked along their entire length to improve visibility to low-flying birds. Such markings would be developed through consultation with the USFWS.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	39	Required Operating Procedure 28 Objective: Use ecological mapping as a tool to assess wildlife habitat before developing permanent facilities to conserve important habitat types. Requirement/Standard: An ecological land classification map of the area would be developed before approval of facility construction. The map would integrate geomorphology, surface form, and vegetation at a scale and level of resolution and position accuracy adequate for detailed analysis of development alternatives. The map would be prepared in time to plan an adequate number of seasons of ground-based wildlife surveys needed, if deemed necessary by the BLM Authorized Officer, before the exact facility location and facility construction is approved.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	40	Required Operating Procedure 29 Objective: Protect cultural and paleontological resources. Requirement/Standard: The lessee/operator/contractor would conduct a cultural and paleontological resources survey before any ground-disturbing activity, based on a study designed by the lessee/operator/contractor and approved by the BLM Authorized Officer. If any potential cultural or paleontological resource is found, the lessee/operator/contractor would notify the BLM Authorized Officer and would suspend all operations in the immediate area until she or he issues a written authorization to proceed.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	41	Required Operating Procedure 30 Objective: Prevent or minimize the loss of nesting habitat for cliff-nesting raptors. Requirement/Standard: 1. Removing greater than 100 cubic yards of bedrock outcrops, sand, or gravel from cliffs shall be prohibited. 2. Any extraction of sand or gravel from an active river or stream channel would be prohibited, unless preceded by a hydrological study that indicates no potential impact on the integrity of the river bluffs.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	42	Required Operating Procedure 31 Objective: Prevent or minimize the loss of raptors due to electrocution by power lines. Requirement/Standard: Comply with the most up-to-date, industry-accepted, suggested practices for raptor protection on power lines. Current accepted standards were published in Reducing Avian Collisions with Power Lines: The State of the Art in 2012, by the Avian Power Line Interaction Committee (APLIC 2012) and are updated as needed.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	43	Required Operating Procedure 32 Objective: Avoid and reduce temporary impacts on productivity from disturbance near Steller's or spectacled eider nests. Requirement/Standard: Ground-level vehicle or foot traffic within 200 meters (656 feet) of occupied Steller's or spectacled eider nests, from June 1 through July 31, would be restricted to existing thoroughfares, such as pads and roads. Construction of permanent facilities, placement of fill, alteration of habitat, and introduction of high noise levels within 200 meters (656 feet) of occupied Steller's or spectacled eider nests would be prohibited. Between June 1 and August 15, support/construction activity must occur off existing thoroughfares, and USFWS-approved nest surveys must be conducted during mid-June before the activity is approved. Collected data would be used to evaluate whether the action could occur based on a 200-meter (656-foot) buffer around nests or if the activity would be delayed until after mid-August once ducklings are mobile and have left the nest site. The BLM would also work with the USFWS to conduct nest surveys or oil spill response training in riverine, marine, and intertidal areas that is within 200 meters (656 feet) of shore outside sensitive nesting/brood-rearing periods. The protocol and timing of nest surveys for Steller's or spectacled eiders would be determined in cooperation with and must be approved by the USFWS. Surveys would be supervised by biologists who have previous experience with Steller's or spectacled eider nest surveys.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	44	Required Operating Procedure 33 Objective: Provide information to be used in monitoring and assessing wildlife movements during and after construction. Requirement/Standard: A representation, in the form of ArcGIS-compatible shapefiles, of the footprint of all new infrastructure construction would be provided to the BLM Authorized Officer, the USFWS Arctic Refuge Manager, State of Alaska, and NSB by the operator. During the planning and permitting phase, GIS shape files representing proposed footprint locations would be provided. Within 6 months of construction completion, shapefiles of all new infrastructure footprints would be provided. Infrastructure includes all gravel roads and pads, facilities built on pads, pipelines, and independently constructed power lines (as opposed to those incorporated in pipeline design). Gravel pads would be included as polygon features. Roads, pipelines, and power lines may be represented as line features but must include ancillary data to denote such data as width and number of pipes. Poles for power lines may be represented as point features. Ancillary data would include construction beginning and ending dates.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	45	USE OF AIRCRAFT FOR PERMITTED ACTIVITIES Required Operating Procedure 34 Objective: Minimize the effects of low-flying aircraft on wildlife, subsistence activities, local communities, and recreationists of the area, including hunters and anglers. Requirement/Standard: The operator would ensure that operators of aircraft used for permitted oil and gas activities and associated studies maintain altitudes according to the following guidelines (Note: This ROP is not intended to restrict flights necessary to survey wildlife to gain information necessary to meet the stated objectives of the lease stipulations and ROPs; however, such flights would be restricted to the minimum necessary to collect such data and should consider other technologies, such as remote sensing and drones, in order to minimize impacts from aircraft): 1. Land users would submit an aircraft use plan as part of an oil and gas exploration or development proposal, which includes a plan to monitor flights and includes a reporting system for subsistence hunters to easily report flights that disturb subsistence harvest. The plan would address strategies to minimize impacts on subsistence hunting and associated activities, including the number of flights, type of aircraft, and flight altitudes and routes, and would also include a plan to monitor flights. 2. Proposed aircraft use plans would be reviewed by the appropriate Alaska Native or subsistence organization. Consultations with these same agencies would be required if unacceptable disturbance is identified by subsistence users. Adjustments, including possible suspension of all flights, may be required by the BLM Authorized Officer, if resulting disturbance is determined to be unacceptable. The number of takeoffs and landings to support oil and gas operations with necessary materials and supplies would be limited to the maximum extent practical. 3. Use of aircraft, especially rotary wing aircraft, would be kept to a minimum near known subsistence camps and cabins or during sensitive subsistence hunting periods (e.g., spring goose hunting, summer caribou) and when recreationists are present. 4. Operators of aircraft used for permitted activities would maintain an altitude of at least 1,500 feet above ground level (except for takeoffs and landings) within 0.5 miles of cliffs identified as raptor nesting sites, and over caribou calving range, unless doing so would endanger human life or violate safe flying practices. An exception to flight altitudes may be approved by the Authorized Officer after coordination and review of the aircraft use plan to accommodate requirements to fly lower for some required activities (e.g., archaeological clearance). 5. Minimize the number of helicopter landings in caribou calving ranges from May 20 through June 20. 6. Pursuing running wildlife is hazing. Hazing wildlife by aircraft pilots is prohibited, unless otherwise authorized. If wildlife begins to run as an aircraft approaches, the aircraft is too close, and the operator must break away. 7. Avoid operation of aircraft over snow goose staging areas between August 15 and September 30. Necessary overflights during this timeframe should avoid areas of heavy snow goose concentrations. 8. When polar bears are present: a. Operators of support aircraft should conduct their activities at the maximum distance possible from concentrations of polar bears. b. Aircraft will not operate at an altitude lower than 457 m (1,500 ft) within 805 m (0.5 mi) of polar bears observed on ice or land. Helicopters may not hover or circle above such areas or within 805 m (0.5 mile) of such areas. When weather conditions do not allow a 457-m (1,500-ft) flying altitude, operators will take precautions to avoid flying directly over or within 805 m (0.5 mile) of these areas. c. Plan all aircraft routes to minimize any potential conflict with known subsistence polar bear hunting activity.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	46	OIL AND GAS FIELD ABANDONMENT Required Operating Procedure 35 Objective: Ensure ongoing and long-term reclamation of land to its previous condition and use. Requirement/Standard: Before final abandonment, land used for oil and gas infrastructure- including well pads, production facilities, access roads, and airstrips-would be reclaimed. The leaseholder would develop and implement a BLM-approved abandonment and reclamation plan. The plan would describe short-term stability, visual, hydrological, and productivity objectives and steps to be taken to ensure eventual rehabilitation to the land's previous hydrological, vegetation, and habitat functions. The BLM Authorized Officer may grant exceptions to satisfy stated environmental or public purposes.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	47	SUBSISTENCE CONSULTATION FOR PERMITTED ACTIVITIES Required Operating Procedure 36 Objective: Provide opportunities for subsistence users to participate in planning and decision-making to prevent unreasonable conflicts between subsistence uses and other activities. Requirement/Standard: The lessee/operator/contractor would coordinate directly with affected communities, using the following guidelines: a. Before submitting an application to the BLM, the applicant would work with directly affected subsistence communities, the Native Village of Kaktovik, NSB, and the North Slope and Eastern Interior Alaska Subsistence Regional Advisory Councils. They would discuss the siting, timing, and methods of their proposed operations to help discover local traditional and scientific knowledge. This is to minimize impacts on subsistence uses. Through this coordination, the applicant would make every reasonable effort, including such mechanisms as conflict avoidance agreements (CAAs) and mitigating measures, to ensure that proposed activities would not result in unreasonable interference with subsistence activities. In the event that no agreement is reached between the parties, the BLM Authorized Officer would work with the involved parties and determine which activities would occur, including the time frames. b. Applicants would submit documentation of coordination as part of operation plans to the North Slope and Eastern Interior Alaska Subsistence Regional Advisory Councils for review and comment. Applicants must allow time for the BLM to conduct formal government-to-government consultation with Native Tribal governments if the proposed action requires it. c. A plan would be developed that shows how the activity, in combination with other activities in the area, would be scheduled and located to prevent unreasonable conflicts with subsistence activities. The plan would also describe the methods used to monitor the effects of the activity on subsistence use. The plan would be submitted to the BLM Authorized Officer as part of the plan of operations. The plan would address the following items: a. A detailed description of the activities to take place (including the use of aircraft). b. A description of how the applicant would minimize or address any potential impacts identified by the BLM Authorized Officer during the coordination process. c. A detailed description of the monitoring to take place, including process, procedures, personnel involved, and points of contact both at the work site and in the local community. d. Communication elements to provide information on how the applicant would keep potentially affected individuals and communities up-to-date on the progress of the activities and locations of possible, short-term conflicts (if any) with subsistence activities. Communication methods could include holding community open house meetings, workshops, newsletters, and radio and television announcements. e. Procedures necessary to facilitate access by subsistence users to conduct their activities. f. Barge operators requiring a BLM permit are required to demonstrate that barging activities will not have unmitigable adverse impacts, as determined by NMFS, on the availability of marine mammals to subsistence hunters. g. All operators of vessels over 50 feet in length engaged in operations requiring a BLM permit must have an automatic identification system transponder system on the vessel. d. Permittees who propose transporting facilities, equipment, supplies, or other materials by barge to the Coastal Plain in support of oil and gas activities in the Arctic Refuge would notify and coordinate with the Alaska Eskimo Whaling Commission, the appropriate local community whaling captains' associations, and the NSB to minimize impacts from the proposed barging on subsistence whaling. e. For polar bears: Operators must minimize adverse impacts on the availability of polar bears for subsistence uses. f. Community consultation. Applicants must consult with potentially affected communities and appropriate subsistence user organizations to discuss potential conflicts with subsistence polar bear hunting caused by the location, timing, and methods of operations and support activities. g. Plan of Cooperation (POC). If conflicts arise, the applicant must address conflict avoidance issues through a POC, where an operator will be required to develop and implement a USFWS-approved POC.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	48	Required Operating Procedure 37 Objective: Avoid conflicts between subsistence activities and seismic exploration. Requirement/Standard: In addition to the coordination process described in ROP 36 for permitted activities, before seismic exploration begins, applicants would notify the local search and rescue organizations in proposed seismic survey locations for that operational season. For the purpose of this standard, a potentially affected cabin or campsite is defined as one used for subsistence purposes and located within the boundary of the area subject to proposed geophysical exploration or within 1 mile of actual or planned travel routes used to supply the seismic operations. a. Because of the large land area covered by typical geophysical operations and the potential to affect a large number of subsistence users during the exploration season, the permittee/operator would notify all potentially affected subsistence use cabin and campsite users. b. The official recognized list of subsistence users of cabins and campsites is the NSB's most current inventory of cabins and campsites, which have been identified by the subsistence users' names. c. A copy of the notification letter, a map of the proposed exploration area, and the list of potentially affected users would also be provided to the office of the appropriate Native Tribal government. d. The BLM Authorized Officer would prohibit seismic work within 1 mile of any known subsistence use cabin or campsite, unless an alternate agreement between the owner or user is reached through the consultation process and presented to the BLM Authorized Officer. e. Each week, the permittee would notify the appropriate local search and rescue of the operational location in the Coastal Plain. This notification would include a map indicating the extent of surface use and occupation, as well as areas previously used or occupied during the operation. The purpose of this notification is to give hunters up-to-date information regarding where seismic exploration is occurring and has occurred, so that they can plan their hunting trips and access routes accordingly. A list of the appropriate search and rescue offices to be contacted can be obtained from the coordinator of the North Slope and Eastern Interior Alaska Subsistence Regional Advisory Councils in the BLM's Arctic District Office.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	49	Required Operating Procedure 38 Objective: Minimize impacts from non-local hunting, trapping, and fishing activities on subsistence resources. Requirement/Standard: Hunting, trapping, and fishing by lessees/operators/contractors are prohibited when persons are on work status. This is defined as the period during which an individual is under the control and supervision of an employer. Work status is terminated when workers' shifts ends, and they return to a public airport or community (e.g., Kaktovik, Utqiagvik, or Deadhorse). Use of operator/permittee facilities, equipment, or transport for personnel access or aid in hunting, trapping, and fishing is prohibited.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	50	Required Operating Procedure 39 Objective: Prevent disruption of subsistence use and access. Requirement/Standard: Before starting exploration or development, lessees/operators/contractors are required to develop a subsistence access plan, in coordination with the Native Village of Kaktovik and the City of Kaktovik, to be approved by the BLM Authorized Officer.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	51	ORIENTATION PROGRAMS ASSOCIATED WITH PERMITTED ACTIVITIES Required Operating Procedure 40 Objective: Minimize cultural and resource conflicts. Requirement/Standard: All personnel involved in oil and gas and related activities would be provided with information concerning applicable lease stipulations, ROPs, standards, and specific types of environmental, social, traditional, and cultural concerns that relate to the region. The operator would ensure that all personnel involved in permitted activities would attend an orientation program at least once a year. The proposed orientation program would be submitted to the BLM Authorized Officer for review and approval and would accomplish the following: 1. Provide sufficient detail to notify personnel of applicable lease stipulations and ROPs and to inform individuals working on the project of specific types of environmental, social, traditional, and cultural concerns that relate to the region. 2. Address the importance of not disturbing archaeological and biological resources and habitats, including endangered species, fisheries, bird colonies, and marine mammals, and provide guidance on how to avoid disturbance, including on the preparation, production, and distribution of information cards on endangered or threatened species. 3. Be designed to increase sensitivity and understanding of personnel to community values, customs, and lifestyles in areas in which personnel would be operating. 4. Include information concerning avoidance of conflicts with subsistence and pertinent mitigation. 5. Include information for aircraft personnel concerning subsistence activities and areas and seasons that are particularly sensitive to disturbance by low-flying 6. aircraft; of special concern is aircraft use near traditional subsistence cabins and campsites, flights during spring goose hunting and fall caribou and moose hunting seasons, and flights near potentially affected communities. 7. Provide that individual training is transferable from one facility to another, except for elements of the training specific to a site. 8. Include on-site records of all personnel who attend the program for so long as the site is active, though not to exceed the 5 most recent years of operations; this record would include the name and dates of attendance of each attendee. 9. Include a module discussing bear interaction plans to minimize conflicts between bears and humans. 10. Provide a copy of 43 CFR 3163 regarding noncompliance assessment and penalties to on-site personnel. 11. Include training designed to ensure strict compliance with local and corporate drug and alcohol policies; this training would be offered to the NSB Health Department for review and comment. 12. Include employee training on how to prevent transmission of communicable diseases, including sexually transmitted diseases, to the local communities; this training would be offered to the NSB Health Department for review and comment.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	52	In order to limit disturbance around known polar bear dens: Monitoring requirements. 1. Develop and implement a site-specific, USFWS-approved marine mammal monitoring and mitigation plan to monitor and evaluate the effectiveness of mitigation measures and the effects of activities on polar bears, and the subsistence use of this species. 2. Provide trained, qualified, and USFWS-approved onsite observers to carry out monitoring and mitigation activities identified in the marine mammal monitoring and mitigation plan. 3. For offshore activities, provide trained, qualified, and USFWS-approved observers on board all operational and support vessels to carry out monitoring and mitigation activities identified in the marine mammal monitoring and mitigation plan. 4. Cooperate with the USFWS and other designated Federal, State, and local agencies to monitor the impacts of Industry activities on polar bears. Where information is insufficient to evaluate the potential effects of activities on polar bears, and the subsistence use of this species, operators may be required to participate in joint monitoring and/or research efforts to address these information needs and ensure the least practicable impact to these resources. 5. Reporting requirements. Operators must report the results of monitoring and mitigation activities to the USFWS. 6. In-season monitoring reports a. Activity progress reports. Notify the USFWS at least 48 hours prior to the onset of activities; provide the USFWS weekly progress reports of any significant changes in activities and/or locations; and notify the USFWS within 48 hours after ending of activities. b. Polar bear observation reports. Report all observations of polar bears and potential polar bear dens, during any Industry activity. Information in the observation report must include, but is not limited to: (1) Date, time, and location of observation; (2) Number of bears; (3) Sex and age; (4) Observer name and contact information; (5) Weather, visibility, sea state, and sea-ice conditions at the time of observation; (6) Estimated closest distance of bears from personnel and facilities; (7) Industry activity at time of sighting; (8) Possible attractants present; (9) Bear behavior; (10) Description of the encounter; (11) Duration of the encounter; and (12) Mitigation actions taken. c. Notification of LOA incident report. Report all bear incidents during any Industry activity. Reports must include: (1) All information specified for an observation report; (2) A complete detailed description of the incident; and (3) Any other actions taken. d. Final report. The results of monitoring and mitigation efforts identified in the marine mammal monitoring and mitigation plan must be submitted to the USFWS for review within 90 days of the expiration of an authorization. Information in the final report must include: (1) Copies of all observation reports submitted under an authorization; (2) A summary of the observation reports; (3) A summary of monitoring and mitigation efforts, including areas, total hours, total distances, and distribution; (4) Analysis of factors affecting the visibility and detectability of polar bears during monitoring; (5) Analysis of the effectiveness of mitigation measures; (6) Analysis of the distribution, abundance, and behavior of polar bears observed; and (7) Estimates of take in relation to the specified activities.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	53	SUMMER VEHICLE TUNDRA ACCESS Required Operating Procedure 41 Objective: Protect stream banks and water quality; minimize compaction and displacement of soils; minimize the breakage, abrasion, compaction, or displacement of vegetation; protect cultural and paleontological resources; maintain populations of and adequate habitat for birds, fish, and caribou and other terrestrial mammals; and minimize impacts on subsistence activities. Requirement/Standard: On a case-by-case basis, the BLM Authorized Officer, in consultation with the USFWS, may permit low-ground-pressure vehicles to travel off gravel pads and roads during times other than those identified in ROP 11. Permission for such use would be granted only after an applicant has completed the following: 1. Submitted studies satisfactory to the BLM Authorized Officer of the impacts on soils and vegetation of the specific low-ground-pressure vehicles to be used; these studies would reflect use of such vehicles under conditions like those of the route proposed and would demonstrate that the proposed use would have no more than minimal impacts on soils and vegetation. Alternatively, the most current list of summer off-road vehicles approved by the State may be used to fulfill this requirement. 2. Submitted surveys satisfactory to the BLM Authorized Officer of subsistence uses of the area as well as of the soils, vegetation, hydrology, wildlife, and fish (and their habitats), paleontological and archaeological resources, and other resources, as required by the BLM Authorized Officer. 3. Designed or modified the use proposal to minimize impacts to the BLM Authorized Officer's satisfaction; design steps to achieve the objectives and based on the studies and surveys may include timing restrictions (generally it is considered inadvisable to conduct tundra travel before August 1 to protect ground- nesting birds), shifting work to winter, rerouting, and not proceeding when certain wildlife are present or subsistence activities are occurring.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	54	GENERAL WILDLIFE AND HABITAT PROTECTION Required Operating Procedure 42 Objective: Minimize disturbance of wildlife or alteration and hinderance of wildlife movements through the Coastal Plain. Requirement/Standard: 1. Following wildlife with ground vehicles or aircraft is prohibited. Particular attention would be given to avoid disturbing caribou. 2. Avoid and minimize the disturbance to loafing and nesting birds to the extent practicable.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	55	Required Operating Procedure 43 Objective: Prevent the introduction or spread of nonnative, invasive species in the Coastal Plain. Requirement/Standard: 1. Certify that all equipment, supplies (including gravel, lumber, erosion control material), and vehicles (including helicopters, planes, boats, off-road vehicles, trucks, tracked vehicles, and barges) intended for use either off or on roads are free of invasive species before transiting into the Coastal Plain.. 2. Survey annually along roads, drilling platforms, and barge access points for invasive species and begin effective eradication measures on evidence of their introduction. 3. Before beginning operations into the Coastal Plain, submit a plan, for BLM approval, detailing the methods for: 1) cleaning equipment, supplies, and vehicles, including off-site disposal of cleaning fluids or materials and detected organisms, and 2) early detection surveys, and eradication response measures (including post treatment monitoring) for all invasive species, noxious plants and animals, and weeds.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	80325	56	Required Operating Procedure 44 Objective: Minimize loss of populations and habitat for plant species designated as sensitive by the BLM in Alaska. Requirement/Standard: If a development is proposed in an area that provides potential habitat for a BLM sensitive plant species, the development proponent would conduct surveys at appropriate times of the summer season and in appropriate habitats for the sensitive plant species. The results of these surveys and plans to minimize impacts would be submitted to the BLM with the application for development.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	57	Required Operating Procedure 45 Objective: Minimize loss of individuals and habitat for mammalian, avian, fish, and invertebrate species designated as sensitive by the BLM in Alaska. Requirement/Standard: If a development is proposed in an area that provides potential habitat for BLM sensitive species, the development proponent would conduct surveys at appropriate times of the year and in appropriate habitats to detect the presence of BLM sensitive species. The results of these surveys and plans to minimize impacts would be submitted to the BLM with the application for development.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	80325	58	MARINE VESSEL TRAFFIC-ASSOCIATED ACTIVITIES Required Operating Procedure 46 Objective: Minimize impacts on marine mammals from vessel traffic. Requirement/Standard: 1. General Vessel Traffic a. Operational and support vessels would be staffed with dedicated PSOs to alert crew of the presence of marine mammals and to initiate adaptive mitigation responses. b. When weather conditions require, such as when visibility drops, support vessel operators must reduce speed and change direction, as necessary (and as operationally practicable), to avoid the likelihood of injuring marine mammals. c. The transit of operational and support vessels is not authorized before July 1. This operating condition is intended to allow marine mammals the opportunity to disperse from the confines of the spring lead system and minimize interactions with subsistence hunters. Exemption waivers to this operating condition may be issued by the NMFS and USFWS on a case-by-case basis, based on a review of seasonal ice conditions and available information on marine mammal distributions in the area of interest. d. Vessels may not be operated in such a way as to separate members of a group of marine mammals from other members of the group. e. Operators should take reasonable steps to alert other vessel operators in the vicinity of marine mammals. f. Operators should report any dead or injured listed marine mammals to NMFS and the USFWS. g. Vessels will not allow tow lines to remain in the water when not towing, all closed lops will be cut, and all trash will be retained on board for disposal in secure landfills, thereby reducing the potential for marine mammal entanglement. h. The lessees will implement measures to minimize risk of spilling hazardous substances. These measures will include: avoiding operation of watercraft in the presence of sea ice to the extent practicable and using fully operational vessel navigation systems composed of radar, chartplotter, sonar, marine communication systems, and satellite navigation receivers, as well as Automatic Identification System for vessel tracking. 2. Vessels in Vicinity of Whales a. Vessel operators would avoid groups of three or more whales by staying at least 1 mile away. A group is defined as being three or more whales observed within a 1,641-foot (500 meter) area and displaying behaviors of directed or coordinated activity (e.g., group feeding). b. All boat and barge traffic will be scheduled to avoid periods when bowhead whales are migrating through the area. Boat, hovercraft, barge, and aircraft will remain at least 12 miles from Cross Island during the bowhead whale subsistence hunting consistent with the CAA. c. The transit of operational and support vessels through the north Slope region is not authorized prior to July 1. This operating condition is intended to allow marine mammals the opportunity to disperse from the confines of the spring lead system and minimize interactions with subsistence hunters. Exemption waivers to this operating condition may be issued by NMFS and USFWS on a case-by-case basis, based upon a review of seasonal ice conditions and available information on marine mammal distributions in the area of interest. d. If the vessel approaches within 1 mile of observed whales, except when providing emergency assistance to whalers or in other emergency situations, the operator would take reasonable precautions to avoid potential interaction with the whales by taking one or more of the following actions, as appropriate: i. Reducing vessel speed to less than 5 knots within 900 feet of the whale ii. Steering around the whale if possible iii. Operating the vessel to avoid causing a whale to make multiple changes in direction, avoiding sudden or multiple course changes iv. Checking the waters around the vessel to ensure that no whales are within 164 feet of the vessel prior to engaging the propellers v. Reducing vessel speed to 9 knots or less when weather conditions reduce visibility to avoid the likelihood of injury to whales vi. Vessels shall not exceed speeds of 10 knots in order to reduce potential whale strikes vii. If a whale approaches the vessel and if maritime conditions safely allow, the engine will be put in neutral and the whale will be allowed to pass beyond the vessel. If the vessel is taken out of gear, vessel crew will ensure that no whales are within 50 m of the vessel when propellers are re-engaged, thus minimizing risk of marine mammal injury. e. Vessels will stay at least 984 feet away from cow-calf pairs, feeding aggregations, or whales that are engaged in breeding behavior. If the vessel is approached by cow-calf pairs, it will remain out of gear a long as whales are within 984 feet of the vessel (consistent with safe operations) f. Consistent with NMFS marine mammal viewing guidelines (https://alaskafisheries.noaa.gov/pr/mm-viewing-guide), operators of vessels will, at all times, avoid approaching marine mammals within 300 feet. Operators will observe direction of travel and attempt to maintain a distance of 300 feet or greater between the animal and the vessel by working to alter course or slowing the vessel. g. Special consideration of North Pacific right whale and their critical habitat: i. Vessel operators will avoid transit through North Pacific right whale critical habitat. If such transit cannot be avoided, operators must post a dedicated PSO on the bridge and reduce speed to 10 knots while in the North Pacific right whale critical habitat. Alternately, vessels may transit at no more than 5 knots without the need for a dedicated PSO. ii. Vessel operators will remain at least 800 m from all North Pacific right whales and avoid approaching whales head-on, consistent with vessel safety. iii. Operators will maintain a ship log indicating the time and geographic coordinates at which vessels enter and exit North Pacific right whale critical habitat. 3. Vessels in Vicinity of Pacific Walruses and Polar Bears a. Operators should take all reasonable precautions, such as reduce speed or change course heading, to maintain a minimum operational exclusion zone of 0.5 mile	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided (cont.)	Not Provided (cont.)	-	80325 (cont.)	58 (cont.)	around groups of feeding walruses. b. Except in an emergency, vessel operators would not approach within 0.5 mile of observed polar bears, within 0.5 mile of walrus observed on ice, or within 1 mile of walrus observed on land. c. For Polar Bears: i. Operational and support vessels must be staffed with dedicated marine mammal observers to alert crew of the presence of polar bears and initiate mitigation responses. ii. Vessels must maintain the maximum distance possible from concentrations of polar bears. No vessel should approach within an 805-m (0.5-mi) radius of polar bears observed on land or ice. iii. Vessels must avoid areas of active or anticipated polar bear subsistence hunting activity as determined through community consultations. iv. The USFWS may require trained marine mammal monitors on the site of the activity or on board any vessel or vehicles to monitor the impacts of Industry's activity on polar bear. 4. Vessels in Vicinity of Seals a. Vessels used as part of a BLM-authorized activity would be operated in a manner that minimizes disturbance to wildlife in the coastal area. Vessel operators would maintain a 1-mile buffer from the shore when transiting past an aggregation of seals (primarily spotted seals) when they have hauled out on land, unless doing so would endanger human life or violate safe boating practices. b. Vessel Transit through Steller Sea Lion Critical Habitat/Near Major Rookeries and Haulouts c. Vessels will remain 3 nautical miles (nm) (5.5 km) from all Steller sea lion rookery sites listed in paragraph 50 CFR 224.103 (d)(1)(iii). The vessel operator will not purposely approach within 3 nm of any major Steller sea lion rookery or haulout unless doing so is necessary to maintain safe conditions.	(see above)
Not Provided	Not Provided	-	80325	59	ENDANGERED SPECIES ACT SECTION 7 CONSULTATION AND MARINE MAMMAL PROTECTION ACT ACTION CONSULTATION Lease Notice 1. The lease areas may now or hereafter contain plants, animals, or their habitats determined to be threatened or endangered. The BLM may require modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activities that would contribute to the need to list such a species or designate critical habitat for listed species. The BLM would not approve any activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the ESA, as amended (16 United States Code [USC] 1531 et seq.), including completion of any required procedure for conference or consultation. Lease Notice 2. The lease area and/or potential project areas may now or hereafter contain marine mammals. The BLM may require modifications to exploration and development proposals to ensure compliance with Federal laws, including the MMPA. The BLM would not approve any exploration or development activity with the potential to "take" (e.g., kill, injure, or disrupt the behavioral patterns of) marine mammals unless the applicant/operator applies for relevant take authorization(s) under the MMPA. The BLM would require documentation of compliance with the MMPA by the USFWS and NMFS prior to commencement of such activities.	After a comparative review of the proposed text to the alternatives analyzed in the Draft SEIS, it was determined that the proposed text is consistent with Alternative B, with minor grammatical edits. These concepts have been analyzed in detail in the Draft SEIS.
Not Provided	Not Provided	-	59568	3	The conservation alternative should limit the leasable area to no more than the minimum needed for any mandatory sale, and not an acre more.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	10	Based on our review of the identified alternatives, we recommend that the Agencies adopt Alternative B as the preferred alternative. In general, Alternative B is the only alternative that is generally consistent with Congress' intent in establishing the Leasing Program. Additionally, the Agencies should promote local energy development as a benefit associated with the Leasing Program. Specifically, the Agencies should allow for the construction of infrastructure to supply natural gas to Kaktovik. Several of our communities, such as Utqiagvik and Nuiqsut, have benefited from access to natural gas provided by nearby development projects. The Agencies should encourage lessees on the Coastal Plain to work with the Borough and the City of Kaktovik to provide the community with access to natural gas resources. Finally, when siting any oil and gas facilities, we suggest that the Agencies encourage the use of existing sites that have already been subject to development activities. For example, this could include Distant Early Warning Line sites. By co-locating facilities or by reusing such areas, the impacts of development under the Leasing Program can be reduced.	The agencies have noted this feedback. Additionally Lease Stipulation 13 requires a Master Development Plan that minimizes the areal extent of development and redundant infrastructure by a single operator and among multiple operators.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	26	Again, even though the decisions evaluated in the Leasing Program EIS and its ROD "would not authorize any on-the-ground activity associated with the exploration or development of oil and gas resources" and therefore BLM should not have developed alternatives based on exploration and development, it is unclear to us how BLM developed the alternative acres of surface disturbance, a critical factor in differentiating the inappropriately constructed alternatives. It is equally unclear how BLM developed and applied the voluminous number of ROPs, NSO stipulations, CSUs, and TLs that vary by alternative.	The alternatives, including the RFD acreage scenarios for each action alternative, were developed by subject matter experts from both the BLM and USFWS to meet the objective of balancing the five purposes of the refuge.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	27	SEIS Chapter 2, Alternatives is seriously deficient due to its failure to comply with CEQ's 40 CFR 1502.14. This section requires that the alternatives section of an EIS present the environmental impacts of the proposed action and the alternatives in comparative form based on the information and analysis presented in the sections on the affected environment and the environmental consequences. The SEIS does not provide this comparison in Chapter 2. As CEQ has frequently stated, the alternatives section is the heart of the EIS. The section needs to include this comparative analysis so that it meets the test of sharply defining the issues for the decision maker and the public and providing a clear basis for the subsequent choice among alternatives.	40 CFR 1502.14 requires a comparative analysis to be presented in the affected environment and the environmental consequences sections of an EIS. This analysis is presented in Chapter 3 of the SEIS.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	30	Without explanation, the Abstract states, "Alternative C and D2 from the FEIS were not carried forward for analysis in the SEIS". § 1502.14(a) of the CEQ regulations states that for alternatives that the agency eliminated from detailed study, it should briefly discuss the reasons for their elimination. This discussion should be added in Chapter 2.4.	Additional text has been added to Section 2.4 to provide explanation why Alternative C from the 2019 Final EIS was not carried forward into the SEIS. As explained in Section 2.3.4 of the SEIS, Alternative D2 from the 2019 Final EIS became Alternative D in the Draft SEIS (with modifications), which is now Alternative D1 in the Final SEIS.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	31	In § 1508.1(z) of the CEQ regulations, a reasonable alternative is defined to mean a reasonable range of alternatives that are technically and economically feasible and meet the purpose and need for the proposed action. It is questionable whether the more restricted surface disturbance alternatives (Alternative C and D) are reasonable alternatives from an economic feasibility perspective. SEIS Appendix B, Section B.7.3, Development, states that the hypothetical scenario simply assumes that "economically feasible oil accumulations would be discovered in all potential areas that multiple anchor fields would be discovered," but there is no explanation on whether or not this assumption still holds for alternatives with more restricted allowable areas to develop and reduced allowable disturbance footprints (i.e., Alternative C and D), which would likely result in a reduced number of wells and lower production (as stated in SEIS Section 3.2.6, Petroleum Resources). Development of Coastal Plain oil and gas is particularly expensive because of its remote location, environmental conditions, and lack of existing pipelines, processing centers, and other infrastructure, and the increased surface disturbance and allowable development area restrictions under Alternative C and D could render the alternative economically infeasible; this is not clearly explained in the alternatives development discussion. Additional explanation of its economic feasibility is needed, or the alternatives should be moved to the category of alternatives considered and dismissed from further analysis.	The SEIS evaluates a broad range of alternatives, including some that are estimated to involve fewer than 2,000 acres of surface development and have more stringent environmental protections. The agencies have noted this information.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	45	Topic Alternatives Section # 2 Page # N/A SEIS Text N/A Comment SEIS Chapter 2, Alternatives, is deficient due to its failure to comply with CEQ's 40 CFR 1502.14. This section requires that the alternatives section of an EIS present the environmental impacts of the proposed action and the alternatives in comparative form based on the information and analysis presented in the sections on the affected environment and the environmental consequences. The DEIS does not provide this comparison. The section needs to include this comparative analysis so that it meets the test of sharply defining the issues for the decision maker and the public and providing a clear basis for the subsequent choice among alternatives.	40 CFR 1502.14 requires a comparative analysis to be presented in the affected environment and the environmental consequences sections of an EIS. This analysis is presented in Chapter 3 of the SEIS.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	46	Topic Alternatives Development Section # 2.2 Page # 2-1 to 2-2 SEIS Text Full text of section. Comment Congress directed BLM to "lease those areas that have the highest potential for the discovery of hydrocarbons." TCJA § 20001(c)(1)(B)(i)(II). Because Congress' directive was to focus on the area of high hydrocarbon potential, BLM should have established this area as the geographic starting point for which the alternatives would be located and developed. By developing alternatives that include areas of low and moderate oil potential (as shown in SEIS 3.2.6, Petroleum Resources, Tables 3-20, 3-21, and 3-22), BLM contradicted Congress' directive to lease areas with the highest potential for discovery of hydrocarbons. As such, the alternatives are flawed and confuse decision-making.	The SEIS analyzes a broad range of action alternatives, each of which include high oil and gas potential areas. Alternative D2, consistent with Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	47	Topic Alternatives Development Section # 2.2 Page # 2-1 SEIS Text The joint lead agencies determined that there were three key components to the alternatives that would need to be revisited for the Leasing SEIS: the lease stipulations and ROPs, the interpretation and application of the 2,000-acre disturbance limit from PL 115-97, and the areas open to seismic exploration activities. Comment That approach skips straight to restrictions and completely ignored the fact that Section 20001(c)(1) of PL 115-97 requires lease sales for at least 400,000 acres of the highest hydrocarbon potential (HCP) lands within the Coastal Plain.	The SEIS analyzes a broad range of action alternatives, each of which include high oil and gas potential areas. Alternative D2, consistent with Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	48	Topic Alternatives Development Section # 2.2 Page # 2-1 SEIS Text The BLM held a 60-day public scoping period to solicit public input on the Leasing SEIS (see Section 1.6). Commenters suggested a variety of alternative concepts and revisions to the lease stipulations and ROPs that had been included in the Final Coastal Plain EIS (BLM 2019). Comment The purpose of an SEIS is not to go on a fishing trip to catch new issues. Indeed, scoping is not even required for SEISs. The comments suggesting a variety of alternative concepts and revisions to the lease stipulations and ROPs were focused on activities that were not ripe for decision. This allowed BLM to further cloud the development of the alternatives. "Agencies: (1) Shall prepare supplements to either or final environmental impact statements if a major Federal action remains to occur, and: (i) The agency makes substantial changes to the proposed action that are relevant to environmental concerns; or (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 CFR 1502.9	The SEIS was developed in part to address an inadequate range of alternatives presented in the 2019 EIS, which, for example, assumed that all alternatives must provide for exactly 2,000 acres of surface development. The agencies have noted this information.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	49	Topic Alternatives Development Section # 2.2 Page # 2-1 to 2-2 SEIS Text To begin development of alternatives for analysis in this Leasing SEIS, the BLM and USFWS reviewed public comments that were submitted on the Final Coastal Plain EIS, as well as those submitted during scoping for the Leasing SEIS, for any alternative concepts that may have been previously excluded from consideration but might now be relevant following SO 3401. The joint lead agencies used these screening criteria to help evaluate potential alternatives: -Does the suggested alternative component meet the purpose of and need for the program? -Is the alternative component economically, technologically, and logistically feasible? -Does the alternative component address substantive issues identified through SO 3401 and public scoping? Comment Building on the comment above, BLM went fishing all the way back to the scoping period for the original EIS. Nowhere in Chapter 2 or the appendices does the EIS demonstrate how these screening criteria were used. The descriptions of the alternatives and all their terms and conditions simply appear in Chapter 2.	Section 2.2 of the SEIS explains how the screening criteria were used.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	50	Topic Alternatives Development Section # 2.2 Page # 2-2 SEIS Text The joint lead agencies held an alternatives development workshop with cooperating agencies to reexamine key concerns around the first component of the Leasing SEIS alternatives, the lease stipulations and ROPs. Through this collaborative exercise, it was determined that a new suite of lease stipulations and ROPs would be developed to help incorporate new data and information and to help address the deficiencies identified in the Final Coastal Plain EIS. After the initial alternatives workshop, the joint lead agencies convened smaller resource-focused groups that consisted of specialists from the BLM, USFWS, and representatives from cooperating agencies to further refine lease stipulations and ROPs into the new Alternative D (see Section 2.3.4). Comment Again, nowhere in Chapter 2 or the appendices does the EIS demonstrate how these screening criteria were used. The descriptions of the alternatives and all their terms and conditions simply appear in Chapter 2. BLM developed the "new suite of lease stipulations and ROPs" for activities that would be several NEPA reviews and decisions away. Without a clear rationale for how BLM developed the alternatives, there is no clear basis for the public or decision maker to make a reasoned choice among alternatives.	The screening criteria noted in Section 2.2 were used to guide discussion during the Alternatives Development Workshop held in April 2022 with cooperating agencies. Additional text has been added to Section 2.2.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	51	Topic Alternatives Development Section # 2.2 Page # 2-1 to 2-2 SEIS Text N/A Comment BLM, in developing the proposed alternatives, overreaches the issues that need to be addressed to consider the Coastal Plains leasing as required by the Tax Cuts and Jobs Act (P.L. 115-97). The purpose of the lease program is only to allow for exploration of the ANWR leasing area to determine if further development should occur. The leases by their express terms do not allow for exploration without further NEPA review. The express terms in the AIDEA leases is not referenced or discussed in the SEIS. No ground disturbing activity is allowed without further NEPA review. Should further development be determined to be appropriate, that development would be subject to a new and different Environmental Impact Statement. In effect, there is an independent utility for just the exploration allowed under the initial leasing program.	Future on-the-ground actions requiring BLM approval, including potential exploration and development proposals, would require further NEPA analysis based on the site-specific proposal (see Section 1.2). The terms of leases will be determined during future lease sale processes.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	53	Topic Alternatives Development Section # 2.2 Page # 2-1 to 2-2 SEIS Text N/A Comment Reasonable Alternatives (40 CFR 1508.1(z)) - It is questionable whether the more restricted surface disturbance alternatives (C and D) are reasonable from an economic feasibility perspective. Appendix B, Section B.7.3, Development, states that the hypothetical scenario simply assumes that "economically feasible oil accumulations would be discovered in all potential areas that multiple anchor fields would be discovered," but there is no explanation on whether or not this assumption still holds for alternatives with more restricted allowable areas to develop and reduced allowable disturbance footprints (i.e., Alternative C and D), which would likely result in a reduced number of wells and lower production (as stated in SEIS Section 3.2.6, Petroleum Resources). Development of Coastal Plain oil and gas is particularly expensive because of its remote location, environmental conditions, and lack of existing pipelines, processing centers, and other infrastructure, and the increased surface disturbance and allowable development area restrictions under Alternative C and D could render the alternative economically infeasible; this is not clearly explained in the alternatives development discussion. Additional explanation of their economic feasibility is needed.	The economic viability of development in the Coastal Plain was not evaluated; the SEIS only addresses the potential environmental consequences of a proposed action. The potential leaseholders will make that evaluation prior to bidding on leases. The development scenarios used to evaluate the economic impacts considered the economic costs of development and potential production from fields of assumed sizes.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	54	Topic Elimination of Alternatives Section # Abstract Page # N/A SEIS Text Alternative C and D2 from the FEIS were not carried forward for analysis in the SEIS. Comment Without explanation, the SEIS Abstract states, "Alternative C and D2 from the FEIS were not carried forward for analysis in the SEIS". § 1502.14(a) of the CEQ regulations states that for alternatives that the agency eliminated from detailed study, it should briefly discuss the reasons for their elimination. This discussion should be added in Chapter 2.4.	Additional text has been added to Section 2.4 to provide explanation why Alternative C from the 2019 Final EIS was not carried forward into the SEIS. As explained in Section 2.3.4 of the SEIS, Alternative D2 from the 2019 Final EIS became Alternative D in the Draft SEIS (with modifications), which is now Alternative D1 in the Final SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	11	The draft SEIS is also redundant with respect to the proposed alternatives. Following its alternatives analysis, BLM must make a decision that is consistent with the Tax Act and take into consideration the purpose of ANWR. BLM, however, utilizes almost the same exact set of alternatives that were included in the 2020 final EIS and ROD. For example, Alternatives "B" and "C" both include nothing more than minor edits to the alternatives included in the prior documents. The proposed Alternative "B," however, now includes additional required operating procedures and no surface occupancy stipulations that will make it nearly impossible to administer the Program. Even more apparent, however, is that Alternative "D" utilizes the same exact analysis as Alternative "D2" in the 2020 final EIS and ROD. BLM states that Alternative "D" corrects legal deficiencies by adequately analyzing a reasonable range of alternatives. BLM cannot be correcting those alleged deficiencies, however, if it is using the same or nearly the same alternatives in which those alleged deficiencies are found. When viewed together, the alternatives that BLM has proposed fail to reflect the actual "Purpose and Need" of the Program and expand the scope of restrictions on production well beyond the 2,000 acre-limit that Congress included in the Tax Act. One can therefore conclude that either the 2020 final EIS contained no legal deficiencies and no further analysis is required, or that BLM's inclusion of Alternative "D" in the draft SEIS is a predetermined outcome based, again, on subjective political revision. BLM should instead remain consistent with itself and re-adopt Alternative "B" from the 2020 final EIS.	The SEIS evaluates a broad range of alternatives, including some that are estimated to involve fewer than 2,000 acres of surface development. Based on comments received on the Draft SEIS, new sub-alternative D2 has been added for the Final SEIS. The alternatives were developed by subject matter experts from both the BLM and USFWS to meet the objective of balancing the five purposes of the refuge.
Not Provided	Not Provided	-	22935	1	Please get it right! Even under the most protective alternative put forth, "no surface occupancy" (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Not Provided	Not Provided	-	23835	2	Even under the most protective alternative put forth, "no surface occupancy" (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. This is wrong and should not be allowed.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Not Provided	Not Provided	-	25380	1	If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Not Provided	Not Provided	-	27730	1	Leases permitting this kind of development should be made extremely difficult to obtain due to the many interactive systems involved and the varying requirements they need in order to maintain the health of the ecosystem - including that of the indigenous cultures within it. Such leases should be expected to include rules and expectations that may vastly exceed those of any current lease operations currently existing, due to the immense fragility and huge global importance of this area. These rules should be closely monitored for compliance, and swiftly and drastically consequenced if violated because of the reasons already stated.	Alternatives D and D2 were developed for the SEIS with concerted input from the Joint Lead Agency Interdisciplinary Teams and cooperating agencies. All action alternatives are designed to meet the purpose and need, and to account for all purposes of the Arctic National Wildlife Refuge.
Not Provided	Not Provided	-	44880	3	Even the "no surface occupancy" alternative has broad, vague stipulations, with plenty of loopholes that still allow for oil & gas infrastructure and development. We need permanent, well-defined protections through Wilderness designation for the entire 19.2 million-acre Arctic Refuge.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Not Provided	Not Provided	-	44970	3	Even under the most protective alternative put forth, "no surface occupancy" (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	45845	2	Why not ADD a requirement that must be met before you choose which company is granted the right to develop the coastal plain? The requirement could be called something like "hazard oversight", which requires the bidding company to pay an amount (that U.S Fish and Wildlife Service chooses, for example, \$750,000 for the first year, which would be adjusted annually for inflation and new hazard oversight needs). The hazard oversight income would be used to hire U.S. Fish and Wildlife employees who would develop expertise in U.S. Fish and Wildlife's minimum clean up contract requirements - in this way, you have a plan for protecting water quantity and quality. Without such a plan, how can you say you're protecting water quality and quantity? Bidding companies are extracting natural resources at NO CHARGE - they're bidding because they believe they will earn profit - beyond cost and taxes - on these resources. The coastal plain is a gift - please use this opportunity to fulfill your lawful duties.	Future funding of this type of governmental activity is beyond the scope of the SEIS. The project-specific review process includes actions to avoid and minimize impacts from oil and gas activities. BLM's management of any oil and gas activities that may occur would be adequate to achieve the intent of this proposal.
Not Provided	Not Provided	-	59568	2	Eliminate the numerous loopholes in the so-called conservation alternative that would allow for harmful infrastructure and activities in areas that are identified as no surface occupancy (NSO). The NSO requirements should instead provide maximum protection.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Not Provided	Emily	-	79183	3	Even within the most protective alternative presented, the "no surface occupancy" stipulations remain broad and undefined, leaving room for potential loopholes that could permit infrastructure and development. I must stress the need for crystal-clear, well-defined, and non-negotiable NSO stipulations in the EIS, especially when meant to provide unwavering protection for the leased tracts.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	14	Page 3-44, Acoustic Environment, Vessel Traffic: "Vessel traffic would be a lesser source of noise but would extend noise impacts into the marine environment along the entire 1,600-nautical-mile marine barge route; there would be underwater-radiated noise effects from commercial ships. These impacts would be short teini and infrequent, with only two trips anticipated per year." Comment: We recommend that industry reach out to the Alaska Eskimo Whaling Commission and enter into a Conflict Avoidance Agreement such that barge activities do not occur during sensitive whaling periods. We approve of ROP 46 which includes stipulations for reducing conflict with whalers and whaling.	Language in Alternative D2, ROP 46 has been updated to include coordination with the Alaska Eskimo Whaling Commission.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	13	The SEIS Fails to Reference and Incorporate the Terms of the ANWR Leases and Ignores that Areas in ANWR Likely to be Leased are Not "Wetlands" under the Supreme Court's Decision in Sackett v. EPA. Prior to their unlawful cancellation, AIDEA's leases provided AIDEA with all the exclusive rights to drill, extract, remove and dispose of all oil and gas as well as build and maintain necessary improvements to include off lease access right of way. For the supposedly NEPA-related provision, one should review Lease Term 6. It briefly requires that prior to disturbing the surface of the leased land, lessee must contact lessor regarding "procedures" to be followed and "modifications" that may be necessary. No specific environmental laws or regulations are referenced in Lease Term 6, e.g., no reference to NEPA. See Attachment A (Copy of leases). The terms of the leases should have been considered and evaluated in the SEIS. Under the requirements of the Endangered Species Act and the National Historic Preservation Act, additional studies may be required of the lessee; at that point, the lessee must, apparently after the studies, stop work and contact the lessor. It is also important to note that most of the areas subject to the AIDEA ANWR leases are located on permafrost. See USGS Permafrost Map of Alaska,(9) As such, under the new definition of "wetlands" mandated by the U.S. Supreme Court decision in Sackett v. EPA, 598 U.S. __ (2023), the lease areas would not be subject to U.S. Army Corps of Engineers (COE) jurisdiction under section 404 of the CWA. (9) https://dggs.alaska.gov/webpubs/usgs/i/oversized/i-0445sht01.pdf	Leases terms will be developed after the ROD is issued and will be included in the detailed statement of sale for the upcoming lease sale. Appendix E outlines laws and regulations that may also apply which will be considered as appropriate during NEPA analysis for site specific proposals on leased tracts.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	52	Topic Alternatives Development Section # 2.2 Page # 2-1 to 2-2 SEIS Text N/A Comment Even though the decisions evaluated in the Leasing Program EIS and its ROD "would not authorize any on-the-ground activity associated with the exploration or development of oil and gas resources" and therefore BLM should not have developed alternatives based on exploration and development, it is unclear how BLM developed the alternative acres of surface disturbance, a critical factor in differentiating the inappropriately constructed alternatives. It is equally unclear how BLM developed and applied the voluminous number of ROPs, NSO stipulations, CSUs, and TLs that vary by alternative. As such, the alternatives are flawed and confuse decision-making.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of balancing the five purposes of the refuge.
Oates	Russell	-	80142	3	Even under the most protective alternative put forth, "no surface occupancy" stipulations are broad and undefined and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the EIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Paternuosto	Alfonsa	-	22187	1	Even under the most protective alternative put forth, “no surface occupancy” (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as “An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis.” This is consistent with the 2019 Final EIS.
Patriana	Zarah	Earthjustice	70590	1	Please develop an alternative that maximally protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich'in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will exacerbate these stresses, cause irreparable harm to this irreplaceable region, and to the millions of birds and other animals that migrate there every summer from around the world, and undermine urgent action to address the climate crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Perry	Gala	-	13451	1	Please consider developing an alternative plan that offers maximum safeguarding for the coastal plain, which is crucial for the Porcupine caribou herd and holds deep cultural significance for the Gwich'in people.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Petkanas	Alex	-	80379	1	The current Draft SEIS does not grant strong enough protections for the Coastal Plain and must be expanded. The region, as several people have said, is a sacred place to a Gwich'in Nation. The risk of devastated cultural loss is not sufficiently acknowledged in this process or in the Draft SEIS.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Pomies	Jackie	-	31876	1	Even under the most protective alternate put forth, “no surface occupancy” stipulations are broad and undefined and there still appear to be loopholes that would allow infrastructure and development.	No-Surface-Occupancy (NSO) is defined as “An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis.” This is consistent with the 2019 Final EIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Proescholdt	Kevin	Wilderness Watch	80104	4	Finally, the agencies propose one stipulation to protect the Mollie Beattie Wilderness, which requires an NSO buffer of three miles from the Wilderness boundary and flights to remain above 2,000 feet within 3 miles of the boundary for Alternative C, and additionally no leasing within 3 miles of the Wilderness boundary under Alternative D. As we previously explained, a 3-mile buffer is insufficient to protect wilderness values in the Mollie Beattie Wilderness under any alternatives and regardless of where development is located. For instance, a simple viewshed analysis demonstrates that infrastructure of any height (or seismic exploration grid lines on the tundra) located across a significant majority of the Coastal Plain would be visible from highpoints within the Mollie Beattie Wilderness. More stringent protections must be put in place to ensure that the oil and gas program does not degrade the qualities of the Wilderness and or run afoul of management under ANILCA and the Wilderness Act.	Specifics such as impacts to viewshed will be evaluated at the proposed-project level. A separate, project-specific NEPA analysis will be required for projects that are proposed in the future.
Raffaeli	Michael	-	19265	4	Even under the most protective alternative put forth, “no surface occupancy” stipulations are broad and undefined and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined, preferably limiting any non-permanent occupancy as well as permanent infrastructure.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Reichardt	Paul	-	79047	1	To me, it seems like BLM is charged with implementing both purposes, even though they are mutually exclusive--at the very least one can't have both "wilderness" and an "oil and gas program." So, the choice is clear--do all you can to maximize adherence to one of these purposes and minimize adherence to the other. My position is that BLM should do all it legally can to preserve the wildlife, wilderness, and recreational values of the Refuge. Thus, I really want adoption of Alternative A, but--reluctantly--I will have to settle for a modified version of Alternative D. In this regard, I have two specific recommendations: 1. Include better defined and unwaivable "no surface occupancy" stipulations for the areas so designated in the draft document. 2. Commit to a well-defined process through which the views of the Gwich'in and Inuvialuit peoples that protecting the Arctic Coastal Plan is central to the survival of the Porcupine Caribou Herd are formally adopted along with appropriate protections. This will entail committing to full cooperation with Canadian organizations and agencies which have interests in the future health of this herd.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Rentschler	Dennis	-	78408	3	Broaden and better define "No Surface Occupancy" to prevent loopholes.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Rich	Sadie	-	80243	5	The BLM should address these deficiencies by reassessing current polar bear den protections and implementing stronger protections for both the Canning River Delta and the Camden Bay area.(27) The BLM must also acknowledge the low success rate of aerial FLTR surveys in the SEIS and that den-detection methods should change as more advanced and accurate technology becomes available. Multiple lease stipulations (LS) and required operating procedures (ROP) - LS 5 (SEIS 2-14), LS 14 (2-24), ROP 10 (2-39-40), ROP 34 (2-65), ROP 46 (2-86) - mention maintaining a 1-mile distance from polar bear dens during denning season. Yet, no scientific information or analysis was used to support the implementation of a 1-mile exclusion zone. The BLM should provide substantial evidence that 1 mile is an adequate distance to maintain from dens to minimize disturbance to denning polar bears.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Rich	Sadie	-	80243	6	The alternatives, lease stipulations (LS), and required operating procedures (ROP) outlined in the SEIS do not grant strong enough protections for the Porcupine Caribou Herd, which the Gwich'in Nation relies on for cultural survival and food security.(33) The BLM should address these deficiencies by looking at caribou migration through a lens of climate change and considering how the Arctic Refuge will change in the coming decades.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Rodar	Jodi	-	3634	1	Please develop an alternative that maximally protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich'in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will exacerbate these stresses, cause irreparable harm to this irreplaceable region, and to the millions of birds and other animals that migrate there every summer from around the world, and undermine urgent action to address the climate crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Roediger	Kathleen A	-	14	3	Thank you for taking steps toward protecting the coastal plain of the Arctic Refuge by canceling oil leases issued unlawfully by the prior administration. I continue to oppose development in the coastal plain, and I call on the Biden administration to do more to firmly protect the Arctic. Please develop an alternative that maximally protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich'in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will exacerbate these stresses, cause irreparable harm to this irreplaceable region, and to the millions of birds and other animals that migrate there every summer from around the world, and undermine urgent action to address the climate crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Rojas	Melissa	Sierra Club	80123	3	The conservation alternative should limit the leasable area to no more than the minimum needed for any mandatory sale, and not an acre more.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Rojas	Melissa	Sierra Club	80123	2	Eliminate the numerous loopholes in the so-called conservation alternative that would allow for harmful infrastructure and activities in areas that are identified as no surface occupancy (NSO). The NSO requirements should instead provide maximum protection.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Rutz	Richard	-	77069	1	The Alternatives in the SEIS do not go far enough to protect the people and wildlife in the Arctic Refuge and must be strengthened. I urge the BLM to revise the draft to: - Re-design the so-called “Conservation” Alternative so that it actually represents a conservation approach! It should limit the leasable area to no more than the minimum needed for any mandatory sale; - Eliminate the numerous loopholes in the “Conservation” Alternative that would allow for harmful infrastructure and activities in areas which are identified as “no surface occupancy” (NSO). The NSO requirements should instead provide maximum protection; - Better protect wildlife resources and values; for example, the vitally important polar bear denning areas in the northwestern part of the Refuge. Even under the “Conservation” Alternative, those areas inexplicably remain vulnerable to seismic exploration, which poses severe danger to polar bear cubs; -Expand the analysis of impacts on subsistence to include the Gwich'in people. The Gwich'in are dependent on the Porcupine Caribou Herd: this is a dependence that is well documented. The analysis currently only considers the impacts on the City of Kaktovik and ignores the significant impacts to the Gwich'in.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
S	M	-	79881	2	• Even under the most protective alternative put forth, “no surface occupancy” (NSO) stipulations are broad and unclear, with apparent loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
S.	Cleone	-	61487	4	No surface occupancy stipulations are without clear definition/loopholes to prevent infrastructure and development.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Schoenhut	Karimah	Sierra Club	79130	1	The Leasing SEIS also reflects a failure by the Bureau of Land Management to evaluate an alternative that will adequately protect denning polar bears from the impacts of seismic exploration and other oil and gas activities, in violation of NEPA and the substantive requirements imposed by the purposes of the Arctic National Wildlife Refuge ("the Refuge").(2) Roughly half of polar bear dens will remain undetected, regardless of the number of aerial infrared surveys, and therefore vulnerable to cub death caused by disturbances from trails, roads, seismic surveys, and other oil and gas activities.(3) Even with the best detection technology available, just one snow trail across the areas proposed for leasing under even the most protective alternative considered (Alternative D) would have a 98.6% probability of at least five undetected maternal dens being exposed to disturbance causing potentially lethal impacts to cubs over the course of twenty years.(4) Further, there is a 63.8% probability that potential lethal disturbance to an undetected den from that trail would occur in at least nine out of twenty years.(5) Thus, the impacts of even a single trail across the areas proposed for leasing cannot be squared with the purposes of the Refuge. Nor could this level of potentially lethal incidental cub take be authorized under the Marine Mammal Protection Act,(6) or Endangered Species Act.(7) Yet even under Alternative D, the proposed program will entail not only a single trail, but rather hundreds of thousands of acres of ice roads,(8) extensive seismic surveys, and other activities and disturbance. It is plain that to reduce these unlawful impacts, the Bureau of Land Management must at least close the areas within both the western and central denning hotspots to leasing. (2) See ANILCA § 305; Public Land Order 2214, Establishing the Arctic National Wildlife Range at 1 (Dec. 6, 1960); FWS Refuge Management Part 601 National Wildlife Refuge System, 601 FW 1 at 1.16 (July 26, 2006); U.S Fish and Wildlife Service, Arctic National Wildlife Refuge, Revised Comprehensive Conservation Plan Final Environmental Impact Statement, Chapter 1 at 1-21. (3) See Attachment 1A - Trent McDonald, Polar Bear Dens Disturbed by Road Activity, Deadhorse to Kaktovik Road Impacts Within Arctic National Wildlife Refuge, October 27, 2023 (report prepared for Sierra Club) at 3 (46.1% of dens in Refuge would have snow cover depths precluding detection using the 100 cm cut-off value) (hereafter "Trent McDonald 2023 Report"). (4) Attachment 1A - Trent McDonald 2023 Report at 4. (5) Id. (6) See Wilson and Durner (2020), Seismic Survey Design and Effects on Maternal Polar Bear Dens, Journal of Wildlife Management 84(2): 201-212, DOI: 10.1002/jwmg.21800, at 203. (7) See 16 U.S.C. § 1536(b)(4)(C) (allowing authorization of incidental take of marine mammals via incidental take statement only if the taking has been authorized under section 1371(a)(5) of Marine Mammal Protection Act). (8) See Leasing SEIS Table 3-26, Vol. 1 at 3-104.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Schoenhut	Karimah	Sierra Club	79130	2	Unfortunately, the Leasing SEIS has: -failed to consider any alternative that actually places "maximum emphasis" on avoiding injury or mortality due to seismic surveys and other oil and gas activities; -failed to take a hard look at the impacts of seismic surveys and roads on denning polar bears, and exaggerated the adequacy of Alternatives C and D by obscuring the failure of the alternatives to protect a high-density denning area in the northwestern portion of the Coastal Plain from road and seismic survey impacts; -irrationally inflated the effectiveness of mitigation measures imposed under Marine Mammal Protection Act (MMPA) Incidental Take Regulations ("ITRs"); -failed to adequately evaluate how the different conditions in the Refuge compared to other areas covered by ITRs, such as snow depth cover over dens, make it even less likely that mitigation measures will avoid injury and death of cubs due to snow/ice roads and seismic surveys; -utterly failed to acknowledge that the U.S. Fish and Wildlife Service interprets the MMPA's "negligible impact" standard in a manner that ignores injurious and lethal impacts despite those impacts being sufficiently probable that a person of ordinary prudence would take them into account.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Schoenhut	Karimah	Sierra Club	79130	8	The SEIS Arbitrarily Fails to Consider an Alternative that Would Exclude the Polar Bear Denning Hotspots from Leasing Although the timing limitation under Lease Stipulation 5 for Alternatives C and D provides necessary protection from harms caused by seismic surveys and other activities, it is not sufficient to ensure that BLM satisfies its duties under the ESA or satisfies the purposes of the Refuge, and BLM should instead make the core denning hotspot areas unavailable for leasing. Both the NSO restrictions and the timing limitations under Lease Stipulation 5 for Alternatives C and D expressly may be waived if "the BLM Authorized Office approves alternative protective measures." This loophole foreseeably would allow the protections to be gutted, in particular due to BLM's interpretation of section 20001(c)(2) of the Section 20001(c)(1) of PL 115-97, whereby any activity deemed "essential" ostensibly would be authorized, regardless of the NSO or TL restrictions under the lease stipulation. As FWS recognized in a 2019 memo to BLM, the only way to ensure that denning polar bears in the hotspots are sufficiently protected from seismic exploration and other disturbing activities is to make those hotspots unavailable for leasing.(23) FWS informed BLM in a memo dated April 8, 2019 that operators/lessees obtaining MMPA authorization for seismic surveys on the Coastal Plain of the Arctic Refuge would be "problematic" for the denning hotspot areas.(24) FWS recommended that BLM exclude from leasing areas that overlap with high to medium polar bear denning density because "these areas will be problematic for permitting winter activities under Marine Mammal Protection Act."(25) That FWS memo provided this map (See attached PDF for Figure) depicting the location of the high to medium polar bear density areas that FWS recommended be excluded from leasing at that time. (23) See Attachment 4A - U.S. Fish and Wildlife Service. April 9, 2019 Memorandum to BLM Regarding Recommendations for No Leasing Areas to Create an 800,000 Acre Alternative in the 2018 Draft Environmental Impact Statement (DEIS) for the Coastal Plain Oil and Gas Leasing Program for the Arctic National Wildlife Refuge, Alaska. (24) See id. (25) Id.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Schoenhut	Karimah	Sierra Club	79130	3	The SEIS Obscures that None of the Action Alternatives Provide Adequate Protection to Denning Polar Bears The Leasing SEIS concedes that den detection methods will fail to detect "6 to 11" of the 14 maternal dens it estimates will occur annually on the Coastal Plain,(11) and that undetected dens will be susceptible to polar bear injury and death due to seismic surveys.(12) Seemingly in recognition of the inadequacy of den detection methods, Lease Stipulation 5 under Alternatives C and D includes a timing limitation to exclude oil and gas activities (such as seismic surveys) from occurring during denning season within one mile of denning habitat within the bounds of two small regions-a central region and an eastern region, as shown on Maps 2-4 and 2-6.(13) (11) Leasing SEIS at 3-249. (12) Leasing SEIS at 3-254, 3-255 to 3-256. (13) Leasing SEIS Appendix A. The bounds of these two regions correspond to the core portions of areas that FWS has identified as high and medium density "hotspots" for polar bear maternal denning.(14) The figure below (See attached PDF for Figure) from Wilson and Durner (2020)(15) illustrates the locations of those two denning hotspots, as well as the third hotspot, a very high-density denning region in the northwest corner of the 1002 area that is not protected at all by the timing limitation of Lease Stipulation 5 under any alternative. (14) See Durner, George M., Steven C. Amstrup, and Anthony S. Fischbach (2003), "Habitat Characteristics of Polar Bear Terrestrial Maternal Den Sites in Northern Alaska," Arctic (56): 55-62. (hereafter "Durner (2003)"). at Fig. 1 ("Wilson and Durner (2020)"); Marine Mammals; Incidental Take During Specified Activities; North Slope, Alaska. 86 Fed. Reg. 42,982 (Aug. 5, 2021) at 43026-28 ("we followed a similar approach to that used by Wilson and Durner (2020)"); id. at Figure 6 (showing modeled denning densities across North Slope, include on the Coastal Plain of the Refuge). (15) Wilson and Durner (2020), Seismic Survey Design and Effects on Maternal Polar Bear Dens, Journal of Wildlife Management 84(2): 201-212, DOI: 10.1002/jwmg.21800. The figure below (See attached PDF for Figure) from Patil et. al (2022)(16) similarly shows that historical denning data from 2000 to 2015 indicates the highest density denning area in recent decades was located in the northwestern portion of the 1002 area. (16) Patil, V. P., Durner, G. M., Douglas, D. C., & Atwood, T. C. 2022. Modeling the spatial and temporal dynamics of land-based polar bear denning in Alaska. Journal of Wildlife Management, 86(8), 1-22. https://doi.org/10.1002/jwmg.22302 , Fig. 4.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Schoenhut	Karimah	Sierra Club	79130	14	The SEIS Arbitrarily Relies Only on the Durner et al. (2006) Delineation of Polar Bear Denning Habitat to Define the Areas Protected Under Lease Stipulation 5 The terms of Lease Stipulation 5 arbitrarily protect only suitable denning habitat delineated in 2006 by the Durner study, despite more recent science from 2018 demonstrating that extensive suitable denning habitat is present outside those areas. Durner and Atwood (2018)(38) identified many areas of suitable denning habitat outside of the areas delineated by Durner (2006). As biostatistician Dr. McDonald explained, "for every hectare of habitat in the photo derived map, there is 1.3 hectares of habitat in the IfSAR map."(39) Only 54% of the IfSARidentified habitats were within 200 m of the Durner et al. (2006) ground-truthed habitats.(40) Thus, substantial amounts of suitable denning habitat appear to be present in areas outside of the areas delineated by Durner (2006). The SEIS appears to acknowledge the relevance of the 2018 study, which it purports to use to present the amount of suitable denning habitat in Table 3-39, as well us in Map 3-40 (Appendix A).(41) (38) Durner et al. (2018), A comparison of photograph-interpreted and IfSAR-derived maps of polar bear denning habitat for the 1002 Area of the Arctic National Wildlife Refuge, Alaska: U.S. Geological Survey Open-File Report 2018-1083, https://doi.org/10.3133/ofr20181083 . (39) See Attachment 3A - Trent McDonald, January 5, 2021 Report Regarding Kaktovik Iñupiat Corporation Incidental Harassment Authorization for Polar Bears in the Arctic National Wildlife Refuge, at section 4. (40) See id. at section 5. (41) Leasing SEIS at 3-233 to 3-234, 3-245.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Schoenhut	Karimah	Sierra Club	79130	15	The SEIS states: "Potential maternal denning habitat identified on an IfSAR digital terrain model (Durner and Atwood 2018) totaled 18,200 acres in the program area. This constitutes high-priority habitat that would need to be surveyed for dens each winter before exploration or development begins (Table 3-39)."(42) Yet Lease Stipulation 5, without explanation, turns on the denning habitat as mapped only by the Durner et al. (2006) study, and makes no reference to the 2018 IfSAR mapping.(43) By basing the restrictions of Lease Stipulation 5 only on the 2006 delineation of denning habitat, BLM may be arbitrarily leaving key denning habitat without the intended protections. To better ensure the intended protections are achieved, BLM should provide that Lease Stipulation 5's protections apply with reference to habitat delineated under the 2018 mapping as well as the 2006 mapping. Otherwise, the SEIS should assess and explain the impact of basing that stipulation on the 2006 mapping only. (42) Leasing SEIS at 3-245. (43) Leasing SEIS at 2-14.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Seiser	Pam	-	79787	1	The no-action Alternative A is not considered in the SEIS as a viable alternative because leasing is mandated by the Section 20001(c)(1) of PL 115-97. However, I believe that oil and gas activities on the coastal plain will have unavoidable destructive impacts on Arctic Refuge wildlife habitat and climate, and threaten the food security of Indigenous peoples. Mitigation for oil and gas drilling could never be sufficient to protect the conservation purposes of the Refuge. We requested that Alternative A be reconsidered in the final EIS. We also urged selection of a preferred alternative that protects the Refuge in perpetuity. The Arctic National Wildlife Refuge is mainly pristine, and has supported Indigenous people of northern Alaska for time immemorial.	Alternative A would not meet the requirements of Section 20001(c)(1) of PL 115-97 and cannot be selected. The "no action alternative" is used for baseline comparisons.
Seiser	Pam	-	79787	2	Alternatives B, C, and D do not balance the purpose of oil and gas development that the Tax Act of 2017 added to the Refuge purposes with the original four conservation purposes specified in ANILCA. This fifth purpose is inherently incompatible with the other four. Oil and gas development would take priority and precedence over the conservation purposes for which the Refuge was established in all of these alternatives by causing irreversible environmental changes (including additional carbon emissions that contribute to global warming) as projected in the environmental analysis. Alternative D is the best attempt at mitigating the impacts through a reduced footprint for development and lease and operational mitigating measures, provided the measures are implemented and enforced. Alternative D, however, does not go far enough to protect fish and wildlife and their habitats, particularly for the Porcupine caribou herd and polar bears, or subsistence use of the Refuge.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Sigman	Marilyn	-	78189	5	"No surface occupancy" stipulations are broad and undefined and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and with no grounds for wavers in the final SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
snawadzki	mark	-	39481	1	These activities are not compatible with Wilderness and Wildlife Refuge designations. " No surface occupancy" stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. These stipulations need to be well defined to protect the land from any development.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Sofia	Anna	Center for Biological Diversity	78997	1	As part of this environmental impact process, you must develop an alternative that protects the coastal plain of the Arctic Refuge from future oil leasing in the strongest way possible.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Stewart	Sarah	-	29334	3	Even under the most protective alternative put forth, “no surface occupancy” (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Stickman	Danielle	-	80457	1	We are also grateful for the Interior undertaking in SEIS that attempts to provide a balance of options, and recognizes the concerns of the millions of people who believe this beautiful and sacred land should never be turned into an oil field. Unfortunately, none of the action alternatives, as currently proposed, sufficiently protect the Coastal Plain to meet the purposes of the Refuge. Thus, we believe the agencies must do more to strengthen protections.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Storm	Dean	-	72923	2	Alternative plans so far do not legislate "no surface occupancy" rules, which are needed to prevent housing and industrial development projects. These loopholes need to be closed.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Strassenburgh	John	-	80071	6	In previous iterations of the coastal plain SEIS/EIS process, the BLM misinterpreted the 2000 acre limitation and defined it so narrowly that it became meaningless, and essentially had no effect on the scale of development in the Arctic Refuge Coastal Plain. The draft SEIS changed that, and is a vast improvement in reflecting the historic intent of the 2000 acre limitation and conforming to the plain language of Section 20001 of the 2017 Tax Act. However, the draft SEIS, nonetheless, lacks clarity in some places and has loopholes that weaken the effectiveness of the 2000 acre limitation. Looking at Alternative D, for example, it is not clear whether 1040 acres is a hard cap on development. It should be a hard cap, but it is a little confusing because Table B-5 title indicates hypothetical. It is important that the final SEIS clarify whether the 1040 acres of Alternative D is a hard cap or a hypothetical example, and whether up to 2000 acre surface disturbance is allowed under Alternative D.	The RFD acreages are estimates, whereas the 2,000-acre cap is set by statute. Regardless of which alternative is selected in the ROD, per Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section."

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Strassenburgh	John	-	80071	11	There are many instances of subjective language in the draft SEIS documents, which could lead to undermining the intent of stipulations/requirements. For example, the word "minimize" is a relative, objective term. There are instances where the word "minimize" is used when there is neither an objective standard nor an outright prohibition for particular activities. This would lead to variety of interpretations of particular stipulations or requirements, and an overall weakening of such stipulations or requirements. I recommend wider use of objective standards and use of the terms like "prohibit" rather than "minimize".	Subjective language allows for flexibility in management actions. This flexibility allows for adaptive management that reflects changing on-the-ground conditions at the time of future project specific analysis.
Strassenburgh	John	-	80071	7	At the bottom of page 1-9 (section 1.9.1), snow trails do not count in the 2000 acre (or 1040) limit. All snow trails are not created equal, depending on snow depth, and have varying effects on the ground vegetation. Language should be inserted in the final SEIS to require that snow depth be sufficient to protect the underlying vegetation in order to not count against the 2000 acre limit. Also on page 1-9, 4th paragraph, the use and definition of "non-ephemeral" facilities is vague and open to broad interpretation and potentially significant abuse. The language does not explicitly limit a non-ephemeral facility to winter time and doesn't say anything about protecting the underlying vegetation.	Each of the action alternatives contain different wording for snow depth and/or SWE requirements to analyze a range of options and resulting potential impacts on resources. Each of these snow depths are based on best available information regarding their creation and use while protecting resources.
Stucky	Jyoti	-	20236	1	I'm writing in response to your draft supplemental environmental impact statement that offers a conservation option to ensure higher protections for the Arctic National Wildlife Refuge. That conservation option must be strengthened to ensure the area's irreplaceable ecological and cultural values are fully protected from the threat of oil and gas development. Decades ago, the Arctic Refuge—America's largest wildlife refuge—was set aside for protection due to its critical ecological and cultural value. And prior to 2017, the Arctic Refuge was off limits to oil and gas development. Long before the Trump administration, it was well known that what happens to Arctic communities impacts us nationally.??Melting sea ice and glaciers contribute to sea-level rise that threatens to inundate coastal cities in the lower 48 states and around the globe. Atmospheric disturbances caused by a warming Arctic cause wild swings in the jet stream, result in weather extremes across the continental U.S., including more dangerous fire seasons, excessive heat and cold spells, etc. Additionally, Alaska's Indigenous Ifupiat and Gwich'in people have lived in what is now the Arctic Refuge for thousands of years. Their traditional and cultural hunting and gathering activities still provide the foods necessary to nourish their bodies, souls, spirits, traditions and cultures. In particular, the Gwich'in depend on the Porcupine Caribou Herd for the majority of their diet, and the herd depends on the coastal plain as a calving and nursing ground. Gwich'in people consider Arctic Refuge drilling a threat to their survival, and protecting the refuge is a matter of human rights.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Sullivan	Emily	-	80384	3	We urge you to strengthen protections for Arctic communities, the Porcupine Caribou Herd, for Canyon River, and Camden pa -- Camden Bay polar bears, and for the Coastal Plain, and all our -- all alternatives in the SEIS.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Terwilliger	Laurie	-	73980	2	None of the alternatives - B, C, D provide strong enough protections for the Porcupine Caribou Herd upon which the Gwich'in depend for subsistance and cultural preservation.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
Thessen	J	-	45847	1	Why not ADD a requirement that must be met before you choose which company is granted the right to develop the coastal plain? The requirement could be called something like "hazard oversight", which requires the bidding company to pay an amount (that U.S Fish and Wildlife Service chooses, for example, \$750,000 for the first year, which would be adjusted annually for inflation and new hazard oversight needs). The hazard oversight income would be used to hire U.S. Fish and Wildlife employees who would develop expertise in U.S. Fish and Wildlife's minimum clean up contract requirements - in this way, you have a plan for protecting water quantity and quality.	Future funding of this type of governmental activity is beyond the scope of the SEIS. The project-specific review process includes actions to avoid and minimize impacts from oil and gas activities. BLM's management of any oil and gas activities that may occur would be adequate to achieve the intent of this proposal.
Van Atta	Karen	-	44964	7	The "no surface occupancy" (NSO), stipulations are too general. As written and there is still potential for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

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vanessa	Paula	-	25034	2	Even under the most protective alternative put forth “no surface occupancy”, stipulations are broad and undefined, and there still appear to be loopholes, that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts they must be well-defined and un-waivable in the Draft SEIS. The coastal plain is a sacred place to the Gwich’in Nation and the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich’in people by oil and gas leasing programs.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Viandier	Jamila	-	22786	2	Even with the maximum amount of protections proposed ("no surface occupancy" or NSO), the terms are too broad and do not specify completely excluding infrastructure and development.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Wald	Michael	-	20420	9	Further, there should be an alternative which leases no more acreage than is required by law.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Wald	Michael	-	20420	6	Specifically, NSO stipulations should be strengthened to eliminate all development that may injure natural resources.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Walsh	Cheri	-	275	1	Please develop an alternative that maximally protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich’in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will exacerbate these stresses, cause irreparable harm to this irreplaceable region, and to the millions of birds and other animals that migrate there every summer from around the world, and undermine urgent action to address the climate crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Wardlow	Cyndi	The Wildlife Society- Alaska Chapter	80261	7	The Interior should offer an alternative with the fewest acres necessary to meet Tax Act requirements to best preserve critical Arctic habitat on the Coastal Plain. Alternative D should offer no more than 400,000 acres for lease sale. The Tax Act states, "not fewer than 400,000 acres area wide in each lease sale [and] those are areas that have the highest potential for the discovery of hydrocarbons." Both the Refuge Act and ANILCA require the Interior ensures that the Refuge's original purposes are fully realized. As these purposes are complicated by oil and gas development, the fewest legally mandated acres should be offered in no less than one viable alternative of the draft SEIS. For example, Under ANILCA, the first purpose for which the Refuge was established and managed is "to conserve fish and wildlife populations and habitats in their natural diversity." Given that the Coastal Plain provides critical habitat for the Refuge's diversity of fish and wildlife, offering more than the required minimum acreage necessarily constrains this management requirement. Offering more acres than required may have particularly dire consequences for some of the most sensitive elements of the Refuge's ecosystem, as high and medium carbon potential areas overlap with some of the most sensitive habitat areas. Polar bear habitat will be disproportionately affected by increased acreage. According to the draft SEIS, polar bear terrestrial denning habitat occupies "76.3 percent (1,193,000 acres) of the program area." Known dens and potential maternal denning habitat are at highest risk in the combined high and medium hydrocarbon potential zones. The draft SEIS observed that "the most denning habitat (75 percent) and number of documented dens (95 percent)" occur in these areas. As it is currently written, Alternative D permits development on the vast majority of the acreage identified as potential maternal denning habitat. Even with the proposed no-surface occupancy (NSO) stipulations, these areas would still be subject to harmful seismic exploration that could result in "moderate to major direct impact on the [Southern Beaufort Sea] SBS population of bears." Reducing the total acreage to the 400,000-acre minimum would reduce this risk to denning polar bears and maintain better consistency with ANILCA. In addition, as was written in the USFWS 2019 letter, the agency should exclude leasing on the areas most likely to contain polar ben dens. SBS Polar bears are threatened under the Endangered Species Act (ESA) with more habitat loss accruing yearly. The draft SEIS states that the "most important characteristic of maternal denning habitat is the presence of topographic features of sufficient height and slope to catch blowing snow and form persistent drifts in early winter, with at least 4.3 feet of vertical topographic relief and steep slope." This informed the draft SEIS's maps that identified over 18,000 acres as "estimated area of potential maternal denning habitat." As a species protected by the ESA, the agency should afford as many protections as possible while developing critical denning habitat determinations and exempt this area from leasing. In addition, there need to be adequate buffers in place that are sufficient to protect dens, mothers, and cubs from the impacts of seismic explorations. The agency has authority to exclude high hydrocarbon potential areas from development as is seen in both Alternatives C and D that include less than 400,000 acres of high hydrocarbon potential areas because of protections afforded to springs and aufeis in the high hydrocarbon zones. The agency should do the same to protect polar bears. Similarly, the Porcupine Caribou Herd (PCH) must be considered in this capacity. Like denning for polar bears, calving and post-calving areas for PCH are disproportionately affected by the acreage and distribution of areas offered under Alternative D. The draft SEIS highlights the harmful effects of development on the PCH. In particular, it notes the impact of roads and other infrastructure. A well-studied consequence of road infrastructure on caribou is the potential for widespread displacement. Alternative D allows for development on thousands of acres of potential PCH calving grounds. Even in areas where NSO stipulations are mandated, the draft SEIS acknowledges that there are exceptions and "it is likely that roads will cross areas with NSO restrictions to access leased areas," that "there likely will be some displacement of maternal caribou during calving," and further that development "could cause delays or deflection of [PCH] and Central Arctic Herd [CAH] animals during post-calving movement." Displacement during calving is associated with declines in calf survival and displacement in the post-calving period is associated with increased nutritional and physiological stress. We recognize that while some leasing conditions like NSO stipulations may reduce some of this stress, they cannot eliminate it. Reducing the total acreage available for leasing under Alternative D to an ecologically selective 400,000 acres would further help mitigate some of the unavoidable consequences of development on the Coastal Plain.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

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Wardlow	Cyndi	The Wildlife Society- Alaska Chapter	80261	9	The draft SEIS must develop and explicitly describe a comprehensive monitoring plan and conservation strategy for the coastal plain of the Arctic Refuge and describe how this monitoring program will be coordinated with monitoring across the entire North Slope. The monitoring plan must be capable of determining adverse effects of oil and gas development on the wildlife, plants, waters, and frozen soils of the coastal plain and substantiating beneficial effects of any mitigation measures proposed in the draft SEIS. Other than the Arctic National Wildlife Refuge, there are no landscape-scale protected areas on the coastal plain of our nation's only Arctic ecosystem. Climate change is occurring four times faster in the Arctic than anywhere else in the U.S. In August, the National Academy of Sciences published recent findings that permafrost is now projected to be up to 75% melted by the end of the century. The devastating effects of this level of permafrost melt is not reviewed in the draft SEIS. Without a comprehensive monitoring plan and a network of protected areas to serve as a baseline for scientific monitoring, scientists will be unable to evaluate the effects of climate change on arctic fish and wildlife or the ecosystems that support them. It would be highly risky to commit the entire coastal plain of America's only Arctic ecosystem to industrial development without a master plan for conservation and monitoring. The draft SEIS is seriously flawed unless it can explicitly address this important issue. We recognize that there will be significant impacts from development infrastructure on fish and wildlife resources, their habitats, and the human uses of those resources, including subsistence use and wilderness recreation. Without a scientific benchmark to serve as a control and a comprehensive monitoring plan, industrial development of the entire arctic coastal plain (including the Arctic Refuge) would be very risky for conservation of Refuge resources and would not provide an opportunity for adequately assessing potential environmental effects and for comparing costs vs. benefits of development.	Many lease stipulations and required operating procedures in the SEIS require ongoing monitoring and adaptive management to account for changing conditions. Additionally, Lease Stipulation 13 requires a master development plan that minimizes the areal extent of development and redundant infrastructure by a single operator and among multiple operators.
Warren	Greg	-	72931	7	Draft SEIS: Alternative Development at 2-1 states, "Any decision that the BLM makes following the analysis in this Leasing SEIS must be consistent with PL 115-97 and take into consideration all of the Arctic Refuge's purposes set out in Section 303(2)(B) of ANILCA, as amended by Section 20001(b)(2)(B) of PL 115-97. Decisions must also conform to other applicable laws and regulations. The joint lead agencies used these screening criteria to help evaluate potential alternatives: -Does the suggested alternative component meet the purpose of and need for the program? -Is the alternative component economically, technologically, and logistically feasible?" Comment: Alternatives and the Purpose and Need are related. The Purposed and Need should clearly describe the need to provide for all of the purposes of the Arctic Refuge. Only considering and accounting for all of the purposes of the Arctic Refuge could lead to actions inconsistent with ANILCA. The Purpose and Need should recognize that Public Law 115-97 directs that the BLM promulgate new regulations that address the direction in the law that states that the, "Secretary shall manage the oil and gas program on the Coastal Plain in a manner similar to the administration of lease sales under the Naval Petroleum Reserves Production Act of 1976 (42 U.S.C. 6501 et seq.) (including regulations)." The Section 20001(c)(1) of PL 115-97 directs that BLM follow processes that are similar to the 42 U.S.C. 6501 regulations, which indicates that the law excludes specific direction in 43 CFR Parts 3130, 3150, and 3160 for authorities for an action or process in the Arctic National Wildlife Refuge. New regulations need to be developed that are similar to the 42 U.S.C. 6501 regulations, while also providing for Arctic Refuge surface protection. Not having such regulations finalized is a concern with the analyses in the Draft SEIS and of the proposed decisions to be made. At a minimum, new regulations should allow for leasing with a No Surface Occupancy requirement that cannot be waived or modified. I presented three reasonable alternatives in scoping comments that should have been developed and analyzed in detail in the Draft SEIS. A purpose of these alternatives was to focus any surface development of Coastal Plain lands to the western side of the refuge, believing that this approach would result in fewer overall developments, including those mandated by Section 20001 (c)(2) which describes that, "RIGHTS-OF-WAY. - The Secretary shall issue any rights-of-way or easements across the Coastal Plain for the exploration, development, production, or transportation necessary to carry out this section." The prescriptive direction of Section 20001 part (c)(2) is most problematic for surface resources. This legislative direction that mandates development is counter to many existing laws and regulations that govern the protection of Arctic Refuge surface values. The BLM and FWS do not retain substantial rights allowing them to regulate rights-of-way and easements on the Coastal Plain. In order to protect surface values, surface development will need to be strategic and limited focusing on the western side of the Coastal Plain. The Coastal Plain Oil and Gas Leasing Program Supplemental Environmental Impact Statement will inform the BLM's implementation of PL 115-97, Section 20001(c)(1), which requires the BLM to hold not fewer than two oil and gas lease sales. I recommend that the BLM only offer lands on the western side of the Coastal Plain in the next oil and gas lease sale.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Warren	Greg	-	72931	8	Proposed Alternative W1 This proposed Alternative W1 limits oil and gas exploration and surface development, with the intent being that development actions do not materially interfere with achieving Coastal Plain surface resource purposes. Proposed Alternative W1 allows for 200 surface acres on the Coastal Plain to be covered by production and support facilities. The surface development area would be within 6 miles of the Canning River. This alternative would also provide for an oil and gas program in the Arctic Refuge Coastal Plain through horizontal and extended reach drilling. This alternative would limit the degradation of surface resource values resulting from seismic activities (see Attachment D). -Seismic Surveys - - Seismic surveys would only be permitted within 6 miles of the center point of the area identified on the map for Alternative W1 for surface occupancy. -Seismic surveys would be subject to a U.S. Fish and Wildlife Service compatibility determination. - NSO stipulations as identified on the Alternative W1 map would not be waived, granted an exception, or modified. -A seawater treatment plant, barge landing, and Central Processing Facility would not be permitted within the Arctic National Wildlife Refuge. -Further development of this alternative would follow the guidance in BLM regulation 43 CFR § 3101.5-3 - Alaska Wildlife Areas. (See Attached PDF Submission for "Alternative W1 Map")	The BLM/USFWS reviewed the proposed new alternative and determined that this would not meet the purpose and need of the SEIS and would not account for all five purposes of the Refuge, as required by PL 115-97. The reasonably foreseeable development scenario in the SEIS takes into account the best available information and industry needs for leasing, development, production, and transportation of oil and gas.

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Warren	Greg	-	72931	9	Proposed Alternative W2 Proposed Alternative W2 limits oil and gas exploration and surface development, with the intent being that development actions do not materially interfere with achieving Coastal Plain surface resource purposes. Proposed Alternative W2 would allow for up to 600 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities. This alternative also provides for an extensive oil and gas program in the Arctic Refuge Coastal Plain through horizontal and extended reach drilling. This alternative would limit the degradation of surface resource values resulting from seismic activities (see Attachment D).(1) (1) The ID Team should consider modifying the no leasing area on the western side of the refuge in the proposed W2 alternative to be consistent with the area proposed in the Draft SEIS Alternative D. -Seismic Surveys - -Seismic surveys may be permitted within the area identified for surface occupancy. - Seismic surveys may be permitted within 6 miles of the outer boundary of this surface occupancy area. -Seismic surveys would not be allowed in other areas of the Coastal Plain. -Seismic surveys would be subject to a U.S. Fish and Wildlife Service compatibility determination. -NSO stipulations as identified on the Alternative W2 map would not be waived, granted an exception, or modified. -A seawater treatment plant, barge landing, and Central Processing Facility would not be permitted within the Arctic National Wildlife Refuge. -Further development of this alternative would follow the guidance in 43 CFR § 3101.5-3. (See Attached PDF Submission for "Alternative W2 Map")	The BLM/USFWS reviewed the proposed new alternative and determined that this would not meet the purpose and need of the SEIS and would not account for all five purposes of the Refuge, as required by PL 115-97. The reasonably foreseeable development scenario in the SEIS takes into account the best available information and industry needs for leasing, development, production, and transportation of oil and gas.
Warren	Greg	-	72931	10	Proposed Alternative W3 Proposed Alternative W3 may provide for the collective purposes of the Arctic Refuge Coastal Plain. -A seawater treatment plant, barge landing, and Central Processing Facility would not be permitted within the Arctic National Wildlife Refuge. -Further development of this alternative would follow the guidance in 43 CFR § 3101.5-3. -This alternative depicts potential leasing tracts that may contribute to protecting surface resources (see Attachment C). -This alternative would limit the degradation of surface resource values resulting from seismic activities (see Attachment D). Suggested analysis units and potential leasing tracts for Proposed Alternative W3-see map on page 9: 1 43,000 acres 8 20,000 acres 14 59,000 acres 2 56,000 acres 9 53,000 acres 15 49,000 acres 3 56,000 acres 10(2) 17,000 acres 16 34,000 acres 4 38,000 acres 29 24,000 acres 17 34,000 acres 5 43,000 acres 11 15,000 acres 18 53,000 acres 6 47,000 acres 12 50,000 acres 19 37,000 acres 7 48,000 acres 13 28,000 acres 32 42,000 acres (2) The ID Team should consider modifying lease tract 10 to be consistent with the proposed Draft SEIS Alternative D no leasing area.	The BLM/USFWS reviewed the proposed new alternative and determined that this would not meet the purpose and need of the SEIS and would not account for all five purposes of the Refuge, as required by PL 115-97. The reasonably foreseeable development scenario in the SEIS takes into account the best available information and industry needs for leasing, development, production, and transportation of oil and gas. In addition, the design and configuration of the lease tracts is outside the scope of this NEPA analysis.
Warren	Greg	-	72931	11	The following are specific comments on each of the recommended analysis units and potential lease tracts for Alternative W3: -Canning River Delta - Tracts 5, 6, 9, and 29. Leasing of these tracts would be subject to a No Surface Occupancy (NSO) stipulation. Seismic surveys would not be permitted. A NSO stipulation and not permitting seismic surveys would protect fish and wildlife natural diversity and water quality and quantity of this biological rich delta. A NSO stipulation would help conserve the polar bear. NSO stipulations would not be waived, granted an exception or modified. -Conserving the Polar Bear - Tracts 8, 9, 10, 14, 15, 18, 19, and 32. Leasing of these tracts would be subject to a No Surface Occupancy (NSO) stipulation. Seismic surveys would not be permitted. A NSO stipulation and not permitting seismic surveys would help conserve the polar bear and protect important coastal wetlands. These areas would contribute to protecting Porcupine Caribou Herd habitat. NSO stipulations would not be waived, granted an exception or modified. Porcupine Caribou Herd and Protecting Natural Diversity - Tracts 4, 7, 16, and 17. Leasing of these tracts would be subject to a No Surface Occupancy (NSO) stipulation. Seismic surveys would not be permitted. A NSO stipulation and not permitting seismic surveys would help protect fish and wildlife natural diversity and water quality and quantity. NSO stipulations would not be waived, granted an exception or modified. Not leasing the area identified as Tract Area 99 would protect Porcupine Caribou herd habitat and many other species of fish and wildlife, conserves polar bear habitat, and maintains water quality and quantity. Seismic surveys would not be permitted in Area 99. Providing for a Coastal Plain Oil and Gas Program on Surface Use Areas - Tracts 1, 2, 3, 11, 12, and 13. Controlled surface use of these tracts would provide for the oil and gas purposes of the Tax Act. Horizontal drilling from these tracts and state land and water may contribute to a Coastal Plain oil and gas program. Seismic surveys may be permitted. Seismic surveys would be subject to a U.S. Fish and Wildlife Service compatibility determination. (See Attached PDF Submission for "Alternative W3 Map") Lease Availability/Stipulations Acres Alt. W1 Alt. W2 Alt. W3 Subject to No Surface Occupancy 813,300 763,500 598,000 Subject to Controlled Surface Use 200 50,000 248,000 Total available for lease sales 813,500 813,500 846,000 Not offered for lease sales 750,000 750,000 718,000	The BLM/USFWS reviewed the proposed new alternative and determined that this would not meet the purpose and need of the SEIS and would not account for all five purposes of the Refuge, as required by PL 115-97. The reasonably foreseeable development scenario in the SEIS takes into account the best available information and industry needs for leasing, development, production, and transportation of oil and gas. In addition, the design and configuration of the lease tracts is outside the scope of this NEPA analysis.
Warren	Greg	-	72931	5	Draft SEIS: Arctic National Wildlife Refuge at 1-5 states, "The USFWS would continue management of Arctic Refuge lands under the guidance of its current comprehensive conservation plan (CCP) (USFWS 2015a) and any amendments thereto...." Comment: Development alternatives in the Draft SEIS are inconsistent with the CCP, which is not addressed in this Draft SEIS. The scope of the leasing EIS should be expanded to amend the CCP, and at a minimum, the Draft SEIS should have recognized that the proposed development actions on the Coastal Plain are incompatible with the current CCP direction.	All action alternatives are designed to meet the purpose and need, and to account for all purposes of the Arctic National Wildlife Refuge. The USFWS CCP (2015) may be revised in the future to address the five purposes of the Refuge, as amended by Section 20001(c)(1) of PL 115-97, and their management strategies

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Warren	Greg	-	72931	12	Draft SEIS: Alternative B and C discussion at 2-4 summarizes these two alternatives. Comment: These alternatives allow for actions that would materially interfere with and detract from the fulfillment of the National Wildlife Refuge System mission and the Arctic Refuge purposes of conserving fish and wildlife populations and habitats, water quality and necessary water quantity within the refuge. These development focused alternatives would result in multiple seismic surveys, numerous rights-of-way being established, and industrial scale oil and gas production operations and facilities. In addition, adjacent state lands and waters are also slated for similar developments. The direct, indirect, and cumulative effects of these developments on the Arctic National Wildlife Range Coastal Plain would be significant and materially interfere with or detract from Arctic National Wildlife Refuge purposes of conserving fish and wildlife populations and habitats in their natural diversity, including conserving the polar bear. The FEIS should not consider these alternatives in detail, since they do not provide for the collective purposes of the Arctic Refuge.	The text in Alternatives B and C was brought forward from the Draft SEIS with only minimal updates, as appropriate. The requirements and standards across all alternatives were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed. Additionally, Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Warren	Greg	-	72931	13	Draft SEIS: Alternative D discussion at 2-4 summarizes this alternative. Comment: This alternative could lead to actions that materially interfere with the surface purposes of the refuge. Of primary concern is the recognition that exceptions to the No Surface Occupancy stipulation will be waive or modified. This alternative should be modified, or a new alternative developed, that clearly distinguishes those areas where the NSO will be binding. The alternative should also recognize that seismic exploration may be limited in scope and intensity for the purpose of protecting surface resources. FWS compatibility determinations should be mandatory. The location and size of each lease tract matters even when lease stipulations are identical for any given area of land. The proposed BLM tract layout is designed to favor oil and gas development without considering alternative scenarios. The alternative tract layout proposed in my "Notice of Coastal Plain Oil and Gas Lease Sale" comments (Attachment C) would be superior to the BLM tract layout in providing for the collective purposes of the Arctic National Wildlife Refuge. Alternative D which assumes extensive waivers, modifications, or exceptions to the No Surface Occupancy Stipulation does not allow for an adequate effects analysis and should be modified to address leasing blocks as I propose in Alternative W3 as an added layer of surface resource protection. See following comments regarding the Appendix B Hypothetical Development Scenario.	Lease tracts (location, size) for the second lease sale are not yet determined. Additionally, No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Warren	Greg	-	72931	16	Draft SEIS: Alternatives B and C. Comment: These alternatives should not have been developed in detail in the Draft SEIS, since they do not meet the purpose and need.	The text in Alternatives B and C was brought forward from the Draft SEIS with only minimal updates, as appropriate.
Warren	James	-	79438	1	If Alternative A exists, it can be chosen as the alternative. If it does not exist, it cannot be included among four options. Therefore, the EIS and this Draft EIS are illogical and irrational from the very outset. It must be an alternative to choose to do nothing to the Coastal Plain. By doing nothing, BLM and DOI and the USA are in fact choosing to let the Coastal Plain exist as it is, without any development whatsoever. Only if we say that there MUST be development is it possible to say that Alternative A cannot be chosen. But then there should be an alternate to Alternative A. This would be even less development than proposed in Alternative D.	Alternative A would not meet the requirements of Section 20001(c)(1) of PL 115-97 and cannot be selected. The "no action alternative" is used for baseline comparisons.
Warren	Greg	-	72931	6	Draft SEIS: 2,000-Acre Facility Limit at 1-9 states, "facilities that would not count toward the 2,000-acre limit include the portion of facilities that do not touch the land (such as elevated pipelines)." Comment: I agree with most of the changes to the surface area definition. However, elevated pipelines should be counted against the acreage limit. An elevated pipeline clearly covers the surface of the refuge. Pipelines would degrade the natural diversity of the refuge. The BLM should include in any future lease a term describing that an Application for Permit to Drill shall not be approved if the development could result in production and support facilities that exceed 2,000 surface acres during the term of the Coastal Plain leases.	Only the piers for support of pipelines would count toward the 2,000-acre threshold, as noted in Section 20001(c)(3) of PL 115-97. Tracking and enforcement of facility acreage is detailed in Appendix T, Response to Comments, header Tracking and Enforcement of Facility Acreage. Considerations based on acreages could be included in the approved Application for Permit to Drill, if applicable.

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Warren	Greg	-	72931	14	Draft SEIS: Lease Stipulations at 2-5 states, "A stipulation included in an oil and gas lease could be subject to a waiver, exception, or modification, as appropriate. The objective of a stipulation must be met before a waiver, exception, or modification would be granted." Comment: Prior to publication of the Draft SEIS, the BLM should have promulgated regulations to (1) establish rules and regulations that complement Fish and Wildlife Service regulations and policies for protecting environmental, fish and wildlife, and historical or scenic values and (2) provide clarifying direction on how any competitive leasing in the Arctic National Wildlife Refuge will deviate from but be similar to the competitive leasing process described in regulations pertaining to the National Petroleum Reserves.	Waivers, exceptions, and modifications are necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions. Appropriate stipulations are attached to the lease when the BLM issues it. As part of a lease contract, stipulations are specific to the lease. All oil and gas activity permits issued to a lessee must comply with the lease stipulations appropriate to the activity under review, such as exploratory drilling or production pad construction. A stipulation included in an oil and gas lease could be subject to a waiver, exception, or modification, as appropriate. The objective of a stipulation must be met before a waiver, exception, or modification would be granted. Waivers, exceptions, and modifications are: 1) A waiver—A permanent exemption to a stipulation on a lease; 2) An exception—A one-time exemption to a lease stipulation, determined on a case-by-case basis, or 3) A modification—A change attached to a lease stipulation, either temporarily or for the life of the lease. The BLM Authorized Officer may authorize a modification to a lease stipulation only if the officer determines that the factors leading to the stipulation have changed sufficiently to make the stipulation no longer justified; the proposed operation would still have to meet the objective stated for the stipulation. While the BLM may grant a waiver, exception, or modification of a stipulation through the permitting process, it may also impose additional requirements through permitting terms and conditions to meet the objectives of any stipulation. This would be the case if the BLM Authorized Officer considers that such requirements are warranted to protect the land and resources, in accordance with the BLM's responsibility under relevant laws and regulations. Note that PL 115-97 requires that the BLM authorize ROWs for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or with a NSO stipulation. The Authorized Officer will issue a waiver, exception, or modification to a lease stipulation or ROP only following 30 days of public notice, although this timeframe could change if agreed upon and legally permissible. Moreover, the Authorized Officer must document their decision and rationale for any waiver, exception, or modification in writing.

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Warren	Greg	-	72931	15	Draft SEIS: Alternatives Considered but Eliminated from Detail Study at 2-88 states, "An alternative that would disallow waivers, modifications, or exceptions to any lease stipulation or required operating procedure was considered but eliminated from detailed analysis because it was not reasonable or practicable. There are several lease stipulations and required operating procedures that do not allow waivers, modifications, or exceptions; however, it is not reasonable to eliminate the potential for such flexibility for all lease stipulations and required operating procedures, particularly if the factors leading to the adoption of the lease stipulation or required operating procedure have changed sufficiently to make the protection it provides no longer justified or if the proposed operation would not cause unacceptable impacts. Also, in some cases it is not practicable to comply with all lease stipulations and required operating procedures. For example, in specific areas it may be impossible to avoid certain setbacks in the construction of linear features such as pipelines." Comment: The FEIS should clearly identify the waivers, modifications, or exceptions to any lease stipulation or required operating procedure that will not be granted. Alternative D which assumes extensive waivers, modifications, or exceptions to the No Surface Occupancy Stipulation does not allow for an adequate effects analysis and should be modified to addressing leasing blocks, similar to what I propose in Alternative W3, as an added layer of surface resource protection. In addition, see comments regarding the Appendix B Hypothetical Development Scenario.	Waivers, exceptions, and modifications are necessary to maintain flexibility while managing an area about which very little is currently known. This flexibility allows for adaptive management that reflects changing on-the-ground conditions. Appropriate stipulations are attached to the lease when the BLM issues it. As part of a lease contract, stipulations are specific to the lease. All oil and gas activity permits issued to a lessee must comply with the lease stipulations appropriate to the activity under review, such as exploratory drilling or production pad construction. A stipulation included in an oil and gas lease could be subject to a waiver, exception, or modification, as appropriate. The objective of a stipulation must be met before a waiver, exception, or modification would be granted. Waivers, exceptions, and modifications are: 1) A waiver—A permanent exemption to a stipulation on a lease; 2) An exception—A one-time exemption to a lease stipulation, determined on a case-by-case basis, or 3) A modification—A change attached to a lease stipulation, either temporarily or for the life of the lease. The BLM Authorized Officer may authorize a modification to a lease stipulation only if the officer determines that the factors leading to the stipulation have changed sufficiently to make the stipulation no longer justified; the proposed operation would still have to meet the objective stated for the stipulation. While the BLM may grant a waiver, exception, or modification of a stipulation through the permitting process, it may also impose additional requirements through permitting terms and conditions to meet the objectives of any stipulation. This would be the case if the BLM Authorized Officer considers that such requirements are warranted to protect the land and resources, in accordance with the BLM's responsibility under relevant laws and regulations. Note that PL 115-97 requires that the BLM authorize ROWs for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or with a NSO stipulation. The Authorized Officer will issue a waiver, exception, or modification to a lease stipulation or ROP only following 30 days of public notice, although this timeframe could change if agreed upon and legally permissible. Moreover, the Authorized Officer must document their decision and rationale for any waiver, exception, or modification in writing.
Weaver	Pamela	-	20597	3	Also important is the "no surface occupancy" stipulation, which is far too vague and needs clear definition. Transparency is critical for trust and working together.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Westmoreland	Henry	-	79942	3	Even under the most protective alternative put forth, "no surface occupancy (NSO)" stipulations are broad and undefined and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the EIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

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wheeler	tara	-	20090	1	Please develop an alternative that maximally protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich'in people who have relied on the herd for millennia. It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. As in the rest of the Arctic, climate change is wreaking havoc on the rhythms of life in the refuge, which is warming faster than the rest of the world. Expanding oil leasing into the refuge will exacerbate these stresses, cause irreparable harm to this irreplaceable region, and to the millions of birds and other animals that migrate there every summer from around the world, and undermine urgent action to address the climate crisis.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Wilson	William	-	22128	3	Even under the most protective alternative put forth, "no surface occupancy" (NSO), stipulations are broad and undefined, and there still appear to be loopholes that would allow for infrastructure and development. If NSO stipulations are meant to provide protections for leased tracts, they must be well-defined and unwaivable in the Draft SEIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.
Wood	Ruth	-	80254	1	The 4 true purposes of the Refuge, if followed, are our best chance of protecting these animals and this place. The very idea that "To provide for a oil and gas program on the Arctic Plain" should be given equal weight is ludicrous. Yet, that's the reality you are developing this SEIS under. Therefore, it is critically important that the rules, regulations, stipulations for leases and development be written to ensure that these animals have the habitat they need to survive and prosper. That means limited production and support facilities. That means facilities cannot be spread over an entire leased area. Limiting development to 2000 acres or less doesn't mean anything if roads and pipelines are allowed everywhere and only the acres underneath count.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Wood	Ruth	-	80254	2	Polar Bear denning areas need to be protected where ever they have been or are found regardless of how great the likelihood of significant oil and gas in the same area. If the potential for oil and gas is allowed to take precedence, that purpose in effect supersedes the other 4 purposes of conserving animals and plants in their natural diversity; ensuring a place for subsistence hunting and gathering activities; protecting water quality and quantify; and fulfilling international wildlife treat obligations, then the added purpose is given greater than equal weight. It appears that some on-shore denning areas have weaker protection than others in the SEIS. That needs to change.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Worthy	Crista	-	22294	3	All the current alternatives leave too much room, too many loopholes, for surfact occupation.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed.
Young	Pam	-	80460	4	finally. please make sure to correct what is currently an unacceptable, overly broad, undefined stipulation regarding no surface occupancy.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." This is consistent with the 2019 Final EIS.

U.3.4 ANILCA

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Sorge	Sven	-	39438	2	BLM's Conclusion That There Will Not be Significant Impacts to Gwich'in Subsistence is FALSE: Under section 810 of the Alaska National Interest Lands Conservation Act (ANILCA), BLM must evaluate the impacts of the leasing program on subsistence uses and seek alternatives to the proposed action that would reduce or eliminate impacts.	The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects.
Warren	Greg	-	72931	2	FEIS: The Final Environmental Impact Statement must recognize the cancellation of leases, which is a recent action of the Bureau of Land Management (BLM) and supported by the U.S. Fish and Wildlife Service (FWS). This lease cancellation action creates opportunities to address alternatives that are not presented in the Draft SEIS. Draft SEIS: Overview at 1-1 states, "The oil and gas leasing program must consider and balance the Arctic Refuge purposes set out in Section 303(2)(B) of ANILCA, as amended by Section 20001 of PL 115-97... All action alternatives were designed to meet Section 20001 of PL 115-97 and to account for all purposes of the Arctic Refuge." Comment: To be consistent with Alaska National Interest Lands Conservation Act (ANILCA) as amended, all Final EIS alternatives must ensure that actions on Coastal Plain provide for all of the purposes of the Arctic Refuge. Only "considering and accounting" for all of the purposes of the Arctic Refuge could lead to actions inconsistent with ANILCA (PL 96-487, Sections 101, 303, and 304).	Section 1.1 has been updated to reflect cancellation of the remaining seven leases held by AIDEA on September 6, 2023. Alternative D2 reflects the minimum acreage required for a lease sale and the cancellation of the remaining leases. As noted in the Purpose and Need (Section 1.3), any oil and gas program alternative must consider all five statutory purposes of the Refuge, none of which are superseded by any other.
Brisson	Brook	Trustees for Alaska	80131	10	The draft SEIS, like the 2020 Leasing Program, fails to fully recognize BLM's obligations and authority to grant rights-of-way under ANILCA XI - the "single comprehensive statutory authority for the approval or disapproval" of transportation and utility systems on conservation system units in Alaska.(131) While the final EIS indicated rights-of-way would be processed under ANILCA XI, the agency failed to explain how its interpretation of BLM's authority to grant rights-of-way under the Tax Act is consistent with Title XI. In both the final EIS and the ROD, BLM repeatedly stated that it lacks authority post-leasing to deny authorization for any on-the-ground activity, such as constructing a road or pipeline or undertaking any other "necessary" activity to access leased oil and gas. Throughout the final EIS, BLM stated that section 20001(c)(2) of the Tax Act prevents it from denying a permit where the access is necessary for oil and gas development.(132) BLM interpreted this requirement to mean that BLM is obligated to authorize rights-of-way for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or within the No Surface Occupancy restriction.(133) The ROD similarly stated that BLM lacked discretion to deny such rights-of-way not only for lease holders, but any request for "access" deemed necessary to carry out the leasing program.(134) This interpretation was far broader than Congress intended and failed to account for BLM's discretion to determine whether the access sought was in fact necessary and otherwise complied with the mandates of Title XI. Indeed, as Interior has acknowledged, BLM has broad discretion in how it carries out any issuance of rights-of-way or easements under the Tax Act. "Issuing an easement implicates administrative discretion involving numerous terms including location, width, manner and timing of access, mitigation measures, and similar topics that frequently require additional reviews under environmental statutes including NEPA."(135) And the fact that subsection (c)(2) addresses easements "necessary to carry out this section" further clarifies the administrative discretion inherent in such a task. Agency personnel must not only determine what is "necessary" but must do so within the broad context of administering the Leasing Program and accounting for all Refuge purposes. (131) 16 U.S.C. § 3161(c). (132) FEIS at 2-4. (133) Id. at 2-3 to 2-4; FEIS App. S at S-1017 (Response to Public Comment Row #5). (134) Id. (135) AIDEA v. Biden, Defendants' Response in Opp. To Mots. For Summary Judgment (Feb. 3, 2023), ECF No. 63.	Title XI does not affect the rights provided by an oil and gas lease under applicable law. If a ROW or any other project-specific activity results in surface-disturbing activity, then additional NEPA analysis is required. In processing applications for ROWs, the BLM will comply with all applicable laws, including ANILCA.
Brisson	Brook	Trustees for Alaska	80131	12	Troublingly, the draft SEIS appears to take the same or a similar approach to BLM's unlawful interpretation from the 2020 Leasing Program. While Appendix D acknowledges that "[a]pplications for transportation and utility systems in conservation system units are processed under ANILCA Title XI," there is no mention of Title XI's requirements elsewhere in the draft SEIS. As before, BLM exclusively refers to the Tax Act when describing how it would process rights-of-way across the Coastal Plain.(136) Nothing in BLM's analysis addresses how this interpretation is consistent with ANILCA XI given that the Tax Act did not waive or alter any other applicable laws. Contrary to BLM's interpretation, ANILCA requires BLM to make specific findings prior to granting a right-of-way including a finding that any grant be "compatible with the purposes for which the unit was established."(137) As a result of BLM's interpretation, the leases issued in the first lease sale included a broad right of access and use of the Coastal Plain - going far beyond what is normally granted as part of an oil and gas lease. Those provisions and rights never should have been included as part of the leases. It is critical that BLM not repeat these mistakes. (136) See e.g., DSEIS at 2-5 ("Note that PL 115-97 requires that the BLM authorize ROWs for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or with a NSO stipulation."). (137) 16 U.S.C.S. § 3165.	Section 1.9 and Appendix E cover current international agreements, federal, state, and local laws and regulations, and executive orders, including ANILCA Title XI. Under the directives of Section 20001(c)(1) of PL 115-97, a lease does grant the lessee certain rights to drill for and extract oil and gas subject to further environmental review and reasonable regulation, including applicable laws, terms, conditions, and stipulations of the lease.
Brisson	Brook	Trustees for Alaska	80131	13	BLM should acknowledge in the final SEIS that any and all rights-of-way granted for its oil and gas program would be subject to ANILCA Title XI's requirements and affirm Title XI's applicability in any ROD or future leases. BLM should also expressly recognize its discretion to deny applications that the agency deems not necessary to carry out the leasing program.(138) The final SEIS should also make clear that BLM retains broad discretion in administering any rights-of-way and easements and may condition any permits as it deems necessary to protect the Refuge and its purposes. Importantly, the ROW provision cannot be interpreted to overcome the 2,000-acre limit in a way that would allow greater than 2,000 acres of development. The 2,000-acre provision was intended as a hard cap on development and the final SEIS must acknowledge that it limits BLM's ability to grant ROW. (138) AIDEA v. Biden, 2023 U.S. Dist. LEXIS 136474, *24-25.	Additional discussion of ANILCA Title XI has been added to Section 3.4.1, Land Ownership and Use, Impacts Common to All Action Alternatives.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	392	Overall, the draft SEIS still lacks a robust subsistence analysis. In the draft SEIS, the agencies determined that oil and gas leasing on the Coastal Plain would only significantly restrict subsistence uses for Kaktovik. As a result, the draft SEIS indicates the agencies will hold a single public hearing regarding subsistence impacts in Kaktovik.(1085) However, the agencies have indicated that they will also hold ANILCA Section 810 hearings in Arctic Village, Venetie, and Fort Yukon. It is critically important that the agencies revise their ANILCA Section 810 analysis to consider impacts to all affected communities and, given the vital importance of the Porcupine Caribou Herd to the Gwich'in, include a clear and accurate ANILCA Section 810 analysis for all Gwich'in communities. A finding that there will be subsistence impacts to Gwich'in communities is appropriate given the potential reduced abundance and availability of subsistence resources as a result of the oil and gas program and its impact on caribou and waterfowl. (1085) DSEIS App. E at E-24.	At the request of the Gwich'in Tribes, the agencies held ANILCA 810 hearings in Arctic Village, Venetie, and Fort Yukon despite not having had a positive "may significantly restrict" finding. By holding these additional subsistence hearings, the BLM would avoid having to later hold hearings in these communities in the event the final 810 evaluation made positive findings for those communities (although it did not). A positive finding was not made for the Gwich'in communities because the evaluation did not find population-level effects to the Porcupine Caribou Herd would occur as a result of the leasing program. Appendix F, ANILCA Section 810, and Section 4.6 have been updated for the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	393	Confusingly, it is publicly unclear whether the agencies may have actually made ANILCA 810 "may significantly restrict" findings for additional communities. While the draft SEIS expressly limits this finding to Kaktovik, BLM's EPlanning website and announcement of hearings indicates that there will be ANILCA 810 hearings in the communities of Arctic Village, Venetie, and Fort Yukon, in addition to Kaktovik. A direct communication from BLM indicated that the agencies have not made "may significantly restrict" findings for those three Gwich'in communities but that the agencies are holding hearings now in case they make such findings in the future. This is confusing to the public and the communities. Additionally, there is extensive information already before the agencies that an oil and gas program on the Coastal Plain would significantly restrict subsistence uses. We strongly encourage the agencies to amend their preliminary findings to recognize these impacts and to ensure that the agencies are complying with ANILCA's mandates to protect subsistence.	At the request of the Gwich'in Tribes, the agencies held ANILCA 810 hearings in Arctic Village, Venetie, and Fort Yukon despite not having had a positive "may significantly restrict" finding. By holding these additional subsistence hearings, the BLM would avoid having to later hold hearings in these communities in the event the final 810 evaluation made positive findings for those communities (although it did not). A positive finding was not made for the Gwich'in communities because the evaluation did not find population-level effects to the Porcupine Caribou Herd would occur as a result of the leasing program. Appendix F, ANILCA Section 810, and Section 4.6 have been updated for the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	417	Overall, the draft SEIS is deficient for failing to seek input required for a robust sociocultural analysis. In the final EIS, the agencies determined that oil and gas leasing on the Coastal Plain would only significantly restrict subsistence uses for Kaktovik. As a result, the draft SEIS indicates the agencies will hold a single public hearing regarding subsistence impacts in Kaktovik.(1153) However, the agencies have indicated that they will also hold ANILCA Section 810 hearings in Arctic Village, Venetie, and Fort Yukon. It is critically important that the agencies revise their ANILCA Section 810 analysis to consider impacts to all affected communities and, given the vital importance of the Porcupine Caribou Herd to the Gwich'in of Alaska and Canada, include a clear and accurate ANILCA Section 810 analysis for all Gwich'in communities. A finding that there will be subsistence impacts to Gwich'in communities is appropriate and will allow the agencies the opportunity to solicit community feedback regarding the sociocultural impacts likely to flow from reduced abundance and availability of subsistence resources in all impacted communities. (1153) DSEIS App. E at E-24.	At the request of the Gwich'in Tribes, the agencies held ANILCA 810 hearings in Arctic Village, Venetie, and Fort Yukon despite not having had a positive "may significantly restrict" finding. By holding these additional subsistence hearings, the BLM would avoid having to later hold hearings in these communities in the event the final 810 evaluation made positive findings for those communities (although it did not). A positive finding was not made for the Gwich'in communities because the evaluation did not find population-level effects to the Porcupine Caribou Herd would occur as a result of the leasing program. Appendix F, ANILCA Section 810, and Section 4.6 have been updated for the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	418	Confusingly, it is currently unclear whether the agencies may have actually reached a "may significantly restrict" ANILCA Section 810 finding for additional communities. While the draft SEIS expressly states that the agencies made this finding only for Kaktovik, BLM's EPlanning website and announcement of hearings indicates that there will be ANILCA Section 810 hearings in the communities of Arctic Village, Venetie, and Fort Yukon, in addition to Kaktovik. We strongly encourage the agencies to amend their preliminary findings to support and explain their decision to hold hearings in these communities.	At the request of the Gwich'in Tribes, the agencies held ANILCA 810 hearings in Arctic Village, Venetie, and Fort Yukon despite not having had a positive "may significantly restrict" finding. By holding these additional subsistence hearings, the BLM would avoid having to later hold hearings in these communities in the event the final 810 evaluation made positive findings for those communities (although it did not). Appendix F, ANILCA Section 810, and Section 4.6 have been updated for the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	502	As addressed at length in previous comments, the Gwich'in of Alaska and Canada are culturally and spiritually connected to the Porcupine Caribou Herd and would be substantially impacted by reduced abundance and availability of the herd as a result of oil and gas leasing.(1335) The stakes of approving an oil and gas leasing program on the Coastal Plain of the Arctic Refuge are high for the Gwich'in as the Porcupine Caribou Herd relies on the Coastal Plain for essential calving, post-calving, and insect relief habitat.(1336) Oil and gas leasing on the Coastal Plain will reduce the abundance of the Porcupine Caribou Herd through increased calf mortality, decreased pregnancy, and diversion from nutrient rich habitat. Industrial oil and gas activities will also disturb and alter traditional migratory paths - thereby reducing the herd's availability to subsistence hunters. (1335) 2019 DEIS Comment Letter at 398-404. (1336) See supra Section VI.I. With these impacts in mind, the agencies erred significantly in limiting their "may significantly restrict" finding under ANILCA Section 810 to Kaktovik and only in the cumulative case.(1337) The agencies must explain how this limited finding comports with their findings elsewhere in the draft SEIS regarding the impacts to resources, subsistence, and sociocultural systems. Specifically, the agencies must address their contrary findings that model predicted population declines could have "substantial impacts on communities that rely on the Porcupine Caribou Herd"(1338) and that Kaktovik, Nuiqsut, Arctic Village, Venetie, and other Alaska communities that rely on the Porcupine Caribou Herd and Central Arctic Herd, "could experience indirect adverse impacts associated with a decline in the abundance or availability of caribou." (1339) (1337) DSEIS App. E at E-24. (1338) Id. at 3-329. (1339) Id. at 3-370.	A positive finding in the Section 810 analysis was not made for the Gwich'in communities because the evaluation, and corresponding Chapter 3 analysis, did not find that population-level effects to the Porcupine Caribou Herd would occur as a result of the leasing program.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	503	The agencies must also address the significant confusion surrounding their public hearing process in several communities. While the draft SEIS expressly limits the agencies' ANILCA Section 810 "may significantly restrict" finding to Kaktovik, BLM's planning website and announcement of hearings indicates that there will be ANILCA Section 810 hearings in the communities of Arctic Village, Venetie, and Fort Yukon, in addition to Kaktovik. BLM recently explained that the agency has not made a "may significantly restrict" finding for the communities of Arctic Village, Venetie, and Fort Yukon but is holding ANILCA Section 810 hearings in those communities to gather information and avoid future hearings should the agencies find in the final SEIS that subsistence uses and resources may be significantly restricted for additional communities. This process is confusing and we strongly encourage the agencies to amend their preliminary findings to support and explain their decision to hold hearings in these communities.	At the request of the Gwich'in Tribes, the agencies held ANILCA 810 hearings in Arctic Village, Venetie, and Fort Yukon despite not having had a positive "may significantly restrict" finding. By holding these additional subsistence hearings, the BLM would avoid having to later hold hearings in these communities in the event the final 810 evaluation made positive findings for those communities (although it did not). Appendix F, ANILCA Section 810, and Section 4.6 have been updated for the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	504	As addressed in detail in previous comments, oil and gas leasing on the Coastal Plain threatens numerous subsistence resources and users and will significantly impact human connections to the land.(1340) Yet, in assessing impacts to subsistence users and resources, BLM and FWS repeat a central shortcoming from BLM's previous analysis by limiting their analysis to just four communities -Kaktovik, Nuiqsut, Arctic Village, and Venetie.(1341) This approach is insufficient. Any change in caribou availability or abundance due to oil and gas activities on the Coastal Plain would impact subsistence uses for seven Canadian user groups and the 22 Alaska study communities.(1342) Each of the 22 study communities have documented customary and traditional uses for either the Porcupine Caribou Herd or Central Arctic Caribou Herd.(1343) Use of caribou among these communities is "with few exceptions. . . high"(1344) and, as addressed above, impacts to the Porcupine Caribou Herd would be particularly harmful to the Gwich'in.(1345) In order to adequately analyze these far reaching impacts, the agencies must expand the number of communities considered in their ANILCA Section 810 analysis. (1340) 2019 DEIS Comment Letter at 398-404. (1341) DSEIS App. E at E-3. (1342) Id. at 3-301. (1343) Id. at 3-301. (1344) Id. at 3-302. (1345) Id. App. E at E-21.	Section 810 of ANILCA only applies to subsistence uses by rural Alaska (i.e., not Canadian) residents, per the definition of “subsistence uses” in Section 803 of ANILCA. Section F.2 of the Section 810 analysis explains in detail why the analysis focuses on four of the 22 communities studied. The section was revised for additional clarity.
Brisson	Brook	Trustees for Alaska	80131	505	The agencies also erred in disregarding impacts to important subsistence foods for many communities including birds, waterfowl, moose, grizzly bear, polar bear, and muskoxen.(1346) The agencies limited their analysis to fish, marine mammals (though not polar bears), and caribou because those resources form the majority of wild foods consumed in Kaktovik, Nuiqsut, Arctic Village, and Venetie.(1347) But the agencies cite nothing to support limiting their analysis in this way. Section 810 of ANILCA requires BLM and FWS to consider subsistence impacts stemming from leasing and development in the Coastal Plain and places no geographic restriction on this duty.(1348) As the agencies recognize, such impacts will not be limited to fish, select marine mammals, and caribou. For example, waterfowl are one of the subsistence resources "most likely" to be impacted by oil and gas leasing on the Coastal Plain.(1349) Reduced availability and abundance of waterfowl would impact many communities beyond the program area in addition to residents of Nuiqsut, Arctic Village, and Venetie. (1350) There is no meaningful explanation given for excluding waterfowl from the Section 810 analysis. Impacts to such important subsistence foods must be addressed in the final SEIS because traditional knowledge establishes that the Coastal Plain is vital to their survival.(1351) (1346) Id. at E-3 (limiting ANILCA 810 analysis to fish, marine mammals, and caribou). (1347) Id. (1348) 16 U.S.C.S. § 3120. (1349) DSEIS at 3-356. (1350) Id. at ES-7. (1351) Id. at 3-316.	Appendix F, ANILCA Section 810 and Chapter 3 have been updated for the Final SEIS to include waterfowl as a subsistence resource.
Brisson	Brook	Trustees for Alaska	80131	506	The agencies must also expand and clarify their analysis of oil and gas activities. Like the 2020 Leasing Program, the draft SEIS limits the ANILCA Section 810 analysis to post-lease activities(1352) and then, deeming post-lease activities speculative at this stage, defer meaningful impact analysis.(1353) This approach fails to account for significant subsistence impacts from preleasing activities such as seismic exploration if allowed, which could destroy or alter large swaths of vegetation and habitat. It is not possible to meaningfully address subsistence impacts without considering this damage. In addition, deferring analysis of post-leasing activities is inappropriate. The agencies must consider impacts to subsistence use that could occur from all stages of the program now and follow a precautionary approach regarding future impacts rather than circumventing analysis.(1354) (1352) Id. App. E at E-2. (1353) Id. (explaining post lease impacts are speculative until BLM receives an "exploration permit, permit to drill, or other authorization that includes site-specific information"). (1354) See supra Section IV.B.6	Appendix F and Chapter 3 have been updated to include impacts of seismic activities on subsistence use and resources.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	531	The agencies must expand and clarify their ANILCA Section 810 findings in order to fulfill their trust responsibility to consult with all impacted Indian Tribes. While the agencies have articulated their plan to hold a subsistence hearing in Kaktovik,(1475) there is significant confusion surrounding the agencies' plans to hold hearings with additional communities. The draft SEIS expressly limits the agencies' "may significantly restrict" finding under ANILCA Section 810, and hearings, to Kaktovik. However, BLM's EPlanning website and announcement of hearings indicates that there will also be ANILCA Section 810 hearings in the communities of Arctic Village, Venetie, and Fort Yukon. BLM recently explained that the agencies have not made a "may significantly restrict" finding for the communities of Arctic Village, Venetie, and Fort Yukon but are holding ANILCA Section 810 hearings in those communities to gather information and avoid future hearings should the agencies expand their findings in the final SEIS. This process is confusing and fails to acknowledge the significant information already available to the agencies that demonstrate that there will be significant impacts to subsistence for the Gwich'in. As addressed in greater detail above, the agencies failed to make a "may significantly restrict" findings for all Gwich'in communities despite acknowledging that reduced population numbers predicted for the Porcupine Caribou Herd could have "substantial impacts" on communities that rely on the herd.(1476) Failing to make such a finding conflicts with BLM's guidance requiring the agency to take a precautionary approach in reaching ANILCA Section 810 findings.(1477) As all Gwich'in communities stand to be impacted by leasing of the Coastal Plain, they must be consulted before this process moves forward. It is critically important that the agencies consult with and provide opportunities for robust engagement with all Tribes that will be impacted by the Coastal Plain Leasing Program. Honoring the government-to-government relationship with all Tribal entities that may be affected by leasing on the Coastal Plain requires engaging with all Tribes that rely upon the Coastal Plain's resources for subsistence, even if the Tribe or Tribal members are geographically distant from the Coastal Plain. This is because in Alaska, subsistence use regions span large geographic areas and subsistence resources include many migratory species like caribou and waterfowl. (1475) See Id. at ES-7. (1476) Supra Section VII.C (1477) Instruction Memorandum at 6-2.	A positive finding in the Section 810 analysis was not made for the Gwich'in communities because the evaluation, and corresponding Chapter 3 analysis, did not find that population-level effects to the Porcupine Caribou Herd would occur as a result of the leasing program.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	15	The Oil and Gas Program "May Significantly Restrict" Subsistence Uses in all Arctic Village and Venetie and Thus Tier 2 Analysis is Required A finding that an oil and gas program "may significantly restrict" subsistence use in Arctic Village and Venetie is well-founded given the potential reduced abundance and availability of subsistence resources because of the oil and gas program and its impacts on caribou and waterfowl; however, the agencies have inappropriately skewed their analysis away from making this finding. Moreover, the agencies have maintained an adherence to an inappropriately narrow legal interpretation of "subsistence uses" that erroneously excludes culturally important subsistence resources and practices that ANILCA requires that the agencies consider in a Section 810 evaluation. These two glaring errors- repeatedly raised by the Tribes during the 2018-2020 process and in the SEIS scoping process-must be fixed before the agencies can issue a final SEIS.	Additional text has been added to Section 4.6 to better describe the ANILCA 810 process and tiers 1 and 2.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	17	Currently it is unclear whether the agencies have reached a "may significantly restrict" finding for Arctic Village and Venetie. While the draft SEIS expressly states that the agencies made a "may significantly restrict" finding only for Kaktovik,(76) after release of the draft SEIS the agencies scheduled ANILCA Section 810 hearings in the communities of Utqiagvik, Arctic Village, Venetie, and Fort Yukon, in addition to Kaktovik. (76) Draft SEIS App. E, at E-24. A finding that an oil and gas program "may significantly restrict" subsistence use in Arctic Village and Venetie is well-founded given the high likelihood that the oil and gas program will result in reduced abundance and availability of subsistence resources. An oil and gas program on the Coastal Plain-and the supporting infrastructure-likely will reduce the abundance of the Porcupine Caribou Herd through increased cow and calf mortality, decreased pregnancies, and diversions from calving and post-calving grounds due to both infrastructure and climate change. These disruptions could be even more severe depending on the reactions of large aggregations to infrastructure, which currently is unknown. The agencies have inappropriately skewed their analysis away from making this finding, however, by not sufficiently considering the significant subsistence impacts to communities farther away from the Coastal Plain who would experience decreased abundance and availability of migratory species. The agencies have maintained an adherence to an inappropriately narrow legal interpretation of "subsistence uses" that erroneously excludes culturally important subsistence resources, such as waterfowl, and practices which ANILCA requires be considered in a Section 810 evaluation. These errors-repeatedly raised by the Tribes during the 2018-2020 process and in the SEIS scoping process-must be fixed before the agencies issue a final SEIS.	At the request of the Gwich'in Tribes, the agencies held ANILCA 810 hearings in some communities that did not have a positive "may significantly restrict" finding because the preliminary 810 evaluation could potentially be revised at the Final SEIS stage. By holding additional subsistence hearings earlier, the BLM would not have to later hold hearings in communities for which the final 810 evaluation may make additional positive findings. Appendix F, ANILCA Section 810 has been updated for the Final SEIS as well as corresponding Chapter 3 resource analysis. A positive finding in the Section 810 analysis was not made for the Gwich'in communities because the evaluation, and corresponding Chapter 3 analysis, did not find that population-level effects to the Porcupine Caribou Herd would occur as a result of the leasing program.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	18	The agencies' rationale for excluding certain culturally important subsistence resources is inconsistent with the statutory definition of subsistence uses, which expressly includes "customary and traditional uses" beyond "consumption as food."(77) The agencies' exclusion of waterfowl, described in Section IV.B.4, represents the agencies' flawed interpretation of subsistence uses. ANILCA definition of subsistence uses expressly includes "barter, or sharing for personal or family consumption" and "customary trade."(78) In other sections of the draft SEIS, the agencies discuss the importance of(79) and potential impacts on subsistence practices. (80) For example, the agencies found in Chapter 3 that "future development in the program area could have lasting effects on cultural practices, values, and beliefs through its impacts on subsistence. The potential impacts of development could result in reduced harvests, changes in uses of traditional lands, and decreased community participation in subsistence harvesting, processing, sharing, and associated rituals and feasts."(81) Despite these findings, the agencies' ANILCA Section 810 evaluation includes no discussion of culturally important subsistence practices. The Tribes have raised this issue during the SEIS scoping process, and the agencies have failed to correct this glaring deficiency. (82) In accordance with ANILCA, the agencies must define subsistence uses broadly and consider these culturally important subsistence resources and practices in its revised ANILCA Section 810 analysis. (77) 16 U.S.C. § 3113. (78) Id. (79) See e.g., Draft SEIS at 3-292 ("Activities associated with subsistence-processing, sharing, redistribution networks, cooperative and individual hunting, fishing, and gathering, and ceremonial activities-strengthen community and family social ties, reinforce community and individual cultural identity, and provide a link between contemporary Natives and their ancestors."); Id. at 3-295 (stating that "sharing is a crucial part of social structure, social ties, and resiliency in Alaska Native communities"). (80) See e.g., id. at 3-312 ("Reduced harvests of caribou by residents from Kaktovik, Nuiqsut, Arctic Village, or Venetie could disrupt existing sharing networks to other communities and regions if residents are unable to share as widely or frequently as they are accustomed to."); Id. at 3-320 ("The various impacts on subsistence from development can weaken social cohesion over time through reduced participation in subsistence activities, including hunting, processing, and sharing."). (81) Draft SEIS at 3-319. (82) Attachment D at 23.	Appendix F, ANILCA Section 810 and Chapter 3 have been updated for the Final SEIS to include waterfowl as a culturally important subsistence resource.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	19	The agencies' Section 810 evaluation presents an unbalanced and incomplete assessment of how Coastal Plain development would impact the Porcupine Caribou Herd. Traditional Knowledge of Arctic Coastal Plain development finds that "any development in the program area would have devastating effects on the population of the Porcupine Caribou Herd."(83) Additionally, review of the agencies' ANILCA Section 810 Preliminary Evaluation, by the Tribes concludes that Alternative B-and likely the other alternatives-would result in significantly restricted subsistence uses caused by a major reduction in caribou abundance. (84) The Tribes urge the agencies to develop a revised, more robust, analysis of Coastal Plain oil and gas development impacts on caribou abundance as the current analysis severely underestimates those impacts. (83) Draft SEIS, App. E, at E-13 (emphasis added) (84) Russell, D. E., M.S. (Feb. 3, 2019). Co-author of Vulnerability analysis of the Porcupine Caribou Herd to potential development of the 1002 lands in the Arctic National Wildlife Refuge, Alaska.	Appendix F and Chapter 3 have been updated for the Final SEIS.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	34	ANILCA Section 810 Subsistence Evaluation Must Include Impacts to Migratory Waterfowl The ANILCA Section 810 subsistence evaluation must be amended to include impacts to migratory waterfowl. Impacts from oil and gas infrastructure and activities on migratory waterfowl can compromise nesting and the abundance of waterfowl. Notably, waterfowl (and other bird type) nest survival decreased significantly near high-use infrastructure at Prudhoe Bay from 2003–2019.(111) Additionally, seismic activities can alter wetland hydrology in waterfowl habitat, spills and electrical transmission lines can harm or kill birds, and oil and gas development can lead to a decrease in nest density and area avoidance. (111) McGuire, R.L., Robards, M. and Liebezeit, J.R. (April 2023). Patterns in avian reproduction in the Prudhoe Bay Oilfield, Alaska, 2003-2019. Journal of Avian Biology. https://www.researchgate.net/publication/370186258_Patterns_in_avian_reproduction_in_the_Prudhoe_Bay_Oilfield_Alaska_2003-2019	Appendix F, ANILCA Section 810 and Chapter 3 have been updated for the Final SEIS to include waterfowl as a culturally important subsistence resource.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	35	As an initial matter, in the draft ANILCA Section 810 evaluation, as explained above, the agencies have maintained an adherence to an illegally narrow interpretation of "subsistence uses" that erroneously excludes culturally important subsistence resources and practices.(112) The agencies' exclusion of waterfowl is an illustrative example of the flawed interpretation of subsistence uses. (112) Supra, section IV.B.2. Though BLM recognized that waterfowl "are culturally important to residents of these communities," the agency did not consider waterfowl in its ANILCA Section 810 evaluation because "they do not comprise the majority of the wild foods consumed by residents of Kaktovik, Nuiqsut, Arctic Village, or Venetie."(113) The BLM's rationale for excluding certain culturally important subsistence resources is inconsistent with the statutory definition of subsistence uses, which expressly includes "customary and traditional uses" beyond "consumption as food."(114) Indeed, courts have held that "subsistence uses" extend beyond a "sufficient food supply" and "include customary and traditional practices which ANILCA was designed to protect."(115) (113) Draft SEIS, App. E, at E-3. (114) 16 U.S.C. § 3113. (115) Alaska Wilderness Recreation & Tourism Ass'n v. Morrison, 67 F.3d 723, 731 (9th Cir. 1995).	Appendix F, ANILCA Section 810 and Chapter 3 have been updated for the Final SEIS to include waterfowl as a culturally important subsistence resource.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Councill	80190	36	Gwich'in Cultural Experts have identified the Coastal Plain as an important habitat for waterfowl nesting (in addition to Yukon Flats) and describe concerns that development in the Coastal Plain would negatively affect nesting behaviors that already have been substantially impacted by climate change and contamination/loss of waterfowl habitat elsewhere in their migratory ranges.(116) Comments by Gwich'in Cultural Experts also describe general Traditional Knowledge about birds including Gwich'in cultural deference for nesting and other conventions that help to prevent overharvesting and changes to bird behavior that could otherwise affect resource abundance.(117) Gwich'in Cultural Expert comments include the following: (116) Attachment A at 14-18. (117) Id. at 16-18.	Appendix F, ANILCA Section 810 and Chapter 3 have been updated for the Final SEIS to include waterfowl as a culturally important subsistence resource.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Councill	80190	37	Moreover, the draft SEIS-which relies mostly on western science-states a waterfowl connection between the Coastal Plain and Gwich'in communities, "Residents of Arctic Village, Venetie, and other communities beyond the program area...could experience potential impacts from future development on caribou and, to a lesser extent, waterfowl."(121) Audubon's Migratory Bird Explorer, a comprehensive compilation of tracking data, found a connection between Venetie and the Coastal Plain through a tracked Greater White-Fronted Goose.(122) (121) Draft SEIS at ES-7. (122) Personal communication by the Tribes' consultant Lois Epstein with Audubon Alaska's David Krause (Oct. 8, 2023). An Arctic Refuge Coastal Plain oil and gas leasing program also can impact waterfowl harvest by Gwich'in tribes in Canada. Decreased abundance due to development on the Coast Plain could impact Gwich'in tribes in Canada directly as birds flying east/south-east from the Coastal Plain during their southern migration are harvested during Gwich'in subsistence hunts.(123) Decreased abundance of waterfowl would have a cultural impact on the Gwich'in Nation as a whole as a reduced subsistence harvest of waterfowl in Canada can impact the sharing of subsistence foods that is a hallmark of Gwich'in culture. (123) Id. Given the culturally important subsistence resources and practices surrounding waterfowl for the Gwich'in, the ANILCA Section 810 subsistence evaluation must include an analysis of impacts to migratory waterfowl.	Appendix F, ANILCA Section 810 and Chapter 3 have been updated for the Final SEIS to include waterfowl as a culturally important subsistence resource.
Von Seggern	Dan	Washington State Attorney General's Office	80273	1	By offering almost the entire Coastal Plain for leasing with only minimal protections for sensitive habitat areas, as well as providing for the entire area to be explored, alternative B unlawfully elevates oil and gas development over the other purposes of the Refuge. This is not consistent with the Refuge Act or ANILCA.	All action alternatives are designed to meet the purpose and need of the action and to account for all purposes of the Refuge
Von Seggern	Dan	Washington State Attorney General's Office	80273	2	By opening large areas of the Coastal Pain for leasing without protective conditions, alternative C would also unlawfully elevate oil and gas production over the other purposes of the Arctic Refuge. This is inconsistent with the Refuge Act and ANILCA.	All action alternatives are designed to meet the purpose and need of the action and to account for all purposes of the Refuge
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	21	ANILCA Reinforced the State's Right to Develop its Resources. And This Is Not Addressed in the SEIS. A. Beyond granting rights to and agreeing to allow Alaska to develop minerals on state land, Congress later prohibited further federal actions that amount to a "withdrawal" of lands in Alaska from resource development. In 1980, Congress enacted the Alaska National Interest Lands Conservation Act (ANILCA), Pub. L. No. 96-487, 94 Stat. 2371. Known as "The Great Compromise," the Act created massive areas of federal parks and preserves with limits on resource development in those areas. "[A]t the same time," the Act sought to "provide adequate opportunity for satisfaction of the economic and social needs of the State of Alaska and its people." 16 U.S.C. § 3101(d). B. ANILCA further reinforces that Congress considered its Alaska statehood land grants to turn over lands and resource development to the State, without future limitation by the federal government or its agencies. ANILCA's promise of no more withdrawals is a dead letter if the United States has complete control over Alaska's lands regardless and can make those lands de facto preserves through a misapplication of NEPA. C. In this case a Lease authorized by the TCJA that included a provision establishing an oil and gas program for ANWR might be subject to "subsequent misinterpretations of NEPA." On the granted lands, the Statehood Act must be interpreted in light of its own text and context. Nothing in the Act suggests that the rights conveyed to Alaska were conditioned on later federal law-or any conflicting federal law. And beyond the statutory text noted above, the context matters. "Alaska is different-from its 'unrivalled scenic and geological values,' to the 'unique' situation of its 'rural residents dependent on subsistence uses,' to 'the need for development and use of Arctic resources with appropriate recognition and consideration given to the unique nature of the Arctic environment.'" Sturgeon I, 577 U.S. at 438-39 (quoting 16 U.S.C. §§ 3101(b), 3111(2), 3147(b)(5)). The "simple truth" is "that Alaska is often the exception, not the rule." The SEIS does not acknowledge any of this Alaska specific law and effectively uses NEPA to withdraw AIDEA's leases from development.	Section 1.9 and Appendix E cover current international agreements, federal, state, and local laws and regulations, and executive orders. Statehood Act was added to Appendix E, Section E.4.
James	Sarah	-	80375	1	ANILCA is an Indian law. ANILCA subsistent is a purpose of Arctic National Wildlife Refuge along with preserving the animal we depend on. Porcupine Caribou is critical to us -- moose, waterfowl, and other birds and small animals and fish. In ANILCA there are -- in ANILCA there are subsistent rights, and EIS, ANILCA, on Section 810 subsistent analysis was poor, incomplete, and didn't include everything we depend on. The EIS Section 810 did not talk about how oil and gas would have a major impact on Porcupine Caribou and their calving, posting -- calving and nursing, and training ground along with other animal that we depend on, and cause a great loss to our -- our subsistent way of life and harm our Niintsyaa Gwich'in way of life.	Appendix F, ANILCA Section 810 addresses the potential impacts of the oil and gas leasing program on the Porcupine caribou herd, including potential impacts of habitat loss and alteration on the abundance and availability of the Porcupine caribou herd on subsistence.
Marsh	Ryan	-	80395	2	There's not nearly enough analysis on how these changes will affect Gwich'in subsistence and food sovereignty, which is clearly and demonstrably tied to what happens on the Coastal Plain and is protected under ANILCA.	Appendix F, ANILCA Section 810 has been updated for the Final SEIS based on input received during public comment periods and ANILCA 810 hearings.

U.3.5 Appendixes

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Rexford, Sr.	Edward	Native Village of Kaktovik	80353	9	NVK demands that Appendix C be deleted and rewritten in its entirety. This Appendix is outrageous to our people and has betrayed the government trust relationship we should have with the agencies. It is beyond our comprehension that you could release Appendix C in the manner that you did. How could you take a map of the 1002 Area (a map whose boundaries were derived under ANILCA and set aside for potential oil and gas leasing) and show predominant usage by our people and place "Iizhik Gwats'an Gwandaii Goodlit" ACROSS THE MAP 3-44! This is wrong and you have no right to do this. These are our lands, and this fact has been well-established pre-ANILCA while this term was only derived after ANILCA and reflects the bias that the SEIS team has exhibited to us throughout this process. This map and the accompanying text are devastating to our community! It will take us time to move forward after reviewing Appendix C because as we have stated earlier you are removing us, the Kaktovigmiut from OUR homelands. This one act alone has destroyed our trust that you can be objective. We have said this before and apparently it needs to be stated again and again. Our ancestors are buried here, our children are born here, and this is land that has sustained us for hundreds of years. Yes, this land is sacred but it's sacred to us as a people! We are asking the agencies to remove Map 3.44 in its entirety because it is misleading. It is derived from other reports where almost 100 Iñupiaq placenames were identified as single locations that our people have historically used but instead of showing those individual locations you present something that doesn't reflect the data that was collected or the intention of the data, which again, reflects the agencies' inability to differentiate and document indigenous knowledge.	Appendix C (now Appendix D in the Final SEIS) was brought forward from the Final EIS without edits. This appendix has been supplemented with additional information received during the public comment period as well as in response to public input. Map 3-44 was removed from the SEIS.
Brisson	Brook	Trustees for Alaska	80131	85	In development of the alternatives and the corresponding RFD scenarios, we also encourage BLM to develop a map or other diagram drawn to scale depicting the reasonably foreseeable extent and location of development and associated infrastructure that can be expected under each alternative. Such a map - which could use symbols to show well pads, pipelines, gravel and ice roads and gravel mines, central processing facilities and other building infrastructure - would allow the public to visualize and comment on the potentially extensive nature of the development under each alternative. This is particularly important because all alternatives allow for non-contiguous and dispersed development, which would ultimately impact far more than 2,000 acres of the Coastal Plain.	The agencies elected not to provide a map showing extent or location of facilities because the location of any facilities would be based on the locations of oil accumulations which have not yet been discovered or delineated. Such a diagram would give the incorrect impression that the agencies know where developments and facilities would be located, this might discourage interested parties from submitting relevant information or comments if the diagram gave an impression that developments were not going to be located in a particular area. Figures B-1 and B-2 show facilities and infrastructure and the extensive layout expected in any developments. Project specific proposals received in the future will be analyzed under a separate NEPA process with location specific information and maps so that the public can review and comment on facility locations.
Warren	Greg	-	72931	18	Appendix B. Hypothetical Development Scenario Draft SEIS: Hypothetical Development Scenario at B-1 states, "This hypothetical development scenario represents a good faith effort to project reasonably foreseeable oil and gas exploration, development, production, and abandonment in accordance with the Tax Cuts and Jobs Act of 2017, Public Law 115-97 (Dec. 22, 2017) (PL 115-97) Coastal Plain (Coastal Plain), and 40 Code of Federal Regulations (CFR) 1508.8(b). Estimating the level of future oil and gas activity in this area is difficult at best. Timing and location of future commercially viable discoveries cannot be more accurately projected until these undiscovered resources are explored. The hypothetical unconstrained scenario projects development under standard lease terms and encompasses restrictions in the enacting legislation. Scenarios by alternative incorporate the leasing stipulations and required operating procedures in the Coastal Plain Oil and Gas Leasing Program Environmental Impact Statement (Leasing EIS) into the hypothetical projections." Comment: The hypothetical development scenario does not encompass all of the restrictions in the enacting legislation. Public Law 115-97 only amended ANILCA to add an additional purpose of the Arctic Refuge, while continuing to require that oil and gas development provide for the other surface purposes of the refuge. If implemented, the direct, indirect, and cumulative effects of the described hypothetical development scenario would be significant and materially interfere with or detract from Arctic National Wildlife Refuge purposes of conserving fish and wildlife populations and habitats in their natural diversity, including conserving the polar bear. Draft SEIS Alternative D should have been the basis of describing a hypothetical development scenario, since this alternative best meets the purposes of the Arctic Refuge of those alternatives presented in the Draft SEIS. The descriptions such a hypothetical development scenario for Alternative D would have also provided for a better sense of what leasing stipulations would need to be waived if Alternative D was implemented. A Draft SEIS Alternative D based hypothetical development scenario would help inform the existing inadequate effects analysis that is presented in the Draft SEIS for Alternative D.	The Hypothetical Development Scenario in Appendix C presents a theoretical 'unconstrained' development scenario where only standard stipulations are applied to leases within the bounds of Public Law 115-97 for use as a baseline of maximum production of oil and gas and maximum impacts on other resources. That baseline development is then adjusted based on the proposed management under each of the Alternatives so that the reduction in oil and gas development can be compared against the reduction in impacts on other resources resulting from various management actions and analyzed in the SEIS. The analysis in the SEIS is what allows decision makers to identify which Alternative best meets the stated purpose and need. Section C.8 details the adjustments to the baseline scenario under each of the Alternatives. Decisions to waive leasing stipulations are not part of the SEIS, if the chosen Alternative allows for waivers to stipulations in certain situations the decision to issue a waiver would be made on a case-by-case basis by the BLM authorized officer in consultation with the USFWS Refuge Manager.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Strassenburgh	John	-	80071	3	Page B-12 Table B-3 states in the year 19 to 85 row of the table: " and reclaim the area". I did a search of all 3 Volumes of the draft SEIS, on the word "reclaim". There were many instances of the use of the word "reclaim" and its variations (e.g., "reclaimed"). The word was always used as an instruction... as, for instance, "reclaim the area". Table 2-3, page 2-68 contains some general guidance for alternatives C and D; virtually nothing for Alternative B. These are mildly helpful, but fail on two counts to provide for successful return to the natural environment. First, the BLM Authorization Officer may grant exceptions "for environmental or public purposes," which is a standard wide enough to allow almost anything to be approved. Second, the draft SEIS fails to acknowledge that land in the Coastal Plain, once disturbed, cannot truly be reclaimed. The Coastal Plain is critical Caribou habitat, especially during calving and post-calving. The main reason for this is the nutrition provided by the abundance of the plant species that are present. This is a critical time in the Caribou life cycle, and nutrition is key, especially for pregnant and nursing cows and new born calves. Once disturbed, it's gone. You can't just through some grass seeds out there and call it "reclaimed." The Caribou and plant species have evolved over thousands of years. The Caribou need the vegetation that is there now in order to maintain their abundance, health, and diversity. It is disingenuous for the draft SEIS to discuss reclamation without delving into the complexities and uncertainties of replicating the high nutritious value of current browse on 1002 area.	Operators would be required to submit a reclamation plan. A reclamation plan would be approved by the BLM Authorized Officer, in consultation with USFWS Refuge Manager. Approved plans would provide the standard by which full reclamation is deemed achieved. The BLM would conduct inspections to ensure resources are not damaged and are in compliance with the terms and conditions of the authorized activity.
Brisson	Brook	Trustees for Alaska	80131	80	Groups are glad that to see BLM and FWS's use of a development scenario based on a petroleum estimate that represents maximum resource and environmental impacts, which is particularly appropriate for a programmatic decision with the degree of uncertainty that that the agencies are facing here. However, because the agencies identify a wide range of oil production values (1.5 billion barrels of oil (BBO) to 10 BBO for technically recoverable resources(410), it is ultimately unclear what volumes the agencies assumed for the hypothetical unconstrained RFD scenario nor for any of the action alternative RFD scenarios. We appreciate that any attempt to project potential development activities and production levels for the Coastal Plain is speculative, but BLM and FWS clearly used some assumed production volume for each RFD scenario in order to conduct subsequent estimates that it provides, for example in the GHG emissions calculations and in the social cost emissions calculations. BLM and FWS should identify the overall economically recoverable oil production volumes as well as provide the by-year production volumes that the agencies ultimately assumed for each RFD scenario in the final SEIS in order for the public to evaluate and contextualize BLM's subsequent analysis. Additionally, the agencies currently assume first production in 2032, but experience has demonstrated that the time from exploration permitting to first production is considerably longer, nearly two decades.(411) The agencies should, therefore, include a more realistic timeline in the RFD scenarios. How much oil is developed and over what timeframe will likely result in different intensities and durations of impacts. Presumably the infrastructure required to produce these very different amounts of oil, and the amount of likely spilled oil, would differ dramatically. BLM and FWS should also better explain how the estimates of the amount of technically recoverable oil resource in the Coastal Plain connects with the scenario they use to assess impacts for each alternative. (410) DSEIS App. B at B-22. (411) See infra Section VI.V.4	The hypothetical development scenario estimates occurrence and development potential and projects future activity to the extent possible based on best available data. It would be speculative and unreasonable to identify exact areas where activities might occur because sufficient data regarding subsurface conditions is not available. Future 3D seismic exploration and drilling would clarify the state of subsurface conditions before production would begin. Estimates of production were created for use in modeling GHG but are proprietary.
Brisson	Brook	Trustees for Alaska	80131	81	While Groups are glad to see that the agencies developed specific RFD scenarios for each alternative, there is very little information about how BLM and FWS developed those scenarios. For example, it is unclear how the agencies determined the components by alternative. The agencies explained that they considered the restrictions and stipulations for each alternative, but it not clear how it concurrently accounted for hydrocarbon potential and oil estimates, or areas available for lease. Nor is it clear how the agencies determined the varying number of facilities per alternative. It is also not clear how NSO areas could be reached by horizontal directional drilling under current technology for each alternative, but this assumption is a critical piece of the RFD scenario. Additionally, now that the agencies are varying the RFD scenario by alternative, it is unclear what the purpose is of setting out and analyzing what it terms a "hypothetical unconstrained scenario."(412) Because there is no longer an alternative that matches this scenario, it is confusing how it relates to the alternative-specific scenarios presented. The agencies should better explain how they developed the scenarios for each alternative in the final SEIS to ensure that the agencies are fully analyzing the potential impacts to the Coastal Plain. (412) DSEIS App. B at B-10 to B-22.	The RFD Scenario in Appendix C starts with a theoretical 'unconstrained' development scenario where only standard stipulations would applied to leases within the requirements of Public Law 115-97 (i.e.. facilities may cover a maximum of 2000 surface acres) for use as a baseline of maximum production of oil and gas and maximum impacts on other resources. That baseline development is then adjusted based on the proposed management under each of the Alternatives so that the reduction in oil and gas development can be compared against the reduction in impacts on other resources resulting from various management actions and analyzed in the SEIS. Facilities such as CPFs, well pads and roads were varied based on the acreage of surface disturbance that could occur and the layout of areas available for locating surface facilities. Horizontal or directional drilling would allow an operator to drill a well into an oil accumulation under an area with an NSO stipulation from an area without a NSO stipulation. The analysis in the SEIS is what allows decision makers to identify which Alternative best meets the stated purpose and need. Section C.8 details the adjustments to the baseline scenario based on the management under each of the Alternatives.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	82	Additionally, the agencies still do not have a map drawn to scale showing a realistic depiction of the expected development by alternative. Such a map - which could use symbols to show well pads, pipelines, gravel and ice roads and gravel mines, Central Processing Facilities, and other building infrastructure - would allow the public to visualize and comment on the extensive nature of the potential development. Figures B-1 and B-2 do not present the complete picture of what the expected infrastructure and development will look like by alternative because they are not placed geographically, which matters for the expected impacts. They also do not include all expected components of the development scenario, such as gravel mines, gravel roads, and storage pads. These components are significant in terms of acreage and where they could be located matters in terms of the potential impacts.(413) Additionally, oil development infrastructure is likely to be more dense in the portion of the Coastal Plain with high hydrocarbon potential and less dense in areas with lower hydrocarbon potential, for example. The agencies try to explain in the text where components could be located, so it is unclear why the agencies have not provided a visualization to accompany each alternative. (413) DSEIS App. B at B-26.	The agencies elected not to provide a map showing locations of facilities because the location of any facilities would be based on the locations of oil accumulations which have not yet been discovered or delineated. Current geologic information is insufficient to identify potential locations of facilities.
Brisson	Brook	Trustees for Alaska	80131	83	The agencies also attempt to provide an economic analysis as part of the RFD scenario, but their quantitative estimates are for the hypothetical unconstrained scenario and do not vary by alternative.(414) Regardless, the economic impacts analysis is flawed.(415) (414) DSEIS App. B at B-26 to B-28. (415) See infra Section VI.V.4. BLM and FWS continue to assume that no gas will be developed in the Coastal Plain because there does not yet exist a transmission pipeline to bring natural gas to market from the North Slope.(416) However, plans for such a pipeline are presently being developed through a Federal Energy Regulatory Commission process. BLM and FWS seem to acknowledge this in their additional assumptions, wherein the agencies assume that the natural gas processing plant would be located outside of the Coastal Plain.(417) In light of the long time horizon for the development scenario and the current planning process for delivering North Slope gas to market, BLM should consider assessing the potential effects of natural gas production in its development scenarios for each alternative, including the need for gas pipelines to transport natural gas outside of the Coastal Plain for processing. (416) DSEIS App. B at B-3. (417) Id. at B-9.	Please see the section titled "Natural Gas Development" on page B-20 and B-21. This section explains that while plans are being pursued to build a pipeline to bring natural gas to market from the North Slope there are no plans to connect that pipeline to the Coastal Plain at this time. Until the substantial reserves in established fields around Prudhoe Bay are near exhaustion, and accumulations of sufficient size have been delineated in the Coastal Plain, it would be speculative to undertake an in-depth consideration of natural gas development in the Coastal Plain. The document acknowledges the possibility of gas development but any further consideration of connection of Coastal Plain natural gas resources would occur in a future planning effort.
Brisson	Brook	Trustees for Alaska	80131	198	BLM does not include an estimate for the water needed to support seismic exploration, but a prior seismic exploration application would use at least 3,500 gallons per day (potentially more). BLM and FWS must be sure that the analysis includes all potential oil and gas program uses of water in the RFD scenario for the agencies to be able to evaluate the impacts.	This EIS would not authorize ground-disturbing activity. Any proposed seismic project would be subject to approval, require temporary water use permits for water withdrawals, and would be regulated by state and federal agencies. The USFWS has applied for 154 instream flow reservations in the Arctic Refuge and program area to ensure the protection of aquatic habitats and wildlife as discussed in Section 3.2.10, "Water Rights". Should seismic activity be allowed, water demand by camps supporting a seismic crew of approximately 30 people is estimated to be 100 gallons per day per person, and 3500 gallons per day is reasonable.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	5	Graphic visualizations in Appendix B of realistic development scenarios for each of the alternatives as they might appear across the Coastal Plain. This would show readers how development could sprawl across the landscape.	The agencies elected not to provide a map showing extent or location of facilities because the location of any facilities would be based on the locations of oil accumulations which have not yet been discovered or delineated. Such a diagram would give the incorrect impression that the agencies know where developments and facilities would be located, this might discourage interested parties from submitting relevant information or comments if the diagram gave an impression that developments were not going to be located in a particular area. Figures B-1 and B-2 show facilities and infrastructure and the extensive layout expected in any developments. Project specific proposals received in the future will be analyzed under a separate NEPA process with location specific information and maps so that the public can review and comment on facility locations.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	107	Review of the draft SEIS Appendix B reveals that this glaring error with the agencies' reasonably foreseeable development scenario remains. The agencies must fix this error in the final SEIS and amend the analysis of impacts to account for a true high-end estimate in the range of approximately 7 BBO or greater, or around five times greater than the modelled development. Failure to fix the faulty underlying assumptions in the Reasonably Foreseeable Development (RFD) means that the analysis of environmental consequences based on the RFD production levels are inaccurate and an inadequate basis for the evaluation of direct, indirect, and cumulative impacts and informed decision making. In addition to the understating of potential impacts, the Tribes found inadequately addressed items and misstatements in the draft SEIS's Appendix B. These items are described in the following three sections. Following those sections are three additional sections addressing Central Processing Facility Acreage, the Need for a Graphic Depiction of Development Sprawl, and Economic Impacts in Appendix B.	Proposed change in section B.7.4 (pg-B-22) and in Section 3.2.6 (pg3-67): add note that ultimate recovery estimates in Attanasi and Freedman 2009 and Attanasi 2005 were based on there being no constraints on the size of development. Given the typical rate of production per well in the north slope, the amount of acreage available to locate development facilities in and on the borders of the Coastal Plain there simply is not enough available space to produce 7BBO, even if this amount was discovered in large accumulations in close proximity and not spread out in multiple smaller accumulations across much of the area as USGS studies suggest is likely.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	108	The reasonably foreseeable development scenario is inconsistent with the Coastal Plain's available oil estimates. The first page of Appendix B states that "a mean of 7.14 BBO was estimated to be economically recoverable a at \$55 per barrel (2005 dollars, approximately \$85 in 2023 dollars; Attanasi 2005)(203) and that "[m]ore recent estimates published by the [Energy Information Administration] estimate mean oil production in the Coastal Plain at 3.4 BBO produced by 2050 (Van Wagner 2018)."(204) Another statement in Appendix B says that "the projected ultimate recovery in the Coastal Plain is estimated to be anywhere from 1.5 BBO to 10 BBO (Attanasi and Freedman 2009)."(205) (203) Id. (204) Draft SEIS App. B, at B-1. (205) Id. at B-22. The assumptions used for the scenario analyzed in Appendix B, however, were that there would be "Up to three anchor fields, with a minimum of 400 million barrels of producible reserves in each..."(206) and that "Once all wells are online for a field, the projected yield would be approximately 100,000 barrels of oil per day (peak production) for approximately 3 years, with an 8 percent annual production decline."(207) This production profile for a 30 year field life yields total recoverable oil of 500 million barrels, as shown in the following figure: (206) Id. at B-9. (207) Id. at B-10. Figure 3. Anchor Field Production Concept See page 51 of the comment letter for figure Based on the above assumptions, the total maximum production would be approximately 1.5 billion barrels for the three anchor fields, i.e., a value at the low end of the potential oil production range "of 1.5 to 10.0 [billion barrels oil] under Alternatives B, C, and D."(208) As a result, BLM and FWS underestimate infrastructure and production, contrary to the draft SEIS statement that the objective of the Updated Reasonably Foreseeable Development Scenario is "to minimize the chance that the resultant impact analysis will understate potential impacts."(209) (208) Draft SEIS vol. 1, at 3-111. (209) Draft SEIS, App. B at B-3	Text in Sections B.7.4 and in Section 3.2.6 has been revised to add a note that ultimate recovery estimates in Attanasi and Freedman 2009 and Attanasi 2005 were based on there being no constraints on the size of development. Previous estimates did not consider that the acreage available to development facilities would be limited to a maximum of 2000 acres. This limitation would reduce ultimate oil recovery versus estimates that did not have a constraint on the size of development in the Coastal Plain.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	109	To better reflect likely development, Table B-5 and portions of the draft SEIS that rely on its information, need to be modified to show higher production and correspondingly more infrastructure. Items requiring modified language in Appendix B. The following changes need to be made: -After "wells spaced too tightly can make it difficult to get a workover rig on a well"(210) ADD or "respond to a blowout." (210) Id. at B-6. -ADD an assumption that during the time period of development and reclamation, i.e., 85 years, the climate will change and that will result in necessary design and operational changes.(211) For example, beaver migration northward could change the future hydrology of the proposed or actual development area. (211) Draft SEIS App. B, at B-9 to 10. "Study: Near-surface permafrost will be nearly gone by 2100," Rod Boyce (2023, Sept. 15). https://www.uaf.edu/news/near-surface-permafrost-will-be-nearly-gone-international-team-finds.php . Emeritus professor Vladimir Romanovsky, a permafrost specialist, of the University of Alaska Fairbanks Geophysical Institute co-authored this study. The study finds that under the most extreme warming scenario modeled by the Intergovernmental Panel on Climate Change, "By 2100, Earth's near-surface permafrost, within the upper 10 to 13 feet of the soil layer, may exist only in the eastern Siberian uplands, Canadian High Arctic Archipelago and northernmost Greenland...", i.e., permafrost would be gone from Alaska during the time period of oil and gas development on the Coastal Plain.	While the news article published on the UAF news and information page (Rod Boyce, 2023) highlights the potential disappearance of near-surface permafrost in Alaska by 2100, it's crucial to fully understand the study by Guo et al. (2023). Their research raises concerns about the future of permafrost, but it's essential to recognize the limitations of their model. Guo and colleagues themselves acknowledge caveats related to the resolution of their model, the incorporation of local climates, and the absence of consideration for current or future vegetation dynamics. Furthermore, it's important to note that the simulations presented in the study utilize a worst-case scenario climate forecast, which may overestimate the extent of permafrost loss. While this research is valuable and contributes to our understanding of climate change impacts on permafrost, it's essential to approach it with caution, especially considering its limited citation in other peer-reviewed journals thus far.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	110	-ADD "The BLM Authorized Officer will ensure that "[p]roduction would end when the value of production cannot meet operating [ADD and closure] expenses."(212) Without the first italicized change, industry could argue at any point that it is continuing to explore and need not pursue well closure and reclamation. (212) Draft SEIS, App. B at B-10.	Operator will end production on case by case basis when they determine operating costs exceed profits or when then no longer wish to continue production.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	111	-Table B-3,(213) after "Process seismic data and determine location of delineation wells to be drilled the following winter," ADD the following two bullets: "Map construction resources including gravel and vegetation/soil characteristics; Map coastal areas for likely barge landing and marine infrastructure locations." (213) Id. at B-11.	Appendix C, Table C-3 has been updated to include the suggested language.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	112	-Figure B-1,(214) ADD a pipeline connection to other stand-alone oil development infrastructure on the Coastal Plain. (214) Id. at B-15.	Figure C-1 has been updated in Appendix C per the suggested change.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	113	-Figure B-2,(215) ADD a note stating that when pipelines intersect, extra disturbance acreage would be needed for valve nests, power transmission nodes, operator access platforms and walkways, and other maintenance infrastructure. (215) Id. at B-16.	Figure C-2 has been updated in Appendix C per the suggested change.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	114	-After "it could take a considerable amount of time before gas would be exported,"(216) ADD ", or it could be stranded," (216) Id. at B-21.	Appendix C has been updated to include the suggested language.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	115	-Before "one seawater treatment plant,"(217) ADD "at least." (217) Id. at B-23.	Appendix C has been updated to include the suggested language.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	116	-After "an approximately 5-foot thickness"(218) ADD " and more with projected climate change." (218) Id. at B-24.	Language has been added to Appendix C noting the impacts of projected climate change on permafrost.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	117	-Provide a reference with a link for Northern Economics, Inc. 2023 in Section B.10.	The analysis was conducted by Northern Economics for this SEIS. There is no separate report.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	118	-The link for the BLM (2012) reference does not work. Please verify reference links throughout the draft SEIS.	The BLM 2012 reference link has been updated in Appendix C and verified throughout the SEIS.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	119	Misstatements requiring correction in Appendix B. The following changes need to be made: -Change "Barge trips are expected to begin in Dutch Harbor, Alaska"(219) to "Barge trips are expected to pass through Dutch Harbor, Alaska." Also, add a transit line south of Dutch Harbor in Figure B-2.(220) (219) Id. at B-14. (220) Id. at B-17.	The hypothetical development scenario is applicable to the program area, and speculation beyond where marine vessel traffic would go is beyond the scope of this analysis.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	120	-It is inaccurate to state that "The barge landing would likely use a floating dock for support. The dock would likely consist of impermanent, industrial strength plastic, modular blocks that can be joined together."(221) There is no evidence provided for these statements, nor is there a Lease Stipulation or a Required Operating Practice ensuring such construction. (221) Id. at B-19.	Appendix C has been updated to remove language referring to the potential materials that would be used for the floating dock. Additional language has been added for clarity.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	121	-It is inaccurate to state that "Local lakes are typically the preferred water sources"(222) for "waterflooding, reservoir pressure support, or other subsurface uses."(223) Lakes, especially those in the Coastal Plain, would not provide sufficient water for subsurface uses by industry. (222) Id. (223) Id.	The lack of sufficient water does not mean these are not the preferred water sources.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	122	-Change "or frost heaving"(224) to "from permafrost thawing." (224) Id.	Appendix C has been updated to the suggested language.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	123	-Change "would be pumped"(225) to "would transit through reservoir pressure." If pumping is required for partial processing of crude oil, the pad would require additional disturbance acreage. (225) Id. at B-20.	Pumping would be required, distance is further than could be supported by reservoir pressure. Disturbance for pumping equipment is included in the disturbance calculations.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	124	Central Processing Facility Acreage in Appendix B. Because it is an important figure, the Tribes request that BLM verify that "A typical pad for a [Central Processing Facility] and associated facilities, which include an airstrip, workers camp, and production well pad, is approximately 50 acres (BLM 2012)."(226) This acreage also needs to include an industrial service center similar to Kuparuk Industrial Center or Deadhorse and equipment and material laydown areas. If the total acreage is more than 50 acres, that needs to be stated in B.9.1 and reflected in Table B-5 (which now includes "other associated service facilities" but no additional acreage was added). (226) Id. at B-24.	The disturbance figures were based on similar facilities at other developments such as NPRA and Willow, certain assumptions were made to collocate facilities to minimize acreage (for example the CPF airstrip would also be used as the road across the facility when aircraft are not landing). If needed, an industrial service center would probably be located outside the Coastal Plain boundary at Point Thompson or on Native owned lands near Kaktovic and materials from this center would be hauled overland on ice roads during the winter season. Other associated service facilities were always included in the acreage but the language was added to be clear they had not been ignored which is why no additional acreage was added.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	125	Relatedly, the phrase "Facilities, including camps, equipment and other infrastructure at other North Slope developments..."(227) in section B.9.2 potentially should have been linked to the Central Processing Facility discussion in B.9.1. Similarly, that change may need to be made in the bullets in B.9.4. (227) Id.	Appendix C language has been updated to clarify the use of barge landings and storage areas.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	126	The Need for a Graphic Depiction of Development Sprawl. The Tribes previously requested that the agencies include an Appendix B figure showing realistic oil and gas development sprawl as such a graphic would help members of the public understand how the 2,000-acre limitation does not actually limit the geographic spread of development greatly. Below in Figure 4 is a graphic that does just that, using GIS tools to show an example of potential development sprawl across the Coastal Plain. Figure 4 was developed by the Tribes' engineering consultants who utilized known terrain and water body constraints when siting facilities. The figure shows four Central Processing Facilities, 14 satellite pads, a barge landing, etc., all of which is possible under Alternative B (see Table B-5). Figure 4: A Realistic Oil and Gas Development Scenario(228) (228) The Wilderness Society. (n.d.). The real impact of drilling in the Arctic Refuge - in 7 maps. https://storymaps.arcgis.com/stories/8384836f8a4e4aa49308fa5afb0d319b See page 54 of comment letter for figure 4	The agencies elected not to provide a map showing extent or location of facilities because the location of any facilities would be based on the locations of oil accumulations which have not yet been discovered or delineated. Such a diagram would give the incorrect impression that the agencies know where developments and facilities would be located, this might discourage interested parties from submitting relevant information or comments if the diagram gave an impression that developments were not going to be located in a particular area. Figures B-1 and B-2 show facilities and infrastructure and the extensive layout expected in any developments. Project specific proposals received in the future will be analyzed under a separate NEPA process with location specific information and maps so that the public can review and comment on facility locations.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	127	Economic Impacts in Appendix B. Table B-7, Projected Labor Income Effects of the Hypothetical Unconstrained Post-Leasing Exploration, Development, and Production Activities, should break out findings by residents of the North Slope Borough, the rest of Alaska, and elsewhere.	The estimates provided are based on a hypothetical development scenario and reflect potential employment opportunities in the North Slope (jobs by place of work) that could be available for locals, other Alaska residents, and workers from outside Alaska. It would be difficult to assume what percentage of total jobs would be filled by NSB residents, rest of AK, and elsewhere. The Affected Environment Section do note that currently, less than 10 oil and gas sector workers are from the North Slope communities.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	35	In Appendix B the SEIS states, Production is anticipated to peak at an estimated 100,000 barrels per day from each field (not necessarily concurrently) after 3 years from initial production, though this number may be exceeded for any particular development. From that point onward, production from the field is estimated to decline at a rate of approximately 8 percent per year. New production is expected to come online at various points during the decline but is not expected to bring production back to peak rates. Produced resources would be processed at a CPF to separate water and gas from salable oil and natural gas liquids. Water and gas would be reinjected into the formation to enhance oil recovery; oil and natural gas liquids would be shipped to market, likely via TAPS. Field production can last from 10 to 50 years before abandonment (BLM 2012). In the Coastal Plain, assuming the 100,000 barrel-per-day peak production and the 8-percent decline per year, the assumption was made that it would take an estimated 35 years after reaching peak production to get to the point of abandoning a field. Reinjecting produced gas and water helps maintain oil reservoir energy and improve hydrocarbon recovery efficiency by pushing oil toward the production wells, increasing the ultimate oil recovery. Associated gas and water injection wells are needed where no gas sales line exists and where water disposal is not allowed at the surface (BLM 2012). Depending on market forces, the size and number of fields discovered, and the timing of development, the projected ultimate recovery in the Coastal Plain is estimated to be anywhere from 1.5 BBO to 10 BBO (Attanasi and Freedman 2009). The alternatives stated in the SEIS vary in size and the number of potential wells, but the SEIS never addresses how a difference in size and number of wells would affect the amount of oil that could be recovered under each alternative. However, in the GHG emissions analysis in Appendix Q, the SEIS states that the assumptions in the model are based on the findings in Appendix B. The model produces different emissions estimates across the alternatives. If the model was based on the production estimates in Appendix B, the results of the emissions analysis should not vary across alternatives, as the analysis in Appendix B does not state that the production of oil would vary across alternatives.	Production amounts by Alternative have been added to the document.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	36	In appendix B, the SEIS states: It is noted that the projections of oil and gas reserves across the North Slope as cited herein, and predictions of likely future production levels resulting from those reserves, are necessarily highly speculative. For instance, USGS has repeatedly revised their prior assessments of producible oil and gas for the NPR-A and surrounding areas, as new information has become available and additional analysis has been conducted. These assessments have proven to fluctuate significantly over time, as evidenced by the fact that the assessments of technically recoverable reserves for NPR-A and surrounding areas were projected by USGS to be 10.5 billion barrels of oil and 61 trillion cubic feet of gas in 2002, then were revised to be 896 million barrels of oil and 53 trillion cubic feet of gas in 2010, and again were revised to be 8.7 billion barrels of oil and 25 trillion cubic feet of gas in 2017 (USGS 2002, 2010, 2017). Future studies and assessments, whether by the USGS or others, will likely continue to evolve and shift based on advancements in geophysical assessment and drilling technology. The SEIS uses an example from NPR-A to show how estimates of economically recoverable oil change over time due to improved technology and other factors. The SEIS failed to reference relevant studies specific to ANWR that also demonstrate how the amounts of estimated recoverable oil in ANWR have grown over time. The 1987 Report and Recommendation to Congress and Legislative EIS(11) estimated that there was a 15% chance that 2 BBO could be recovered from the 1002 area, a 1998 report(12) increased that likelihood to a 95% chance that there were 2 BBO in ANWR, and a 2009 report(13) estimates that there could be anywhere from 1.5 BBO to 10 BBO in ANWR. The SEIS only references the 2009 report when estimating the range of potentially recoverable oil in the study area. (11) https://pubs.usgs.gov/fedgov/70039559/report.pdf (12) https://pubs.usgs.gov/of/1998/ofr-98-0034/ (13) https://pubs.usgs.gov/of/2009/1112/pdf/ofr2009-1112.pdf	Several estimates of reserves and possible future production are discussed in Appendix C, these include Attanasi 2005, and Attanasi and Freedman 2009, the two most recent sources. The other mentioned sources are significantly out of date but will be examined for potential inclusion in the document.
Jorgenson	Janet	-	80336	9	APPENDIX B - HYPOTHETICAL SCENARIOS Page B-3 says there may be changes in oil extraction methods in the future that could increase safety and decrease damage. If that is included theN you should also say that there could be changes in the future that could cause more damage, for example if the world becomes desperate for oil and stipulations are relaxed, or if new inventions lead to some type of damage not even covered in the current SEIS.	Relaxing stipulations would require a new EIS.

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Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	135	As the Tribes have stressed throughout the development of the SEIS, Traditional Knowledge must be incorporated into every aspect of the NEPA analysis in order for the agencies to take a hard look at the direct, indirect, and cumulative impacts of a leasing program on the Coastal Plain and its resources and uses. BLM and USFWS have adopted guidance on involving Tribes in decision-making processes, including the use of Traditional Knowledge. USFWS's guidance commits the agency to soliciting and considering "traditional knowledge, and expertise of affected tribal governments in policies, agency actions, and determinations that have tribal implications."(234) BLM's guidance is intended to "assure (1) that federally recognized tribal governments and Native American individuals, whose traditional uses of public land might be affected by a proposed BLM action, will have sufficient opportunity to contribute to the decision, and (2) that the decision maker will give tribal concerns proper consideration."(235) (234) USFWS, Native American Policy (510 FW 1) (2016). (235) BLM, General Procedural Guidance for Native American Consultation (H-8120-1) (2004) at I-1. Despite promises of including robust Traditional Knowledge throughout the SEIS, the agencies have failed to undertake this task comprehensively. Despite acknowledging that Traditional Knowledge "is critical in the assessment of impacts in rural communities, particularly with regard to their subsistence and cultural concerns,"(236) Appendix C lacks numerous important sources of information and was not developed in consultation with the Tribes and Gwich'in Cultural Experts. The failure to compile and integrate Traditional Knowledge in the draft SEIS means the agencies failed to comply with NEPA's obligation to take a hard look at the direct, indirect, and cumulative impacts and that must be remedied prior to issuing a final EIS. The agencies must do more to incorporate traditional Gwich'in Knowledge into all parts of the SEIS analysis.(237) (236) Draft SEIS App. C, at C-1. (237) See, e.g., OSTP-CEQ, Memorandum for Heads of Federal Departments and Agencies, Tndigenous Traditional Ecological Knowledge and Federal Decision Making (Nov. 15, 2021), https://www.whitehouse.gov/wp-content/uploads/2021/11/111521-OSTP-CEQ-TTEK-Memo.pdf ; OSTP-CEQ, Memorandum for Heads of Federal Departments and Agencies, Guidance for Federal Departments and Agencies on Tndigenous Knowledge (Nov. 30, 2022), https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-TK-Guidance.pdf ; and USFWS, Native American Policy (510 FW 1) (2016) (USFWS's guidance commits the agency to soliciting and considering "traditional knowledge, and expertise of affected tribal governments in policies, agency actions, and determinations that have tribal implications."). To help the agencies fulfill this requirement, the Tribes submit Attachment A, a compilation of quotes and citations from a variety of sources including ethnographic and subsistence reports conducted by government and Tribal entities, ethnographic research into oral histories conducted for academic purposes, online databases, archival materials, and interview transcripts.	The Final SEIS has been updated to incorporate additional Traditional Knowledge from existing data sources recommended by the Inputiat and Gwich'in during the 2019 Final EIS and SEIS NEPA processes, as well as new information provided during the public comment period. This includes traditional information provided by the Gwich'in as an attachment to their public comment submissions.
Lampe	Charles	Kaktovik Iñupiat Corporation	80350	3	Not only does this effort take away our economic rights as an Alaska Native Corporation, but it is also apparent that there are those who are using this DSEIS process to erase us from our homelands. While there are many issues that we wish to comment on with respect to the DSEIS, there is one that is so impactful to our people that it is causing difficulty focusing on the oil and gas leasing aspects of the document. This is Appendix C. How dare you let something like that enter the DSEIS? Especially after our meeting in Kaktovik in January 2023 and our concerns over cultural trespass! We were told that this would not happen, yet here we are. We need to have Appendix C removed from the document - and as such, we need more time to effectively review the rest of the DSEIS because we now realize that we need to be more diligent than ever in how you, as agencies, incorporate 'so-called' indigenous knowledge into the document. Our community is extremely distressed over Appendix C and our trust in the agencies has been greatly diminished. Your misguided focus to incorporate additional indigenous knowledge into the DSEIS when the original 2020 EIS had ample indigenous knowledge has created a rather significant breach of trust with us. The trust that we had been working on with the agencies is now gone - when will the federal government realize that its overbearing nature with respect to our community is hostile to us as a people? We are a community that is still trying to hold the government to its promises made to us under ANCSA and later under ANILCA.	Appendix D in the Draft SEIS was carried forward with minimal modification from the 2019 Final EIS and reflects traditional knowledge provided by the Inupiat and Gwich'in. This information is included in Appendix D of the Final SEIS and includes the information provided by both the Inupiat and Gwich'in during the 2019 Final EIS process as well during the SEIS process, per requests from specific communities. Where possible, the joint lead agencies have supplemented this information with source documents recommended by both the Inupiat and Gwich'in.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Rexford, Sr.	Edward	Native Village of Kaktovik	80353	10	Based on the trauma the agencies have caused in the SEIS we are demanding more time for the public process because we need to ensure Appendix C is accurate. Appendix C reflects incorporating indigenous knowledge into a document with no protocols for verification of statements, there are no standards, and the SEIS team are not social or cultural anthropologists. Indigenous knowledge is not an arbitrary statement made by any indigenous person in any past public meetings on various matters that are out of context. In fact, the November 30, 2022 Guidance for Federal Departments and Agencies on Indigenous Knowledge states on page 2 "Since Indigenous Knowledge is often unique and specific to a Tribe or Indigenous People, and may exist in a variety of forms, Agencies often lack the expertise to appropriately consider and apply Indigenous Knowledge." Interestingly, page 8 states "The genocide and ethnocide of Indigenous Peoples in the United States is well documented. Historically, Federal policies have resulted in the separation (both physically and intellectually) of Indigenous Peoples from the places they are connected to, severing relationships with lands, waters, and social systems, which are all critical elements of Indigenous Knowledge. These policies systematically served to assimilate and displace Native people and eradicate Native cultures.". NVK would suggest that what you have accomplished under Appendix C is exactly this - the federal policies of intellectually separating us from the places WE are connected to through this SEIS creates harm to us as indigenous people. The Guidance also states on page 9, "Agencies should not initiate consultation with an assumption that the Tribal Nation will share its knowledge with the agency, but rather with an inclusive process that empowers the Tribal Nation to determine if, and how, Indigenous Knowledge may be included in the agency's process.". This has been an area of dispute between NVK, and the agencies and we expressed our concerns that ITEK was being treated loosely by the agencies. We should not have to defend our homelands against loosely formed ITEK through NEPA - the 2020 EIS characterized our relationship to the land accurately and did not give our lands to another group that does not live on or utilize these lands in any way.	Traditional knowledge provided by the Inupiat and Gwich'in during the 2019 Final EIS process and the SEIS NEPA process was incorporated into the Final SEIS, Appendix D (Draft SEIS Appendix C) per requests from specific communities. Where possible, the joint lead agencies have supplemented this information with source documents recommended by both the Inupiat and Gwich'in. This information is provided in Appendix D (Draft SEIS Appendix C) in a format consistent with that from the 2019 Final EIS.
Allen	Mark	Government of Canada	79200	42	Appendix D, section "D.1 International Agreements" is missing an entry and description of the Migratory Birds Convention/Parksville Protocol.	The Migratory Birds Convention/Parksville Protocol was added to Appendix E.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	144	Furthermore, Appendix D: Methods to Inventory the APE remains in draft form, and the agencies amended the PA to require completion by April 4, 2021. The SEIS also needs to include a discussion of BLM's Section 106 activities related to the program area and how the Section 106 process is influencing the choice of alternatives in the draft SEIS. BLM and USFWS must describe in the Cultural Resources section what has occurred in the Section 106 process for its undertakings related to the program area. As BLM and USFWS know, this is because the agencies "should ensure the ... EIS and record of decision (ROD) includes appropriate scoping, identification of historic properties, assessment of effects upon them, and consultation leading to resolution of any adverse effects."(257) The Council on Environmental Quality, Executive Office of the President, and Advisory Council on Historic Preservation (2013:27)(258) provide additional guidance on including information from the Section 106 process in a draft EIS: (257) 36 CFR § 800.8(a)(3). (258) Council on Environmental Quality, Executive Office of the President, and Advisory Council on Historic Preservation. (2013) NEPA and NHPA: A Handbook for Integrating NEPA and Section 106. https://www.achp.gov/index.php/digital-library-section-106-landing/nepa-and-nhpa-handbook-integrating-nepa-and-section-106 . "The agency should include any information obtained from the Section 106 consultation in the draft [S]EIS sections on affected environment and impacts, subject to the confidentiality provisions of Section 304 of the NHPA. This ensures that determinations regarding which alternatives to advance for detailed analysis and which alternative is selected as the preferred alternative are made with an appropriate awareness of historic preservation concerns."	Appendix E summarizes laws and regulations relevant to the SEIS. The SEIS, Chapter 4 was updated as part of the preparation of the final SEIS to include a current summary of NHPA, Section 106 activities, including those completed since publication of the Draft SEIS.
Brisson	Brook	Trustees for Alaska	80131	507	The conclusion that direct and indirect subsistence impacts to the Porcupine Caribou Herd would not be significant for any alternative is unfounded and must be revised. Traditional Indigenous knowledge indicates that any disturbance to the Porcupine Caribou Herd's calving and nursing grounds will increase calf mortality and seriously impact the herd.(1357) The agencies must explain how their conclusion regarding Alternatives B and C - both of which allow for development within the Porcupine Caribou Herd's high-use calving area(1358) - comports with Traditional Indigenous knowledge. This is particularly true for Alternative B which allows leasing of 22 percent of high-use calving habitat for the Porcupine Caribou Herd, and seismic exploration across the program area.(1359) (1357) DSEIS App. E at E-13 (explaining traditional Gwich'in knowledge indicates "any development in the [Coastal Plain] would have devastating effects on the population of the [Porcupine Caribou Herd]"). (1358) Id. at E-16, E-11. (1359) Id. at E-11.	The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	508	The agencies' findings also conflict with the best available science. In the ANILCA Section 810 analysis, BLM and FWS dismiss studies modeling impacts to the Porcupine Caribou Herd's size based on development scenarios in the project area.(1360) This approach is arbitrary. The agencies admit that the population declines predicted by such models could have "substantial impacts on communities that rely on the Porcupine Caribou Herd."(1361) They also recognize such studies as the best available science elsewhere in the draft SEIS.(1362) As such, their findings - that "any day a caribou spends in [the program area] would potentially cause it to be disturbed" and that oil and gas development would lead to a decrease in the PCH's population(1363) - must be incorporated into the final Section 810 analysis. (1360) Id. at E-12 ("[T]he lack of support for specific model assumptions in the literature limit the utility of these models when determining whether impacts to subsistence will be significant."). (1361) Id. at 3-329. (1362) Id. at 3-222 (explaining estimates "are based on different assumptions and development scenarios but provide the best available quantification of the magnitude of potential demographic impacts on the Porcupine Caribou Herd that could occur as a result of development."). (1363) Id. App. E at E-12.	While the SEIS notes that there would be "substantial impacts" (as quoted by the commenter) if the models are accurate, the SEIS also acknowledges limitations of the studies modeling impacts to the Porcupine Caribou Herd, and note that some of the assumptions are not supported in the literature. The 810 includes the referenced language ("any day a caribou...") Reviewed and edited ANILCA 810 as appropriate based on review of final caribou analysis in the SEIS.
Brisson	Brook	Trustees for Alaska	80131	509	The agencies' treatment of studies modeling changes in calf survival and population growth under various development scenarios notably departs from their approach elsewhere in the draft SEIS. Section 3.3.4, regarding impacts to caribou, takes a nuanced approach to the various studies,(1364) pointing out some differences in the assumptions underlying prior modeling studies and assumptions in the draft SEIS regarding potential future development but correctly identifying these studies as "the best available quantification of the magnitude of potential demographic impacts on the Porcupine Caribou Herd that could occur as a result of development."(1365) But, in the ANILCA Section 810 analysis the agencies concludes "the lack of support for specific model assumptions in the literature limit the utility of these models when determining whether impacts to subsistence will be significant."(1366) While it is always preferable to have every aspect of a model independently validated in the scientific literature, this standard is rarely met and studies often must proceed with reliance on the best available science, as is done in the cited studies. Furthermore, it is striking that no attempts are made by BLM and FWS to conduct their own analysis or estimates. Sufficient time has passed since the FEIS to complete modeling studies using approaches updated from Russell and Gunn or other development impact analyses, (1367) however this was not done. It is not reasonable or scientifically justifiable to simply ignore the modeled estimates of multiple independent studies reporting estimated declines in population size and to conclude without support that population impacts would be negligible. (1364) Griffith et al. 2002; Russell and Gunn 2019; Russell et al. 2021. (1365) DSEIS at 3-222. (1366) Id. App. E at E-12. (1367) E.g., Tews et al. 2007; Wilson et al. 2013; Fullman et al. 2021b.	Reviewed and edited ANILCA 810 as appropriate based on review of final caribou analysis in the SEIS.
Brisson	Brook	Trustees for Alaska	80131	510	As a result of dismissing relevant scientific literature, the agencies reach numerous unsupported conclusions. The ANILCA Section 810 analysis concludes that impacts to the Porcupine Caribou Herd's size would not be impacted as a result of maternal displacement, behavior, feeding, and body condition.(1368) Similarly, the agencies conclude "large-scale displacement" leading to decreased abundance of the Porcupine Caribou Herd is unlikely.(1369) These conclusions conflict with scientific literature, Traditional Indigenous knowledge,(1370) and the results of the best-available scientific modeling of population implications of development.(1371) Confusingly, the agencies conclusions also conflict with other statements in the draft SEIS. The agencies conclude elsewhere that "changes in caribou behavior will likely occur as a consequence of disturbance and could result in energetic costs that could have demographic impacts,"(1372) that calving displacement by roads is likely to persist despite repeated exposure,(1373) and that, in the cumulative case, "climate change is expected to change the survival rates and distribution of terrestrial mammals (including caribou)."(1374) (1368) DSEIS App. E at E-13. (1369) Id. at E-14. (1370) Id. at E-13 ("According to the Gwich'in's knowledge, any development in the program area would have devastating effects on the population of the Porcupine Caribou Herd and other resources, such as migratory birds, that have key habitat in the Arctic Coastal Plain. In addition, there are those among the Iñupiat who report similar knowledge regarding the effects of Arctic Coastal Plain development."). (1371) Id. at E-12. (1372) Id. at 3-221. (1373) Id. at 3-221. (1374) Id. at 3-307.	Reviewed and edited ANILCA 810 as appropriate based on review of final caribou analysis in the SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	511	The conclusion in the Section 810 analysis that large-scale shifts in displacement are unlikely also ignores the documented shift in calving distribution of the Central Arctic Herd away from industrial areas.(1375) There are several reasons why the Porcupine Caribou Herd is expected to react more strongly to development than the Central Arctic Herd. Many of these were also pointed out previously by the USGS.(1376) One major factor, which does not appear to be discussed in the draft SEIS, is that the coastal plain is narrower within the Arctic Refuge compared to the main Central Arctic Herd range,(1377) leaving less room for shifts in space use away from development such as were observed with the Central Arctic Herd.(1378) Another is the different demographic drivers of the Porcupine Caribou Herd and Central Arctic Herd.(1379) The draft SEIS also indicates that the Porcupine Caribou Herd could be subject to hunting from industrial roads in the program area and may be displaced by roads to a greater degree than the Central Arctic Herd as a result.(1380) However, it is not at all clear when or how such hunting may occur.(1381) The degree of increased displacement likely to be observed for the Porcupine Caribou Herd is also not addressed beyond noting it may be larger than the two to three miles typically observe within North Slope oil fields.(1382) These points should be clarified in the final SEIS. Studies have shown that hunting may increase avoidance responses of ungulates to infrastructure.(1383) Indeed, one study found road effects on caribou extended up to 15 km from roads some years during hunting season.(1384) The presence of hunting in the Coastal Plain will create different conditions for the Porcupine Caribou Herd compared to those experienced by the Central Arctic Herd, potentially increasing the effect of displacement from roads and facilities. These, and other differences, make it likely that the Porcupine Caribou Herd will exhibit even stronger reactions to development than the Central Arctic Herd. Since the Central Arctic Herd showed shifts in overall distribution away from development, in addition to persistent patterns of finer scale avoidance of infrastructure and human activity cited above, it is incumbent on BLM and FWS to analyze similar effects for the Porcupine Caribou Herd or to clearly explain why similar patterns are not expected on the Coastal Plain. (1375) Cameron et al. 2002; Wolfe 2000. (1376) Griffith et al. 2002. (1377) 2019 DEIS Comment Letter App. B at Map 50. (1378) Cameron et al. 2002; Wolfe 2000. (1379) Russell and Gunn. 2019. (1380) DSEIS App. E at E-9 (noting "hunting along roads in the program area could increase the probability of delays or deflections" of the Porcupine Caribou Herd as compared to the Central Arctic Herd). (1381) See e.g. Id. at 3-209 (explaining without further detail that "[s]ome hunting by local residents is likely to occur from roads in the program area"); see also id. App. E at E-8 (addressing the possibility of increased caribou displacement "if subsistence hunting occurs from industry roads"). (1382) Id. App. E at E-8 ("displacement of approximately 2.49-3.11 miles would be expected in the program area [] with additional displacement if subsistence hunting occurs from industry roads"); id. at 3-315 (noting caribou are observed to be displaced around transportation corridors by about 3.11 miles in North Slope oil fields but that "the potential for hunting along road corridors may result in greater displacement distances" in the program area). (1383) Paton et al. 2017.; Plante et al. 2018. (1384) Plante et al. 2018.	Reviewed and edited ANILCA 810 based on review of final caribou analysis in the SEIS.
Brisson	Brook	Trustees for Alaska	80131	512	Repeatedly in the ANILCA Section 810 analysis the acreage of high-use calving area made available for leasing and surface occupancy is compared to the total acreage of high-use calving both within and outside of the program area.(1385) This can be misleading, yielding relatively low percentages of occupancy since the leased acres are constrained within the program area but the high-use area is not. If the agencies want to retain the comparison against the total high-use calving area, they should also provide percentages depicting comparison with the area just within the Coastal Plain program area. This would present a more complete picture of what the agencies are doing within the lands that are part of the leasing program as well as in total view across the herd range. The ANILCA Section 810 analysis would also be strengthened by reporting information not just about current usage but predicted usage under climate change scenarios. While there is acknowledgement that "the calving distribution may move farther west in years with warmer springs"(1386) this should be complemented with predictions of a 429% increase in projected suitable habitat in the Coastal Plain program area during calving(1387) and the implications of these shifts. (1385) E.g., DSEIS App. E at E-11. (1386) Id. at E-11. (1387) Severson et al. 2021	Edited Section 810 to also include percentages of high use calving both within and outside of the program area whenever these data are presented. Reviewed terrestrial mammals section and incorporated any new analysis and data on predicted suitable habitat in the Coastal Plain.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	513	The agencies' conclusions regarding foraging and movement patterns are also problematic. First, the agencies conclude that none of the action alternatives would reduce forage enough to affect caribou abundance or availability.(1388) But this ignores the science behind why the Porcupine Caribou Herd calves on the Coastal Plain.(1389) Second, the draft SEIS concludes that caribou movement would remain "relatively undisturbed" under development alternatives.(1390) This conclusion is baseless. It also results from incomplete analysis because the draft SEIS focuses on the impacts of direct habitat loss under each alternative but ignores the likely more harmful indirect effects of oil and gas development.(1391) In addition, and as mentioned above, the draft SEIS does not consider impacts from preleasing activities such as seismic exploration which could alter herd movements by destroying or altering vegetation within important habitats for the herd. These impacts must be included in the draft SEIS because changes in the foraging and migration patterns of the Porcupine Caribou Herd will have a significant impact on subsistence activities. The agencies should also revise their assertion that mitigation measures applied in the Reserve will reduce impacts to caribou movement patterns.(1392) Nuiqsut residents reports that caribou movements in their area have changed substantially as a result of development in the NPR-A.(1393) (1388) DSEIS App. E at E-8, E-15. (1389) Id. at 3-195 (explaining the Porcupine Caribou Herd's Coastal Plain calving grounds have "higher digestible concentrations of nitrogen than in inland areas" and that "the highest forage nitrogen concentrations occur during the post-calving period when peak lactation occurs [] and nutritional demands of parturient caribou are greatest"); see also id. at 3-209 (explaining "alternative calving areas next to the Porcupine Caribou Herd's calving grounds contain less high-quality forage [and] higher predator densities" and that calf survival rates are "lower in years when higher proportions of calves were born off the Coastal Plain and when less vegetative biomass [] occurred on the annual calving ground at the time of peak lactation"). (1390) Id. App. E at E-15. (1391) See e.g. Id. at E-8. ("Caribou abundance or availability and the subsistence use thereof would not likely be affected as a result of direct habitat loss.") (1392) Id. at E-11. (1393) Id. at 3-329 (explaining Nuiqsut hunters "report that the caribou herd is remaining farther west due to development activities" and industrial roads are "viewed as causing deflection of caribou").	The Section 810 Analysis states that caribou movements would be "relatively undisturbed" only under Alternative D, because areas most important to caribou movement would be "subject to NSO, TLs, or would not be offered for lease sale." It acknowledges that there would still be deflections and delays, and does not state this for all alternatives. The SEIS and the 810 analysis both address potential impacts of seismic activity. Reviewed Section 3.3.4 to ensure consistency of ANILCA 810 with Section 3.3.4 conclusions.
Brisson	Brook	Trustees for Alaska	80131	515	The ANILCA Section 810 analysis repeats several statements that do not align with the best available science that are addressed more fully above.(1402) These issues include focusing only on vehicle effects at a rate of 15 vehicles per hour, assumptions of habituation, and claims that the motivation to seek insect relief habitat means caribou will be less likely to experience road and traffic effects,(1403) which ignores findings of recent studies that document decreased use of areas near roads by caribou even during the mosquito harassment season(1404) and behavioral responses to traffic in all seasons.(1405) Responses may decrease during insect harassment, but that does not imply a lack of effect. As described above with reference to the relevant literature, all these topics need to be updated to align with the best available scientific information. (1402) See supra Section VI.I.4. (1403) DSEIS App. E at E-9. (1404) Johnson et al. 2020; Prichard et al. 2020; Severson et al. in press. (1405) Severson et al. in press.	The analysis does not focus only on vehicle effects at a rate of 15 vehicles per hour, but states that these traffic volumes increase the probability of delays or deflections. The analysis also does not state that there will be zero effect on caribou movement during mosquito harassment season, but that they will be less likely to be affected as data have shown. Reviewed 810 analysis and edited based on revised terrestrial mammals section.
Brisson	Brook	Trustees for Alaska	80131	516	The ANILCA Section 810 analysis also asserts that the mitigation measures provided by ROPs 34, 36, and 40 would minimize the effects of aircraft on caribou and caribou hunting, pointing to similar procedures being used in the Reserve as being "generally successful in reducing impacts."(1406) This is unsupported. Indigenous knowledge by residents living in the Reserve continues to report conflict of aircraft with subsistence hunting and caribou behavior.(1407) Furthermore, as noted above the guidelines for aircraft altitudes do not align with FAA guidance for Wildlife Refuges,(1408) increasing concerns about impacts in the sensitive Coastal Plain. These various discrepancies raise questions about the lack of effects assumed by the ANILCA Section 810 analysis and must be addressed in the final SEIS and revised Section 810 analysis. (1406) DSEIS App. E at E-11. (1407) See e.g., Id. at 3-310. (1408) FAA. 1984.	In an ongoing monitoring study of impacts on subsistence caribou hunting in Nuiqsut, reported impacts associated with aircraft traffic have declined as communication and other mitigation measures have improved. Reports of impacts from aircraft continue to occur, as reported in the SEIS and in the 810 analysis. Mitigation measures have not eliminated all impacts, and the Section 810 analysis does not state this.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	517	Another assumption that is not supported is the statement that "lower activity levels resulting from TLs result in lower levels of disturbance to caribou."(1409) While stated as an assertion, this is not clearly demonstrated in the scientific literature and Section 3.3.4, regarding caribou, provides no justification for the effectiveness of timing limitations. Instead, Section 3.3.4 states, "the potential impacts of this alternative [Alternative B] on caribou would depend, in large part, on how well these TLs avoid displacement of calving caribou and impediments to caribou movements during other times of year when caribou are present."(1410) The Section 810 analysis needs to be consistent with the analysis in the draft SEIS regarding the impacts of development on caribou and to clearly cite its sources when making claims, especially if those claims are used to indicate a lack of impact on caribou and subsistence users. This is especially the case given that a report by well-published caribou experts recently stated, "[w]e simply do not know whether... continuing drilling while shutting down construction [Time Limited stipulation] is effective mitigation."(1411) Until effectiveness of mitigation measures to reduce impacts to caribou below a biologically significant level has been clearly demonstrated in the scientific literature, the DSEIS cannot assume they will be effective. The agencies need to update their statements to conform with the best-available science. (1409) DSEIS App. at E-11. (1410) Id. at 3-215. (1411) Russell and Gunn. 2019 at 92.	Reviewed the Section 810 analysis for consistency with Section 3.3.4 as it pertains to the effectiveness of TLs.
Brisson	Brook	Trustees for Alaska	80131	518	Under ANILCA Section 810, "the purpose of the cumulative effects analysis is to determine the effects of the proposed action and alternatives together with other past, present, and reasonably foreseeable future actions."(1412) A "may significantly restrict" finding in the cumulative case triggers the notice, hearing, and determination requirements of ANILCA Section 810(a)."(1413) BLM and FWS's conclusion that Kaktovik is the only community that will experience impacts to subsistence in the cumulative case is contrary to the evidence before the agencies. This finding disregards the broad range of cumulative impacts facing subsistence users and should be revised in the final SEIS. As the issues raised below repeat concerns addressed in prior comments regarding BLM's previous ANILCA Section 810 cumulative analysis, we fully incorporate those comments here.(1414) (1412) Instruction Memorandum at 7. (1413) Instruction Memorandum at 7. (1414) 2019 DEIS Comment Letter at 409-412; 2021 Scoping Comment Letter at 215-16.	The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects.
Brisson	Brook	Trustees for Alaska	80131	519	Repeating the structure of their direct and indirect ANILCA Section 810 analysis, the agencies cumulative analysis considers just four communities.(1415) As discussed above and in prior comments, this approach overlooks cumulative impacts that will occur in numerous Indigenous communities. Most notably, the agencies substantially misstate and fail to account for impacts to the Gwich'in. The draft SEIS indicates that a decline in abundance of the Porcupine Caribou Herd in the cumulative case would decrease harvest success and amounts for residents of Kaktovik, Arctic Village, and Venetie.(1416) However, the agencies go on to state that "other Gwich'in communities who receive Porcupine Caribou Herd caribou through sharing networks could also experience indirect impacts through a decline in sharing."(1417) This conclusion makes the inaccurate suggestion that Gwich'in communities, beyond those closest to the program area, only utilize the Porcupine Caribou Herd through sharing networks. But, as the agencies recognize, subsistence hunters in many Gwich'in communities rely directly on the Porcupine Caribou Herd.(1418) The agencies must revise their cumulative analysis to account for the reality that oil and gas leasing on the Coastal Plain risks significant subsistence restrictions for all Gwich'in communities.(1419) (1415) DSEIS App. E at E-19. (1416) Id. at E-21. (1417) Id. (1418) Id. at 3-351 (stating generally that the Gwich'in "rely heavily on the Porcupine Caribou Herd"); id. at 3-302 (explaining use of caribou is "high" in the Gwich'in communities of Circle and Eagle as well as Venetie); id. at 3-357 (explaining changes in caribou migration and distribution could cause hunters in Fort Yukon, and Gwich'in communities in Canada to "spend[] more time and effort hunting for caribou"). (1419) Id. App. E at E-21.	Reviewed language regarding impacts to other Gwich'in communities and other users of the Porcupine Caribou Herd to clarify that large-scale impacts could also result in reduced harvest amounts for these communities. Future EISs and Section 810 analyses for individual projects may include additional communities (e.g., the 22 caribou study communities), as these analyses will have specific development projects to analyze.
Brisson	Brook	Trustees for Alaska	80131	521	The agencies also draw an unclear and questionable conclusion regarding impacts to Nuiqsut. While the agencies purport to limit their ANILCA 810 "may significantly restrict" finding in the cumulative case to Kaktovik, some sections of the cumulative analysis appear to support a similar finding for Nuiqsut.(1423) The failure to formally make such a finding for Nuiqsut must be corrected in the final SEIS. As the agencies recognize, subsistence impacts "due to development in the vicinity of Nuiqsut have already been found to be potentially significant."(1424) It is therefore unclear how the agencies reached the conclusion that further impacts to caribou including increased vehicle, shipping, and air traffic under all action alternatives "would not contribute to cumulative effects on Nuiqsut's resource availability."(1425) (1423) DSEIS App. E at E-20 ("Impacts to Nuiqsut's ability to access subsistence resources, according to previous EISs, would be significant."). (1424) Id. at E-22. (1425) Id.	The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	522	Many of the agencies' conclusions in the cumulative case must also be revised. For example, the conclusion that future development will not impact caribou abundance conflicts with the agencies' findings elsewhere in the draft SEIS.(1426) In the cumulative analysis for subsistence resources the agencies indicate "availability of certain subsistence resources, such as caribou, sheep, moose, small land mammals, fish, waterfowl, or vegetation, would likely be reduced."(1427) This is not carried into the ANILCA Section 810 analysis for some reason. The agencies' conclusion is also in direct conflict with best available science.(1428) These authorities conclude that a future shift in calving to the east would lead to declines in calf survival and that "[i]f calving shifts west in the future, as predicted, the impact of displacement from infrastructure in the calving range could be even larger."(1429) In addition, the conclusion that subsistence resource abundance would not be impacted because "there is a low likelihood of industrial roads in the program area becoming open to public use"(1430) is directly contrary to the history of industrial access roads in Alaska such as the Dalton Highway. As the agencies recognize elsewhere in the draft SEIS, subsistence hunters are likely to face significant competition from outside hunters in the event roads initially restricted to industrial access are opened to the public.(1431) The suggestion that impacts to subsistence resources and users in the cumulative case will be reduced by mitigation measures contained in the draft SEIS must also be revised. (1432) As addressed elsewhere in these comments, many of the mitigation measures relied upon lack the effectiveness and enforceability necessary to adequately protect Coastal Plain resources including subsistence resources.(1433) (1426) Id. at E-21 to E-22. (1427) Id. at 3-330. (1428) Id. at 3-222 (discussing findings of Griffith et al. (2002) and Russell and Gunn (2019)). (1429) Id. at 3-222. (1430) Id. App. E at E-22. (1431) Id. at 3-354. (1432) Id. App. E at E-20 to E-21. (1433) See supra Section IV.B.5.	While the cumulative analysis of the SEIS does state there would likely be a reduction in the availability of certain resources, the 810 analysis bases its conclusions on whether those reductions would cause a "significant restriction" in subsistence uses. In terms of roads becoming open to public use, the Dalton Highway is not directly comparable to industrial roads connecting oil and gas developments. While the Dalton Highway is open to public use, roads connecting oil developments (e.g., Alpine, Kuparuk) remain closed to the public and open to local residents with security restrictions. Regarding mitigation measures, the analysis acknowledges the limitations of mitigation measures to eliminate all impacts. Revised text to include potential for westward shift of calving grounds and increased potential for displacement.
Brisson	Brook	Trustees for Alaska	80131	523	In addition, the agencies analysis overall, but particularly the cumulative impact analysis, fails to adequately address the fact that Kaktovik residents will have to travel further in order to hunt because they will be prohibited from hunting near oil and gas development sites (including oil wells, pipelines, etc.). While the agencies note legal access to subsistence "may be altered" under Alternative B, they conclude "large scale" subsistence access would likely be maintained.(1434) The agencies do not explain how they reached this conclusion as part of their alternatives analysis. Even more problematic, the agencies do not address legal restrictions on subsistence access in their cumulative analysis. If development is allowed in the Coastal Plain, subsistence hunting areas near Kaktovik will likely become "no-hunting zones" where firearms and subsistence activities will be prohibited. This is a troubling possibility given that future development may occur "to the west, south, and east of [Kaktovik's] traditional hunting areas"(1435) and cause the people of Kaktovik to travel further away to hunt caribou and other subsistence resources. This impact should be more thoroughly addressed and analyzed in the final SEIS as part of the agencies' alternatives and cumulative analysis. (1434) DSEIS App. E at E-14. (1435) Id. at E-20.	While it is true that there will be impacts on access to use areas, the BLM concludes that access will not be restricted such that the overall use area for Kaktovik will change as a result of these restrictions. Reviewed language regarding large-scale access and edited to provide additional context. Also reviewed cumulative analysis to ensure legal restrictions to access are adequately addressed.
Brisson	Brook	Trustees for Alaska	80131	524	The agencies' discussion of the cumulative effects of climate change must also be revised to account for the serious impacts facing Indigenous communities. Industrial development is a "major impact to subsistence activities" across the North Slope(1436) and climate change is and will continue to compound these impacts by affecting "the habitat, behavior, distribution, and populations of fish and wildlife."(1437) Yet, BLM and FWS's ANILCA Section 810 cumulative analysis section on 'climate change' focuses almost exclusively on reduced access due to climate change. While access is an important issue, this section does not adequately address the overarching issue of decreased subsistence resource abundance due to climate change addressed elsewhere in the draft SEIS. This is a significant oversight. Assessing cumulative impacts to subsistence resources and users requires consideration of the combined impact oil and gas leasing on the Coastal Plain and other RFFAs will have on resource abundance in light of climate change.(1438) This analysis must recognize that decreased abundance of subsistence resources is a current reality facing communities; subsistence hunters are already experiencing reduced resource abundance due to climate change. Where decreased abundance due to climate change is addressed elsewhere in the draft SEIS, FWS and BLM suggest the issue is one that could face subsistence hunters in the future.(1439) As one Venetie resident explained: (1436) Id. at E-23. (1437) Id. at E-23. (1438) Id. at E-23. (1439) Id. at 3-307 (explaining climate change is "expected to change the survival rates and distribution" of numerous subsistence species including caribou, muskoxen, bowhead whales, seals, beluga whales, polar bears, white-fronted geese, brants, eiders, and fish). Back when I was about five, six, seven years old, you can even hear people talking, so much noise with geese there. Now I go there, I got tears in my eyes. Barely see geese. We are losing. We are losing ducks, caribou, and less and less. Moose is getting less. Fish is pretty scary."(1440) (1440) Id. App. C at C-18 (quoting Macarthur Tritt, DEIS Public Meeting, February 9, 2019, Venetie, Alaska). The analysis must be revised to accurately reflect that climate change is already impacting subsistence.	The cumulative analysis does address potential changes in abundance resulting from climate change. Reviewed and edited cumulative discussion to provide additional discussion regarding existing impacts of climate change on species abundance, health, and availability.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	2	Caribou responses to climate change, lessons from the Central Arctic Herd, and Russell and Gunn's (2019) quantitative analysis which were discussed in Chapter 3 were not included in Appendix E, the ANILCA Section 810 Draft Evaluation. These deficiencies resulted in the lack of support for Appendix E's primary conclusion.	The 810 analysis includes an in-depth discussion of Russell and Gunn (2019) and provides comparisons to the Central Arctic Herd. Revised cumulative analysis section to summarize potential impacts of climate change on caribou.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	14	As acknowledged by DOI, the ANILCA Section 810 subsistence evaluation for the 2020 leasing program was legally deficient.(61) The ANILCA Section 810 subsistence evaluation contained in Appendix E of the draft SEIS has been barely changed and is likewise deficient, both procedurally and substantively. (61) See, e.g., DOI, Decision, Suspension of Operations and Production to Alaska Industrial Development and Export Authority (June 1, 2021). Procedurally, the agencies have failed to develop the ANILCA Section 810 subsistence evaluation in a timely manner to conduct meaningful public hearings in affected communities. Moreover, from the information in the draft SEIS and despite holding haphazard Section 810 public hearings, it is unclear whether the agencies have actually made ANILCA Section 810 "may significantly restrict" findings for the communities of Utqiagvik, Arctic Village, Venetie, and Fort Yukon. Substantively, the ANILCA Section 810 subsistence evaluation must contain a more robust analysis of development impacts on caribou and waterfowl to inform the development of an alternative that minimizes impacts on subsistence uses.	The agencies decided to hold ANILCA 810 hearings in some communities that do not have a positive "may significantly restrict" finding because the preliminary 810 evaluation could potentially be revised at the Final SEIS stage to identify additional positive communities based on public comments and ANILCA 810 subsistence hearing testimony received during the Draft SEIS public comment period. By holding additional subsistence hearings earlier, we would not have to later hold hearings in any communities for which the final 810 evaluation may make additional positive findings. Additionally, those communities may appreciate our added effort to reach out to them during an earlier stage. We also determined that holding 810 hearings in these additional communities would require minimal additional effort since were already planning to hold Draft SEIS public meetings there to begin with and because those same meeting sessions could also serve as the ANILCA 810 subsistence hearings.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Councill	80190	20	No support for Appendix E's primary conclusion. Appendix E states that "based on the hypothetical development scenario, potential impacts to herd size as a result of displacement of maternal caribou are still anticipated to be negligible."(85) This conclusion is unsupportable because Appendix E ignores: (85) Draft SEIS, App. E, at E-13 (emphasis added). -Russell and Gunn's (2019) "predicted decline of 17 and 18 percent, for a starting population of 218,000 and 100,000, respectively under Alternative B"(86) (less for Alternatives C and D, though likely still significant). The draft SEIS states that Russell and Gunn's impacts model (2019) modified for different scenarios in Russell et al. (2021) "provide[s] the best available quantification of the magnitude of potential demographic impacts on the Porcupine Caribou Herd that could occur as a result of development."(87) (86) Draft SEIS at 3-223. (87) Id. at 3-222. -Among migratory tundra caribou herds, the Porcupine Caribou Herd has exhibited the lowest rate of increase, making it vulnerable to even small changes in calf and cow mortality. Walsh et al. (2005) estimate that a 2.6% decline in adult female mortality or a 4.6% decline in calf mortality would be enough to prevent the herd from increasing in size. Griffith et al. (2002) concludes that a mean displacement because of development of 27 km would be "sufficient to reach the threshold of 4.6% mean reduction in calf survival...This latter level of displacement could occur well before full development of the [program area]."(88) (88) Griffith, D. B., D. C. Douglas, N. E. Walsh, D. D. Young, T. R. McCabe, D. E. Russell, R. G. White, R. D. Cameron, and K. R. Whitten (2002). Chapter 3: "The Porcupine Caribou Herd," pp. 8-37. In: D. C. Douglas, P. E. Reynolds, and E. B. Rhode, editors. Arctic Refuge Coastal Plain Terrestrial Wildlife Research Summaries. US Geological Survey, Biological Resources Division, Biological Science Report USGS/BRD/BSR-2002-0001. p. 32. -There is a strong link between Porcupine Caribou Herd calf survival and free movement of females in the project area. When females are not in the program area for calving, calf survival is 19% lower.(89) (89) Ibid. p. 28. -Research published recently has resulted in a decline in the disturbance threshold for traffic volume from 15 vehicles /hour to 5 vehicles/hour. (90) (90) Severson et al. (2023). Effects of vehicle traffic on space use and road crossings of caribou in the Arctic. https://doi.org/10.1002/eap.2923 -The non-zero possibility that the Porcupine Caribou Herd's large aggregation of over 100,000 individuals may have a high level of difficulty crossing roads and pipelines.(91) (91) "Data are lacking on how well groups of over 100,000 caribou are able to navigate through oil field infrastructure (Russell and Gunn 2019), thus it is possible that these large groups will have a high level of difficulty crossing roads and pipelines. It is likely that these large post-calving aggregations will occur in the western portion of the project area with higher hydrocarbon potential more frequently as a result future warming conditions (Severson et al. 2019)." p. 3-211 -Climate change's likely adverse impacts on the caribou population regardless of Coastal Plain development. Additionally, despite a comprehensive and very valuable assessment of the implications of Severson et al. (2021) in the draft SEIS' Chapter 3,(92) Appendix E does not mention that work and its implications for a warmer climate changing Porcupine Caribou Herd exposure to development (see footnote).(93) (92) 92Draft SEIS at 3-197, 3-202, 3-209, 3-211, 3-214, 3-215. (93) The implications of Severson et al.'s (2021) findings on energy/protein modelling would include:-Higher frequency of caribou use of western portions of the program area during calving and post-calving seasons.-An increase in exposure to development most likely to occur in the High and Moderate Hydrocarbon potential zones.-Fewer years when optimal calving sites are out of the development zone and thus resulting in higher calf mortality (based on Griffith et al.'s (2002) calf survival modelling.-Increased severity and length of insect season. Johnson et al. (2021) found high insect years were followed by lower caribou birth rates.-Rapidly maturing forage in warmer summers negatively impacts pregnancy rates and cow survival (Russell et al. in prep).	Reviewed and edited ANILCA 810 based on review of final caribou analysis in the SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	21	Though recognized and quoted in Appendix E, Traditional Knowledge is not reflected in Appendix E's conclusions. The agencies did not develop their own model to estimate caribou abundance with Coastal Plain development either in the FEIS or the draft SEIS, and Appendix E contains no assessment of caribou abundance under Alternatives C and D. As noted above, Russell and Gunn's model provides the "best available" quantification of the magnitude of potential demographic impacts. The model clearly shows significant impacts on caribou abundance as a result of development. Appendix E implies that Russell and Gunn (2019) overestimate impacts to caribou abundance. The Tribes dispute that, arguing that Russell and Gunn's model is realistic and likely underestimates impacts for the following reasons: - Russell and Gunn did not model aircraft disturbance of caribou. -Studies show that in the presence of hunting, the Zone of Influence (ZOI) for infrastructure can be five times wider, as supported by Plante et al. (2016)(94) and Johnson and Russell (2014).(95) Even if doubled from the current ZOI (3.11 miles) in Appendix E, a ZOI of 6.22 miles would cover 106% of the program area. Thus, the Russell and Gunn approach of including the entire program area disturbing caribou is reasonable. (94) Plante, S., C. Dussault, J. H. Richard, and S. D. Côté (2018). Human disturbance effects and cumulative habitat loss in endangered migratory caribou. Biological Conservation 224, 129-143. (95) Johnson, C. J., and D. E. Russell (2014). Long-term distribution responses of a migratory caribou herd to human disturbance. Biological Conservation 177, 52-63. -ZOI may not be the best way of assessing landscape disturbance as it ignores a possible barrier effect. Caribou have been documented to hesitate, deflect from parallel roads potentially increasing the upstream width of the ZOI, then cross rapidly and move away from roads (see Figure 2). -Displacement and any resulting additional predation is not included in Russell and Gunn's model. Displacement is another behavioral response to human activity that generally results in lower food quality and, in the case of the Porcupine Caribou Herd, an increase in predation, e.g., from bears, wolves, and eagles if caribou move from the Coastal Plain to the Brooks Range foothills for insect relief.	Reviewed and edited ANILCA 810 based on review of final caribou analysis in the SEIS.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	22	Science has no idea how large summer aggregations (>100,000) would respond to oil infrastructure. - Russell and Gunn modelled use of the program area based on historic caribou collar data. New work by Severson et al. (2021)(96) on changing habitat due to climate change project that caribou would make more frequent use of the program area, including increased calving and post-calving to the west in zones of High and Moderate oil potential. This would result in increased exposure of caribou to development. Only Alternative D, not modelled in Russell and Gunn, incorporates Severson's findings. (96) 96 Severson, J. P., H. E. Johnson, S. M. Arthur, W. B. Leacock, and M. J. Sutor (2021). Spring phenology drives range shifts in a migratory Arctic ungulate with key implications for the future. Global Change Biology 00, 1-18. Figure 2. Porcupine Caribou Herd Movements Crossing the Dempster Highway NW to SE See page 19 of comment letter for Figure 2. Figure 2. An example of the barrier effect on the Porcupine Caribou Herd near the Dempster Highway. The upstream side of the highway has a much greater ZOI.	The Severson data was incorporated into the ANILCA 810 analysis.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	23	Appendix E mistakenly dismisses Griffith et al.'s (2002) analysis of the combined effect of nutrient quality and predation on functional response between early calf survival and displacement distance, stating that the full development scenario used by Griffith et al. (2002) would not occur. In fact, Griffith et al. (2002) incorporates five scenarios only one of which was full development and presents a linear functional response that the greater the distance the calving Porcupine Caribou Herd cows are displaced to the east, the higher the calf mortality. As a result, Appendix E does not mention Griffith et al.'s (2002) key finding, i.e., that displacement more than 27 km would result in a 4.6% decline in calf mortality, enough to halt the herd from increasing.	Reviewed and edited ANILCA 810 based on review of final caribou analysis in the SEIS.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	32	ANILCA Section 810 and Gwich'in Knowledge and Practices. It is baffling to the Tribes that the agencies conducted an ANILCA Section 810 "Subsistence Evaluation" and then did not include the knowledge of those living the subsistence way of life in the evaluation. When the Tribes read the draft SEIS's Appendix E, they recognized that the BLM and USFWS came to the wrong conclusions because the agencies were using limited data with no Indigenous knowledge. To assist the agencies in making an informed decision, the Tribes wish to share some key quotes from Elders and Cultural Experts.	Appendix D of the SEIS provides traditional knowledge of indigenous and local residents as it pertains to the Arctic Refuge. The conclusions of the SEIS and the ANILCA 810 are based on traditional knowledge in addition to the conclusions of the biological resources sections.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	33	Miscellaneous Appendix E comment. Sadly, Table E-2 is an insult to any credible reviewer. Not only is the basis for the impacts (0, 1, 2, or 3) unsubstantiated but the impact thresholds are not defined. Appendix E sits in isolation to the well-researched background materials in Chapter 3 of the draft SEIS.	Revised tables include explanation and reference for how determinations are made.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	28	Page E-5, E.2.2.1, Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Uses and Needs, Abundance and Availability, Fish: "Dolly Varden is the primary fish resource harvested within the rivers and streams of the program area." Comment: The sentence above probably just needs clarification. For which village or villages is Dolly Varden the primary harvested fish resource? We believe that Arctic cisco is the primary fish resource for Nuiqsut, as supported by the citation below. - Bacon, Joshua J., Taqulik R. Hepa, Harry K. Brower Jr, Michael Pederson, Tommy P. Olemaun, John C. George, and Bernie G. Corrigan. "Estimates of subsistence harvest for villages on the North Slope of Alaska, 1994-2003." Barrow, Alaska: North Slope Borough Department of Wildlife Management (2009).	Revised tables include explanation and reference for how determinations are made.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	17	The Agencies' ANILCA Section 810 Analysis and Findings Must Substantially Revised. We sharply criticized BLM's prior finding that no Gwich'in communities would be substantially impacted by the 2020 Leasing Program. Unfortunately, the analysis in the draft SEIS appears to be largely the same and the agencies commit the same errors by limiting their "may significantly restrict" finding under ANILCA Section 810 solely to Kaktovik.(62) (62) DSEIS App. E at E-24. To be clear, we do not question the finding of impacts to Kaktovik. Under ANILCA Section 810, agencies must decide whether to take a proposed action by evaluating "the effect of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, and other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes."(63) As part of this determination, agencies must consider cumulative impacts(64) and analyze: (63) ANILCA § 810(a), 16 U.S.C. § 3120(a); Hanlon v. Barton, 470 F. Supp. 1446, 1448 (D. Alaska 1988). (64) Sierra Club v. Penfold, 664 F. Supp 1299, 1310 (D. Alaska 1897), aff'd, Sierra Club v. Penfold, 857 F.2d 1307 (9th Cir. 1988). 1) Reductions in the abundance of subsistence resources caused by a decline in the population or amount of harvestable resources; 2) Reductions in the availability of resources used for subsistence purposes caused by alteration of their normal locations, migration, or distribution patterns; and; 3) Limitations on access to subsistence resources, including from increased competition for the resources.(65) (65) State Director, Bureau of Land Mgmt., Instruction Memorandum No. AK-2011-008: Instructions and Policy for Compliance with Section 810 the Alaska National Interest Lands Conservation Act (ANILCA) (Jan. 14, 2010) [hereinafter Instruction Memorandum]. If an activity will not "significantly restrict subsistence uses,"(66) a Finding of No Significant Restriction is issued and the requirements of ANILCA Section 810 are satisfied. However, if the action would "significantly restrict subsistence uses," additional analysis is required.(67) Under ANILCA Section 810, actions which would significantly restrict subsistence uses may only be undertaken if the agency finds that such actions are necessary, involve the minimal amount of public lands necessary, and if the adverse effects to subsistence are minimized.(68) (66) 16 U.S.C. § 3120(a). (67) Kunaknana v. Clark, 742 F.2d 1145, 1151 (9th Cit. 1984); Hanlon, 470 F. Supp. at 1448. (68) 16 U.S.C. § 3120(a). Oil and gas leasing on the Coastal Plain will significantly restrict subsistence use and resources for the Gwich'in and the agencies' findings in the draft SEIS are incorrect. Accordingly, BLM and FWS must redo their ANILCA Section 810 analysis.	The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	18	The Agencies Must Consider Impacts to All Gwich'in Communities. In revising its analysis, the agencies must consider all affected communities that rely on Coastal Plain resources, including caribou and birds. For the Gwich'in, this includes all of our communities. The Gwich'in of Alaska and Canada are culturally and spiritually connected to the Porcupine Caribou Herd and would be substantially impacted by reduced abundance and availability of the herd as a result of oil and gas leasing. Despite this, BLM and FWS arbitrarily limited its ANILCA Section 810 analysis to four communities(69) and failed to even consider whether oil and gas leasing on the Coastal Plain would significantly restrict subsistence uses in all Gwich'in communities. This is in error. This narrow approach is also inconsistent with the agencies' findings elsewhere in the draft SEIS regarding the impacts to resources, subsistence, and sociocultural systems. Specifically, the agencies found that predicted population declines could have "substantial impacts on communities that rely on the Porcupine Caribou Herd"(70) and that Kaktovik, Nuiqsut, Arctic Village, Venetie, and other Alaska communities that rely on the Porcupine Caribou Herd and Central Arctic Herd, "could experience indirect adverse impacts associated with a decline in the abundance or availability of caribou."(71) Given this finding, as well as our clear and substantial reliance on the Porcupine Caribou Herd for cultural and spiritual purposes, we do not understand why the agencies' ANILCA Section 810 analysis is limited to only two Gwich'in communities. (69) DSEIS App. E. (70) DSEIS at 3-329. (71) DSEIS at 3-370.	The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects. In addition, future EISs and Section 810 analyses for individual projects may include additional communities (e.g., the 22 caribou study communities), as these analyses will have specific development projects to analyze.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Demientieff	Bernadette	Gwich'in Steering Committee	80355	19	We are also confused by the public hearing process. While the draft SEIS expressly limits the agencies' ANILCA Section 810 "may significantly restrict" finding to Kaktovik, BLM's planning website and announcement of hearings indicated that there will be ANILCA Section 810 hearings in the communities of Arctic Village, Venetie, and Fort Yukon, in addition to Kaktovik. BLM explained that the agency has not made a "may significantly restrict" finding for the communities of Arctic Village, Venetie, and Fort Yukon but held ANILCA Section 810 hearings in those communities to gather information and avoid future hearings should the agencies find in the final SEIS that subsistence uses and resources may be significantly restricted for additional communities. This process is confusing and inconsistent with the information currently before the agencies regarding the Gwich'in's deep cultural ties and significant reliance on the Porcupine Caribou Herd. In the final SEIS, BLM and FWS must fully consider all of the information before it, including our Indigenous knowledge, and look more broadly at our impacted communities.	The agencies decided to hold ANILCA 810 hearings in some communities that do not have a positive "may significantly restrict" finding because the preliminary 810 evaluation could potentially be revised at the Final SEIS stage to identify additional positive communities based on public comments and ANILCA 810 subsistence hearing testimony received during the Draft SEIS public comment period. By holding additional subsistence hearings earlier, we would not have to later hold hearings in any communities for which the final 810 evaluation may make additional positive findings. Additionally, those communities may appreciate our added effort to reach out to them during an earlier stage. We also determined that holding 810 hearings in these additional communities would require minimal additional effort since were already planning to hold Draft SEIS public meetings there to begin with and because those same meeting sessions could also serve as the ANILCA 810 subsistence hearings.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	20	The Agencies Must Consider the Subsistence Use of Waterfowl. The agencies' Section 810 analysis is also too narrow in that it considers the impacts to fish, marine mammals, and caribou, leaving out any analysis of waterfowl. As the agencies recognize elsewhere in the draft SEIS, subsistence impacts will not be limited to fish, select marine mammals, and caribou. For example, waterfowl are one of the subsistence resources "most likely" to be impacted by oil and gas leasing on the Coastal Plain.(72) Reduced availability and abundance of waterfowl would impact many communities beyond the program area in addition to residents of Arctic Village, and Venetie.(73) There is no meaningful explanation given for excluding waterfowl from the Section 810 analysis. Impacts to such important subsistence foods must be addressed in the final SEIS because traditional Indigenous knowledge establishes that the Coastal Plain is vital to their survival. (72) DSEIS at 3-356. (73) DSEIS at ES-7.	Incorporated analysis of impacts to waterfowl into the ANILCA 810 analysis.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	21	BLM Must Analyze All Impacts of Oil and Gas Activities. BLM and FWS again improperly limit the scope of its ANILCA Section 810 analysis by considering only post-lease activities and diminishing impacts from future oil and gas projects.(74) This approach fails to account for significant subsistence impacts from preleasing activities such as seismic exploration that, if allowed, could destroy or alter large swaths of vegetation and habitat. It is not possible to meaningfully address subsistence impacts without considering this damage. In addition, deferring analysis of post-leasing activities is inappropriate. The agencies must consider impacts to subsistence use that could occur from all stages of the program now and follow a precautionary approach regarding future impacts rather than circumventing analysis. (74) DSEIS App. E at E-2.	The SEIS and 810 analysis address potential impacts of seismic activities.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	22	The Agencies Alternatives and Mitigation Measures are Insufficient to Reduce Subsistence Impacts to the Gwich'in. The agencies present three alternatives with various lease stipulations and required operating procedures (ROPs) aimed at reducing and minimizing impacts, none of which are sufficient. In their Section 810 analysis, the agencies rely on these alternatives and stipulations and ROPs to support their findings that there would not be significant impacts to Gwich'in subsistence use and access. As explained in the letter submitted by Trustees for Alaska, none of these are sufficient to protect caribou and the Gwich'in; the agencies' findings are not supported.	The analysis acknowledges the limitations of mitigation measures to eliminate impacts to subsistence. The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	23	The Agencies Must Fully Analyze Impacts to the Porcupine Caribou Herd and Gwich'in Subsistence Users. The agencies failure to reach a "may significantly restrict" determination for Arctic Village, Venetie, and all other Gwich'in communities who rely on the Porcupine Caribou Herd is in error. The Porcupine Caribou Herd uses the Arctic Refuge throughout the year, with the Coastal Plain providing essential calving, nursery, insect relief, and other summer habitat. The Gwich'in are culturally and spiritually connected to the Porcupine Caribou Herd and stand to be substantially impacted by reduced abundance and availability of the herd as a result of any oil and gas activities. Given the importance of the Porcupine Caribou Herd to the Gwich'in people, the agencies' Section 810 analysis must be revised to incorporate best available science, traditional Indigenous Knowledge, and protect the human rights of the Gwich'in.	The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Demientieff	Bernadette	Gwich'in Steering Committee	80355	24	Any Leasing Program will reduce the abundance of the Porcupine Caribou Herd through increased calf mortality, decreased pregnancy, diversion from nutrient rich habitat, and increased vehicle collisions. Industrial oil and gas activities will also disturb and alter traditional migratory paths - thereby reducing the herd's availability to subsistence hunters. Under BLM's Section 810 guidance, reductions in availability are caused by factors such as alterations to a resources' location, migration, or distribution pattern.(75) The ANILCA Section 810 analysis fails to recognize these impacts. The conclusion that direct and indirect subsistence impacts to the Porcupine Caribou Herd would not be significant for any alternative is unfounded. Our traditional Indigenous knowledge indicates that any disturbance to the Porcupine Caribou Herd's calving and nursing grounds will increase calf mortality and seriously impact the herd.(76) The agencies conclude elsewhere in the draft SEIS that "changes in caribou behavior will likely occur as a consequence of disturbance and could result in energetic costs that could have demographic impacts,"(77) that calving displacement by roads is likely to persist despite repeated exposure,(78) and that, in the cumulative case, "climate change is expected to change the survival rates and distribution of terrestrial mammals (including caribou)."(79) It is unclear why the Section 810 analysis fails to incorporate, and is inconsistent with, the analysis in the draft SEIS regarding impacts to caribou and our traditional Indigenous Knowledge. (75) Instruction Memorandum at 5. (76) DSEIS App. E at E-13 (explaining traditional Gwich'in knowledge indicates "any development in the [Coastal Plain] would have devastating effects on the population of the [Porcupine Caribou Herd]"). (77) DSEIS at 3-221. (78) DSEIS at 3-221. (79) DSEIS at 3-307.	The ANILCA 810 addresses potential disturbance and alteration of the Porcupine Caribou Herd movement, thus resulting in reduced availability to Kaktovik subsistence hunters (e.g., "Thus, it is likely that some deflections or delays in caribou movement would occur as a result of development, potentially reducing harvest success for Kaktovik hunters, particularly along the coast" and ". It is likely that the community of Kaktovik would experience impacts to resource availability, resulting in reduced harvest success for individual hunters"). Reviewed and edited ANILCA 810 based on review of final caribou analysis in the SEIS.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	25	The agencies' conclusions regarding foraging and movement patterns are also in error. First, the agencies conclude that none of the action alternatives would reduce forage enough to affect caribou abundance or availability.(80) But this ignores that the Porcupine Caribou Herd calves on the Coastal Plain because of the quality and quantity of food available to the mothers and calves.(81) Second, the draft SEIS concludes that caribou movement would remain "relatively undisturbed" under development alternatives.(82) This conclusion is based on an incomplete analysis because the draft SEIS focuses on the impacts of direct habitat loss under each alternative, ignoring the harmful indirect effects of oil and gas development.(83) Any change in the migration patterns of the Porcupine Caribou Herd will have a significant impact on the subsistence activities of the Gwich'in. The Gwich'in are heavily dependent on the Porcupine Caribou Herd - so much so that their communities trace the historic migratory route of the herd through the Gwich'in traditional homelands. The agencies must evaluate the potential long-term or permanent impacts to the Porcupine Caribou Herd to the Gwich'in by relying on best available science and traditional Indigenous Knowledge, not unsupported conclusions. These findings must be amended in the final SEIS because changes in the foraging and migration patterns of the Porcupine Caribou Herd will have a significant impact on subsistence. (80) DSEIS App. E at E-8, E-15. (81) DSEIS at 3-195, 3-209. (82) DSEIS App. E at E-15. (83) See e.g. DSEIS at E-8. ("Caribou abundance or availability and the subsistence use thereof would not likely be affected as a result of direct habitat loss.")	The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects. Reviewed Section 810 analysis to ensure consistency with findings of the SEIS.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	26	The Agencies Must Revise Their Cumulative Impacts Analysis in the ANILCA Section 810 Analysis. Under ANILCA Section 810, "the purpose of the cumulative effects analysis is to determine the effects of the proposed action and alternatives together with other past, present, and reasonably foreseeable future actions."(84) A "may significantly restrict" finding in the cumulative case triggers the notice, hearing, and determination requirements of ANILCA Section 810(a)."(85) BLM and FWS's conclusion that Kaktovik is the only community that will experience impacts to subsistence in the cumulative case is contrary to the evidence before the agencies, including the traditional Indigenous knowledge the Gwich'in have shared throughout this process. This finding disregards the broad range of cumulative impacts facing the Gwich'in and should be revised in the final SEIS. This finding also largely disregards the impact of climate change which is reshaping the Arctic and needs to be considered in light of changing migration patterns, altered changes in food sources and predator concentration, and other effects to subsistence. The agencies need to substantially revise their Section 810 analysis to account for the full impacts of a leasing program in light of the broad range of cumulative impacts facing the Gwich'in. (84) Instruction Memorandum at 7. (85) Instruction Memorandum at 7.	Reviewed Section 810 analysis to ensure that the cumulative effects of climate change are adequately addressed. The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Demientieff	Bernadette	Gwich'in Steering Committee	80355	27	As discussed above, the agencies arbitrarily limited the scope of their Section 810 analysis to four communities,(86) ignoring the cumulative impacts that will occur in other Gwich'in communities. The draft SEIS indicates that a decline in abundance of the Porcupine Caribou Herd in the cumulative case would decrease harvest success and amounts for residents of Kaktovik, Arctic Village, and Venetie.(87) However, the agencies go on to state that "other Gwich'in communities who receive Porcupine Caribou Herd caribou through sharing networks could also experience indirect impacts through a decline in sharing."(88) This conclusion makes the inaccurate suggestion that other Gwich'in communities only utilize the Porcupine Caribou Herd through sharing networks. But, as the agencies recognize, subsistence hunters in many Gwich'in communities rely directly on the Porcupine Caribou Herd.(89) Regardless, impacts to food sharing must also be considered under Section 810. The agencies must revise their cumulative analysis to account for the reality that oil and gas leasing on the Coastal Plain risks significant subsistence restrictions for all Gwich'in communities. (86) DSEIS App. E. at E-19. (87) DSEIS App. E at E-21. (88) DSEIS App. E at E-21. (89) DSEIS at 3-351 (stating generally that the Gwich'in "rely heavily on the Porcupine Caribou Herd"); id. at 3-302 (explaining use of caribou is "high" in the Gwich'in communities of Circle and Eagle as well as Venetie); id. at 3-357 (explaining changes in caribou migration and distribution could cause hunters in Fort Yukon, and Gwich'in communities in Canada to "spend[] more time and effort hunting for caribou").	Reviewed language regarding impacts to other Gwich'in communities to clarify that these communities harvest Porcupine caribou. Future EISs and Section 810 analyses for individual projects may include additional communities (e.g., the 22 caribou study communities), as these analyses will have specific development projects to analyze.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	30	Additionally, many of the agencies' conclusions in the cumulative case must also be revised. For example, the conclusion that future development will not impact caribou abundance conflicts with the agencies' findings elsewhere in the draft SEIS(92) and our traditional Indigenous Knowledge. In the cumulative analysis for subsistence resources the agencies indicate "availability of certain subsistence resources, such as caribou, sheep, moose, small land mammals, fish, waterfowl, or vegetation, would likely be reduced."(93) This is not carried into the ANILCA Section 810 analysis for some reason. The agencies' conclusion is also in direct conflict with available western science.(94) Studies conclude that a future shift in calving to the east would lead to declines in calf survival and that "[i]f calving shifts west in the future, as predicted, the impact of displacement from infrastructure in the calving range could be even larger."(95) In addition, the conclusion that subsistence resource abundance would not be impacted because "there is a low likelihood of industrial roads in the program area becoming open to public use"(96) is directly contrary to the history of industrial access roads in Alaska such as the Dalton Highway. The suggestion that impacts to subsistence resources and users in the cumulative case will be reduced by mitigation measures contained in the draft SEIS must also be revised.(97) As addressed in comments submitted by Trustees for Alaska, many of the mitigation measures relied upon lack the effectiveness and enforceability necessary to adequately protect Coastal Plain resources including subsistence resources. (92) DSEIS at E-21 to E-22. (93) DSEIS at 3-330. (94) DSEIS at 3-222 (discussing findings of Griffith et al. (2002) and Russell and Gunn (2019)). (95) DSEIS at 3-222. (96) DSEIS App. E at E-22. (97) DSEIS App. E at E-20 to E-21.	Reviewed Section 810 analysis to ensure consistency with findings of the SEIS. In terms of roads becoming open to public use, the Dalton Highway is not directly comparable to industrial roads connecting oil and gas developments. While the Dalton Highway is open to public use, roads connecting oil developments (e.g., Alpine, Kuparuk) remain closed to the public and open to local residents with security restrictions. Regarding mitigation measures, the analysis acknowledges the limitations of mitigation measures to eliminate all impacts.
Von Seggern	Dan	Washington State Attorney General's Office	80273	7	SC-GHG's associated with the Lease Program were determined using the IWG's 2021 Interim Estimates.(82) The 2023 DSEIS presents estimates for each alternative reduced to net present value, generated using three different annual discount rates and a range of simulations.(83) Commensurate with being the alternative with the highest GHG emissions, alternative B would have the highest social costs associated with those emissions. Depending on the discount rate used, costs of the GHGs produced (expressed in 2020 dollars) range from \$2.331 billion to \$15.121 billion. Even alternative D, which is predicted to generate the lowest total GHG emissions, would incur a social cost of \$1.00 billion to \$6.194 billion.(84) (82) IWG 2021. (83) 2023 DSEIS App. B-R at F-4. (84) The 95th percentile values generated in the simulations used produced even higher values: \$29.983 billion for alternative B and \$12.368 billion for alternative D. These cost predictions are likely to be underestimates. The IWG generated its Interim Estimates of the SC-GHG's using a consumption discount rate of 3%, and now recognizes that based on recent research, a lower discount rate is likely correct. (85) This would increase the net present value of GHG emissions. Moreover, the Interim Estimates do not include cost estimates for some key impacts of climate change, including damages caused by more frequent and intense wildfires(86) and damage to culturally and historically significant resources(87) (e.g. the Statue of Liberty, or the cultural value of tribal "First Foods")." (85) IWG 2021 at 19-21. (86) See Peter Howard, Flammable Planet: Wildfires and the Social Cost of Carbon (2014), https://costofcarbon.org/files/Flammable Planet Wildfires and Social Cost of Carbon.pdf . (87) See National Academy of Sciences, Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide (2017), at 152. Accurate presentation of these projected costs is critical to understanding the true impacts of the Lease Program, and the unacceptable costs to society of oil and gas production in the Coastal Plan.	Appendix G, Section G.2.1, Social Costs of GHG Emissions has been updated for the Final SEIS. In the current analysis, the BLM applies the EPA Workbook, which uses the currently best available estimates of the SC-GHG for use in DOI decision-making and analysis as cited in the EPA's Final Rule of March 8, 2024, Fed. Reg 16820, 17018-20.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	178	Appendix J. Vegetation and Wetlands, Birds, Terrestrial Mammals, and Marine Mammals When displayed graphically, Appendix J offers a useful acreage breakdown within the different Lease Stipulation categories among the three action alternatives. Using Severson's et al (2021) projections,(327) Tables J-24 and J-25 show how the current (2012-2018) acreage breakdowns likely would change by 2050-2059. These comparisons offer insights into how well the action alternatives incorporate climate change. (327) Severson, J. P., H. E. Johnson, S. M. Arthur, W. B. Leacock, and M. J. Sutor. (2021). Spring phenology drives range shifts in a migratory Arctic ungulate with key implications for the future. Global Change Biology 00, 1-18. Severson et al.'s (2021) projections represent environmental conditions in the range of the Porcupine Caribou Herd only 27-36 years from now, well within any development horizon. Figure 5 and Figure 6 show the changes in acreage of primary calving and post-calving habitats, respectively, for Alternatives B and D. The acreage changes were categorized into four categories from least to most protective of caribou: 1) Standard Terms and Conditions, 2) Controlled Surface Use/Timing restrictions, 3) No Surface Occupancy, and 4) No Lease Sale. Primary calving acreage in the least protective category (Standard Terms and Conditions) would increase under Alternative B while acreage in the most protective category would increase under Alternative D. There would be an additional 39,800 and 71,400 Standard Terms and Conditions acres of in the High and Medium Hydrocarbon potential zones, respectively, under Alternative B, indicative of the projected western shift in primary calving habitat. See Page 84 of comment letter for figure that shows change in ares of primary calving habitat from current to 2050-59 for Alternatives B and D. Severson's work predicts similar western shifts in primary post-calving habitat by 2050-2059. Post-calving is the period when large aggregations form due to insect harassment. Aggregations are constantly moving and in energetic deficits as they seek relief in windier regions either on the coast or in the foothills. Coastal habitats offer more nutrient rich forage. Figure 6 indicates that a similar acreage pattern emerges for post-calving compared to calving, with an additional 42,800 Standard Terms and Conditions acres (total) would fall within High and Medium Hydrocarbon potential zones by 2050-2059. See page 85 of comment letter for figure that shows post calving acres between alternative B and D. The Tribes contend that even though Alternative B would cause significant declines in the Porcupine Caribou Herd today, based on these figures, even more severe herd abundance impacts could be expected in the future.	We agree that Severson et al. (2021) predicts higher use of the Project Area for calving and postcalving in the future and these areas have less stringent protections under Alternative B than D as shown in Appendix K (referenced in Chapter 3). This point is referenced more explicitly in the text of Chapter 3.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Miller	Pamela A	Arctic Audubon Society	80339	11	The DSEIS includes various cross-walked tables of categories of bird species and land cover class. For Table J-13: Categorical habitat-use rankings for bird species occurring regularly on the Arctic Refuge Coastal Plain pp. J-43-J-48) greater explanation of how the habitat use rankings were determined by Marcot et al (2015) needs to be included. For Table J-14: Bird Species for which moist tundra habitats are ranked as high or medium value during the breeding season and would be expected to experience greater impacts from development on the Arctic Coastal Plain (pp. J-49 to J-50), again greater explanation of the method and results in necessary for it to be meaningful. We disagree with exclusion of riverine/floodplain areas in this Table (see footnote a "species known to use moist tundra habitats in riverine/floodplain areas are omitted because development in riverine habitats is restricted by lease stipulation") as these provide very important bird nesting habitats; furthermore, lease stipulations in all alternatives do not prohibit all activities and infrastructure in riverine/ floodplain areas. Table J-15, Acreages of habitat types available in all areas open to leasing under Alternative B and Estimated to occur in a hypothetical development area (a)... While this footnote says "see text" this is a meaningless reference. Perhaps the reference in Table J-15 footnote (a) could be found in Appendix B, Updated Reasonably Foreseeable Development Scenario for oil and gas resources? This shows Fig. B-1. Conceptual layout of a stand-Alone oil development facility (p. B-15) it is unclear if this equates to Table B-4 Estimated Surface Disturbance by Facility (p. B-26). Without a map overlay depicting the assumptions of Table B-5 Hypothetical Projected Facilities and Estimated Surface Disturbance by Alternative ("generally hypothetical estimates") where is the ground-truthing of the assumptions? There is ample data in prior EAs and EISs associated with the National Petroleum Reserve-Alaska. Appendix B also states, "Another assumption is that economically feasible oil accumulations would be discovered in all potential areas and that multiple anchor fields (each containing at least 400 million barrels of producible reserves) would be discovered. Further, the assumption is that several different operators would independently explore and develop new fields in the Coastal Plain. See Figure B-1, Conceptual Layout of a Stand-Alone Oil Development Facility, for a conceptual rendering of a hypothetical anchor field and associated facilities. (p. B-14)" Fig B-1 "conceptual layout of a stand-Alone oil development facility" is like a 6-legged bug with has 6 small drilling sites + 1 CPF and STP and road/pipeline towards the coast. But it no road to a barge landing location, no port or causeway at Camden Bay, also fails to show bridge or buried pipelines across the Canning River to connect up with the existing oil fields at Pt Thomson and then TAPS. Given the assumption of multiple "anchor fields" and the track record for development in the western Arctic from the Alpine oil field going West into NPR-A with roads and pipelines to connected fields, it is crucial that a more realistic scenario be mapped, otherwise the results are mere fiction. For Table J-16, Estimated Numbers of Waterbirds and Larids in all areas open to leasing and in a Hypothetical Development Area under Alt. B by hydrocarbon potential. Again the crux of the matter is the adequacy of any analysis based on "Hypothetical Development Area" for Alt. B which is estimated as 31,600 acres - with no documentation of how that figure was calculated. Tables J-16 to J-20 all have the same flaws and therefore are misleading presentations of potential impact.	Table K-13: The existing footnote and accompanying text in Chapter 3 has been updated to indicate (1) that the matrices of bird-habitat relationships depicting categorical levels of use (high, moderate, and low) were developed by Marcot et al. (2015) following existing procedures for wildlife-habitat relationships (Johnson and O-Neil 2001, Morrison et al. 2006). Additionally (2), it will be noted that the habitat-use rankings, per Marcot et al. (2015), "were developed from a combination of published literature, field data, and expert knowledge [of the authors]." In this case, the NPS and USGS co-authors in Marcot et al. (2015) have conducted extensive landscape-scale surveys for breeding birds in northwest Alaska. Table K-14: A footnote has been added and the text in Chapter 3 has been updated to indicate that the rankings of high and moderate value for each species known to breed on the ARCP in moist tundra habitats come directly from Table J-13. High- and moderate-value habitats are used because they are more consistently occupied by the species assessed. Moist tundra habitats are expected to have greater impacts because current oil development projects on the North Slope of Alaska preferentially site infrastructure in better drained habitats to minimize impacts to waterbirds and shorebirds that rely heavily on wet and aquatic habitats, and because infrastructure is easier to construct in better drained areas. Lastly, the table will be updated to include species that are known to use moist tundra habitats in riverine/floodplain areas. Table K-15: The footnote has been revised to remove the cross reference to the SEIS text. The footnote has been revised to: "BLM does not know what areas of the program area may be leased or where any future developments may occur, but to assess the potential magnitude of effects to bird habitats, this EIS assumes the same proportions of habitats occurring in all areas open to leasing will also occur within the maximum 31,600 acres that could be affected by a hypothetical development. However, based on recent North Slope developments, infrastructure in the program area would be preferentially placed in better drained moist tundra habitats." Table K-16: Footnotes for Tables K-16 through K-20 has been updated to note use of the hypothetical development footprint and the total allowable development area by alternative to determine the area of indirect impacts (200 meters from the direct footprint). As each alternative has a different maximum allowable total footprint, the indirect impact acreage varies by alternative (Alternative B is 31,600 acres; Alternative C is 23,131 acres; and Alternative D is 16,432 acres). The indirect impact area calculation is explained in SEIS Section 3.3.3, Birds - Alternative B/Alternative C/Alternative D. Appendix C, Updated RFD Scenario for Oil and Gas: The hypothetical development scenario is hypothetical, and it is intended to provide a basis for like-for-like analyses of the action alternatives. The Draft SEIS notes that pipelines, ice roads and ice pads, gravel roads, etc. would be required to support development, should a project move past the exploration phase. However, it is not possible to determine where roads, bridges, and pipelines would be located as any future development is only speculative.
Boldrick	Lauren	EPA Region 10	80058	21	EPA appreciates that the DSEIS provides emissions of CO2, CH4 and N2O for each alternative over time in Appendix Q. We note that emissions from Alternative B extend from 2032 to 2091, Alternative C extend from 2032 to 2085 and Alternative D extend from 2032 to 2073. The February 2021 TSD provides SC-GHG estimates through emissions year 2050. EPA recommends the FSEIS clarify the following: - Describe how the SC-GHG estimates beyond 2050 were developed in the NEPA analysis. -Clarify if the NEPA analysis used the Interagency Working Group methods, assumptions, and parameters identical to the 2020-2050 estimates. -Clarify if the NEPA analysis used an annual growth rate equal to the average annual growth in social cost estimates for the last five years of available estimates from the TSD (2046-2050) (as was done with Willow).	The Final SEIS has been revised and information included as appropriated.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Boldrick	Lauren	EPA Region 10	80058	22	Using emission estimates from Appendix Q, EPA was not able to replicate the SC-GHG table presented in Appendix F. EPA recommends adding individual tables of SC-GHG for each GHG from direct, indirect, substitute and foreign emissions and a description of how the totals presented in Appendix F are obtained for decision makers and the public to understand the SC-GHG calculations provided for each alternative. EPA notes that the DSEIS includes increases in foreign oil consumption that result from a drop in the price of oil but does not discuss the relationship between consumption of oil and price (e.g., lower oil prices may increase consumption). EPA recommends that the FSEIS include a discussion regarding potential impacts to domestic oil consumption rates as related to the price of oil and the corresponding assumptions provided in the analysis.	Table J-13: The existing footnote and accompanying text in Chapter 3 has been updated to indicate (1) that the matrices of bird-habitat relationships depicting categorical levels of use (high, moderate, and low) were developed by Marcot et al. (2015) following existing procedures for wildlife-habitat relationships (Johnson and O-Neil 2001, Morrison et al. 2006). Additionally (2), it will be noted that the habitat-use rankings, per Marcot et al. (2015), "were developed from a combination of published literature, field data, and expert knowledge [of the authors]." In this case, the NPS and USGS co-authors in Marcot et al. (2015) have conducted extensive landscape-scale surveys for breeding birds in northwest Alaska.
Boldrick	Lauren	EPA Region 10	80058	27	EPA recognizes that human health-based air quality standards such as the primary and secondary NAAQS and risk-based HAP thresholds may or may not be adequately protective of sensitive flora and wildlife within the refuge. In the DSEIS, typical HAP emissions from oil production are used for the analysis. Although metal particulates or other HAPs may be emitted at low rates, the sensitivity of flora in the refuge may be such that impacts from trace air pollutants may be of concern. In DSEIS Appendix Q, the discussion on page 31 indicates that the contribution of impacts from flaring to the cumulative HAP concentrations is small, in the range of 1% to 7% of the total maximums. The results in Tables 1-29 and 1-30 are exactly the same, without any small differences (e.g., from flare contributions). EPA recommends a review of impacts to confirm the impacts are correctly reported, and if so, add additional discussion on page 31 to explain and emphasize that the results are the same because flare impacts are negligible. This additional information is useful to understand how a project could impact human health but does not necessarily provide a disclosure of how air pollutants may impact sensitive vegetation and wildlife, which is crucial given the need to protect sensitive populations within ANWR.	Localized air quality impacts were assessed in the Draft SEIS by tiering to the AERMOD modeling conducted for the Willow project, which is representative of a fairly large oil and gas development on the North Slope. The modeled ambient air concentrations of criteria air pollutants were lower than the NAAQS thresholds. These thresholds provide public health protection via the Primary standards and provide protection to flora and fauna via the Secondary standards. Modeled localized cancer risk and hazard index due to the hazardous air pollutants were lower than relevant thresholds. Impacts to terrestrial and aquatic ecosystems were assessed in the regional modeling by comparing to critical loads of deposition. Modeled cumulative nitrogen deposition fluxes are below or within the range of critical loads for atmospheric deposition (levels of deposition below which no harmful effects to an ecosystem are expected).
Brisson	Brook	Trustees for Alaska	80131	539	Maximum modeled cumulative nitrogen deposition fluxes in both the High and Low Development Scenarios fall "within" the critical load range used by the agencies in the Program Area.(3) In the DSEIS, the agencies compare deposition impacts (fluxes) to critical load values in kilogram per hectare per year (kg/ha-yr), an atmospheric deposition threshold below which harmful effects to sensitive resources in an ecosystem do not occur. When nitrogen deposition fluxes exceed the critical load there is an increased risk of ecological harm. The agencies use a range of critical load values for nitrogen deposition of 1.0 - 3.0 kg/ha-yr, which BLM also used in the Willow Master Development Plan, citing critical loads determined for Alaska ecoregions by the National Park Service (NPS).(4) The agencies' modeling for the DSEIS shows maximum modeled impacts of 2.05 and 1.44 kg/ha-yr for High and Low Development Scenarios respectively. Without further clarification from the NPS, the agencies should proceed conservatively assuming that nitrogen deposition fluxes above 1.0 kg/ha-yr risk causing harmful ecosystem impacts. Mitigation measures aimed at further reducing NOx emissions from future development could help to prevent any such adverse ecosystem impacts in the Program Area. And since these modeled impacts "within" the Critical Load Range occur even under the Low Development Scenario-which is more restrictive than any of the Alternatives considered in the Coastal Plain DSEIS-it would seem that additional NOx mitigations are warranted. (3) DSEIS Appendix Q Tables 1-15 and 1-16 (4) BLM Willow Master Development Plan SEIS at 53	Table J-14: A footnote has been added and the text in Chapter 3 has been updated to indicate that the rankings of high and moderate value for each species known to breed on the ARCP in moist tundra habitats come directly from Table J-13. High- and moderate-value habitats are used because they are more consistently occupied by the species assessed. Moist tundra habitats are expected to have greater impacts because current oil development projects on the North Slope of Alaska preferentially site infrastructure in better drained habitats to minimize impacts to waterbirds and shorebirds that rely heavily on wet and aquatic habitats, and because infrastructure is easier to construct in better drained areas. Lastly, the table has been updated to include species that are known to use moist tundra habitats in riverine/floodplain areas. Additionally, mitigation measures such as NOx deposition mitigation will be evaluated and considered in future NEPA where the FLM are reviewing specific development projects.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	540	The agencies report visibility impacts in the DSEIS at Gates of the Arctic National Park (NP) based on comparisons to haze index thresholds-i.e., the maximum number of days that the modeled change in deciview (?dv) exceeds 0.5 and 1.0. In general, these haze index thresholds are used to assess the extent of the impact, whereby an impact greater than 0.5 ?dv (approximately a 5% change in light extinction) is considered to contribute to regional haze visibility impairment and an impact that exceeds 1.0 ?dv (approximately a 10% change in light extinction) is considered to cause visibility impairment. Modeled visibility impacts in the High Development Scenario result in three days (out of 365) where the haze index is greater than 0.5 ?dv in Gates of the Arctic NP.(5) Note that the agencies only assess visibility at Gates of the Arctic NP in the DSEIS so it is unknown if significant visibility impacts may occur at other sensitive areas in the region. The DSEIS states that, "visibility impacts at Denali NP would be lower than those shown [in the DSEIS] as it is further away from any oil and gas development that would occur in the program area compared to Gates of the Arctic."(6) Even if impacts would be lower at Denali NP compared to the impacts at Gates of the Arctic NP, there could still be a day or two where the haze index is greater than 0.5 ?dv. For the Willow project, BLM assessed impacts at the Arctic National Wildlife Refuge and it should have also assessed visibility impacts to the remainder of the Refuge, outside the Coastal Plain and including the Mollie Beattie Wilderness, in the DSEIS. The limited scope of the agencies' visibility impact analysis and the demonstrated adverse impacts support an Alternative more in line with the Low Development Scenario, which showed no visibility impacts at Gates of the Arctic NP. Again, the agencies should include measures aimed at minimizing NOx emissions from any future development in the Coastal Plain to help mitigate any significant ecosystem impacts. (5) DSEIS Appendix Q Table 1-17 (6) DSEIS Appendix Q at 29	Air quality related value impacts for visibility impairment were assessed in the regional photochemical modeling (Section 3.2.2 of the Draft SEIS). Visibility analysis is mandated only at Class I areas. The Denali National Park is the nearest Class I area to the program area. Since Denali is outside the modeling domain, modeled visibility impacts at Gates of the Arctic (the closest area to Denali within the domain) were used as a surrogate for evaluation using background extinction and other visibility parameters for Denali.
Brisson	Brook	Trustees for Alaska	80131	547	The near-field model results for the Coastal Plain DSEIS were assessed using the background concentrations that were used in the Willow modeling-i.e., the three-year average of 2018-2020 air monitoring data from the Nuiqsut Monitoring Station was used as representative ambient air background concentrations. The agencies acknowledge in the Coastal Plain DSEIS that, "[t]he background concentrations used for the Willow project are not necessarily representative of background concentrations at the Coastal Plain potential future development site which may cause differences in air quality impacts between the two projects."(13) In fact, the 24-hour average PM2.5 concentrations presented in the Coastal Plain DSEIS are higher than those used for the Willow project. Specifically, the 24-hour average PM2.5 concentrations in the DSEIS (leaving aside the values presented for the Nuiqsut monitor which were used in the Willow project analysis) range from 7.8 .ig/m3 to 12 .ig/m3-i.e., up to 71% higher than the background concentration of 7.0 .ig/m3 used in the Willow project analysis.(14) (13) DSEIS Appendix Q at 31 (14) See DSEIS Appendix Q Tables 1-2, 1-3, 1-6 and BLM Willow DSEIS Table 3.2-2 at 3-13	Ambient air quality monitoring data for the Coastal Plain was presented in Section 1.1.2 of the Air Resources Technical Support Document, Appendix S of the Draft SEIS. Five air quality monitoring stations are located within approximately 100 miles of the Coastal Plain and have verified data in the last 5 years or at least 3 years of data within the past 10 years. These stations are Kaktovik, Point Thomson, Nuiqsut, A-Pad, and CCP, and are shown in Figure 1-1 of Appendix R of the Draft SEIS. Kaktovik and Nuiqsut are the only two monitors that have current data through 2022. Table 1-2 and Table 1-4 of Appendix R of the Draft SEIS summarize measurements of criteria pollutants at the Kaktovik and Nuiqsut stations, respectively. The Kaktovik station is owned by the BLM, but the project does not yet have a complete 3-5 year dataset to be considered as 'representative background.' Data gathered from these stations demonstrate that criteria air pollutants are below the NAAQS for the years of available data at these stations. Near-field model results were tiered to the Willow project. Results from the near-field analysis conducted for Alternative E of the Willow project are used as a surrogate for the near-field analysis for the Coastal Plain SEIS. The modeled impacts (which include background concentrations) of Alternative E of the Willow project are sufficiently below the NAAQS for all criteria air pollutants, including PM2.5, and using the higher background value at Kaktovik instead of Nuiqsut would not result in a NAAQS exceedance (Section 3.3 of the 2023 Willow Master Development Plan Final SEIS).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	548	It's not clear how background concentrations for NO2 and PM10 in the Coastal Plain compare to those used for the Willow project, since the Willow project modeling used a 3-year average seasonally-varying hourly NO2 concentration and a 3-year average monthly PM10 concentration from the Nuiqsut monitor-added to modeled NO2 and PM10 concentrations-to determine impacts from these pollutants. But, with monitored 1-hour average NO2 concentrations presented in the Coastal Plain DSEIS ranging from 9.78 to 83.7 parts per billion (ppb), future project impacts of as little as 17 ppb could result in NO2 NAAQS exceedances when considering background concentrations on the high end of the range.(15) For the Willow project, BLM did not present 1-hour average NO2 background concentrations from the Nuiqsut monitor.(16) But more recent data (2020-2022) for that same monitor, presented in the Coastal Plain DSEIS, show a 3-year average of the 98th percentile maximum daily average concentration of 28.7 ppb.(17) If the background concentration in the Coastal Plain is as high as the 83.7 ppb (98th percentile daily max value) concentration included in the DSEIS, instead of the 28.7 ppb (98th percentile daily max value) concentration at the Nuiqsut monitor-i.e., if the background concentration is 55 ppb higher-then the total 1-hour average NO2 impacts would have the potential to exceed the NAAQS in all but one modeled scenario.(18) Given the wide-ranging monitoring data in the area that is presented and considered in the DSEIS, the agencies should require advance baseline monitoring-that meets EPA air monitoring standards-for use in any future project-level modeling and analysis in the Coastal Plain. (15) DSEIS Appendix Q Tables 1-2, 1-3, 1-5, 1-6 (16) See BLM Willow Master Development Plan SEIS AQTSD Table 3.2-2 at 3-13 (17) DSEIS Appendix Q Table 1-4 (18) One-hour average NO2 impacts for the modeled scenarios in the Coastal Plain DSEIS, plus an additional 55 ppb due to potentially higher background concentrations, could result in the following total impacts compared to the 1-hour average NO2 NAAQS of 100 ppb: (1) near-field impacts during construction of 125 ppb (131.5 tg/m3, or 69.9 ppb, plus 55 ppb); (2) near-field pre-drilling activities with two diesel-fired drill rig of 103 ppb (91.0 tg/m3, or 48.4 ppb, plus 55 ppb); (3) near-field pre-drilling activities with one diesel-fired drill rig of 99 ppb (82.3 tg/m3, or 43.8 ppb, plus 55 ppb); (4) near-field cumulative impacts during developmental drilling of 139 ppb (157.9 tg/m3, or 84.0 ppb, plus 55 ppb); and (5) near-field cumulative impacts during routine operations of 141 ppb (162.1 tg/m3, or 86.2 ppb, plus 55 ppb).	Ambient air quality monitoring data for the Coastal Plain was presented in Section 1.1.2 of the Air Resources Technical Support Document, Appendix R of the Draft SEIS. Five air quality monitoring stations are located within approximately 100 miles of the Coastal Plain and have verified data in the last 5 years or at least 3 years of data within the past 10 years. These stations are Kaktovik, Point Thomson, Nuiqsut, A-Pad, and CCP, and are shown in Figure 1-1 of Appendix R of the Draft SEIS. Kaktovik and Nuiqsut are the only two monitors that have current data through 2022. Table 1-2 and Table 1-4 of Appendix R of the Draft SEIS summarize measurements of criteria pollutants at the Kaktovik and Nuiqsut stations, respectively. The Kaktovik station is owned by the BLM, but the project does not yet have a complete 3-5 year dataset to be considered as 'representative background.' Data gathered from these stations demonstrate that criteria air pollutants are below the NAAQS for the years of available data at these stations. Near-field model results were tiered to the Willow project. Results from the near-field analysis conducted for Alternative E of the Willow project are used as a surrogate for the near-field analysis for the Coastal Plain SEIS. The modeled impacts (which include background concentrations) of Alternative E of the Willow project are sufficiently below the NAAQS for all criteria air pollutants, including PM10 and NO2, and using the higher background value at Kaktovik instead of Nuiqsut would not result in a NAAQS exceedance (Section 3.3 of the 2023 Willow Master Development Plan Final SEIS). The 83.7 ppb value is not representative of a background concentration as it is near a large development.
Brisson	Brook	Trustees for Alaska	80131	550	The agencies describe their analysis of the impacts from flaring in the DSEIS, as follows: Flare emissions were included in the developmental drilling and routine operations scenarios using two different operating conditions, typical operations and emergency or upset conditions. Maximum flaring emissions occur during emergency/upset conditions. The modeled short-term impacts included flares operating at upset conditions with maximum hourly rates for all hours of the year. Long term impacts included upset conditions for up to 10 hours per year.(19) (19) DSEIS Appendix Q at 30 This is also how BLM assessed impacts from flaring for the Willow project, which is incorporated by reference into the Coastal Plain DSEIS.(20) For the Willow project analysis, BLM compared flaring from the proposed project to flaring that occurred at the Alpine Central Facility in 2020 and 2021.(21) The amount of gas flared at the Alpine Central Facility in 2020 is significantly less than the amount of gas flared in 2021, with amounts in 2021 over 70% higher than in 2020. Yet, the amount of gas BLM assumes under Alternative B of the proposed Willow development project is closer to the lower amount of gas flared at the Alpine Central Facility in 2020. It is therefore possible the amount of gas flared for the proposed Willow development project-and, by incorporation, for future development in the Coastal Plain-could be quite a bit higher than what is assumed in the DSEIS. (20) DSEIS Appendix Q at 30 (21) BLM Willow Master Development Plan SEIS AQTSD Table 2.1-10 at 2-40	The Willow flaring assumptions, volumes, and emissions have been addressed in the published 2023 Willow Master Development Plan Final SEIS (Section 3.3.2.2) and ROD. As noted in Section 3.3.2.2, Air Emissions Inventory, of the Willow project FSEIS, the volume of gas flared at the Alpine Central Facility in 2021 was higher than 2020 due to facility upgrades which resulted in multiple startups and shutdowns of the gas compression turbine, requiring system depressurization and gas flaring. This type of upgrade is an infrequent event over Alpine's field of life. Thus, the 2021 flaring at ACF was not anticipated to be representative of potential future flaring activities at the WPF. Annual event flared volume for the Willow project was anticipated to be 197.1 MMSCF/year, which would be approximately 12% higher than Alpine Central Facility 2020 flared volume and about 35% less than 2021 flared volume. Therefore, the assumed annual flaring volume at the Willow project would be higher than 2020 annual flared volumes at Alpine Central Facility. Therefore, the flaring data incorporated by reference in the Coastal Draft SEIS are appropriate.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	553	In the DSEIS, the agencies describe including flaring in their modeling for developmental drilling and routine operations.(25) The agencies then present modeled impacts for drilling and operations with both "typical flare activity" and "emergency flare activity."(26) The near-field impacts during developmental drilling with typical flare activity are essentially the same as the near-field impacts during developmental drilling with emergency flare activity. Similarly, the near-field impacts during routine operations with typical flare activity are essentially the same as the near-field impacts during routine operations with emergency flare activity. The DSEIS states that "[m]aximum flaring emissions occur during emergency/upset conditions."(27) The agencies must reconcile this statement with the results in the DSEIS showing impacts during routine operations are essentially the same whether the scenario modeled involves "typical" or "emergency" flare activity. The agencies' assumption that emergency/upset flaring would only reasonably occur 10 hours per year is a critical factor in potential impacts from this type of flaring; they must provide support/justification for this level of emergency/upset flaring. It is important for the agencies to accurately and transparently assess the magnitude of potential impacts from flaring activities associated with future development in the Coastal Plain in order to ensure that sufficient mitigation measures can be employed to prevent significant air quality impacts. (25) DSEIS Appendix Q at 30 (26) DSEIS Appendix Q Tables 1-22 through 25 (27) DSEIS Appendix Q at 30	The Willow flaring assumptions, volumes, and emissions have been addressed in the published 2023 Willow Master Development Plan Final SEIS (Section 3.3.2.2) and ROD. As noted in Section 1.2.3, Near-field Model Tiering of Appendix R of the Draft SEIS, flare emissions were included in the developmental drilling and routine operations scenarios using two different operating conditions, typical operations and emergency or upset conditions. Maximum flaring emissions occur during emergency/upset conditions. The modeled short-term impacts included flares operating at upset conditions with maximum hourly rates for all hours of the year. Long term impacts included upset conditions for up to 10 hours per year. In addition to Willow project sources, emissions from RFFA sources within 31 miles of the Willow project area were also included for the developmental drilling and routine operations scenarios to assess expected cumulative long-term CAPs and HAPs impacts. A detailed description of the emissions inventory development for the Willow near-field modeling analysis is provided in BLM (2023). There is considerable uncertainty over the exact nature and magnitude of flaring at individual projects in the Coastal Plain program area at this early stage, and therefore, based on BLM's best professional judgment, Willow flaring data have been incorporated by reference.
Brisson	Brook	Trustees for Alaska	80131	554	Prevention of flaring through the collection of excess gas is the most beneficial option for reducing emissions from flaring; capturing and using the natural gas that is produced at oil wells would ensure that the energy value of the gas is not wasted. At processing facilities, it is important to document and assess the causes of flaring episodes and make changes to operations, training, equipment, etc. that may be needed to reduce plant upSEIS and maintenance, during which flaring occurs (e.g., when plant equipment is unavailable to process the gas stream). Adding excess capacity and / or backup units can be one way to reduce the amount of flaring that occurs due to upSEIS. Proper maintenance of equipment and training are also important ways to minimize the various causes of flaring emissions. For situations where flaring does occur, flares should be operated and maintained according to their design, in order to ensure optimal flare efficiency and performance.	Regulations regarding venting and flaring are outlined in the updated "Waste Prevention, Production Subject to Royalties, and Resource Conservation" rulemaking. https://www.federalregister.gov/documents/2022/11/30/2022-25345/waste-prevention-production-subject-to-royalties-and-resource-conservation
Adoko	Ashlee	State Of Alaska	80221	23	Insufficient Explanation of Methods In addition, the most recent proposed NEPA regulations,(62) propose the addition of a new sentence to 40 C.F.R. Sec. 1501.12(a), encouraging agencies to explain the assumptions and limitations of their models and methods. Appendix Q, Section 2.2.2 in the Leasing SEIS discusses greenhouse gas emissions, including emissions from transportation, processing and downstream greenhouse gas emissions using the GLEEM Model. Elsewhere it is only noted that the model capabilities and methodology can be found in Wolvovsky (2022). (62) https://www.federalregister.gov/documents/2023/07/31/2023-15405/national-environmental-policy-act-implementing-regulations-revisions-phase-2 . Unfortunately, this discussion does not disclose the limitations and caveats that were included in the background for the original use of the model for the Outer Continental Shelf (OCS) oil and gas leasing program. The GLEEM authors specifically noted that: "the majority of GHG emissions are the result of oil and gas production consumption. As reflected in this analysis, the emissions and associated social costs from the 2017-2022 program and the no leasing scenario are relatively similar, in large part due to the estimated substitution of more GHG-intensive oil and gas sources in the absence of a new OCS leasing program. Future changes in climate or other policies, supply, and demand, shifting economic circumstances, or technological advances could substantially affect the assumptions and results of this analysis." This paints a much different picture than the one provided in the Leasing SEIS which implies that the project would be responsible for downstream greenhouse gas emissions. Please revise the discussion of downstream greenhouse gas emissions to reflect only the greenhouse gas emissions that are directly attributable to the project, and please remove consideration of those that are merely remote and speculative, or otherwise attributable to the government and public consumption of petroleum refined fuels.	Emissions of downstream GHGs were assessed following the WORC-1 court decision.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	33	The SEIS does not address incomplete and unavailable information as required by CEQ regulations. This topic was addressed in the FEIS (Appendix Q) but is now absent in the SEIS.	Incomplete and unavailable information has been included in the Final SEIS in Appendix U.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	63	Topic Incomplete and Unavailable Information Section # N/A Page # N/A SEIS Text N/A Comment The SEIS does not address incomplete and unavailable information like in the FEIS, as required by CEQ regulations (40 CFR 1502.21). This topic was addressed in FEIS Appendix Q in detail but is now absent in the SEIS.	Incomplete and unavailable information has been included in the Final SEIS in Appendix U.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	179	Appendix R. Bureau of Land Management Energy Substitution Model Appendix R, which contains findings from the Bureau of Land Management Energy Substitution Model, provides a highly questionable outcome for increased domestic oil demand (Table 3). The model shows peak production from the Coastal Plain resulting in a reduced price for a barrel of crude ranging from \$0.15 for Alternative D to \$0.35 for Alternative B, or 0.35 to 0.82 cents (less than one penny) per gallon, likely within the margin of error for the model. Despite the negligible price change, the model nevertheless shows increased domestic demand for oil of nearly 10%. This surprising finding seems highly unlikely and should be both reanalyzed and reassessed. Additionally, this modelling effort represents a static view of the future using the specified assumptions for oil production. BLM acknowledges, however, "that new laws and policies governing energy production, efficiency, and [greenhouse gas] emissions are likely to be enacted"(328) and these changes would have significant ramifications for energy markets. For this modelling effort to be sufficiently informative for the public and decision makers, these potential new laws and policies also need to be modeled. The Tribes reject BLM's approach of waiting until policy enactment before incorporation into the model. (328) Draft SEIS App. R, at R-25.	The cited price and demand effects reflect model results over different time periods. The price effects reflect how the average price of a barrel of oil in a single year is simulated to change relative to EIAs price projection for that year. Although lower price effects are simulated to occur in each year with production, only price effects associated with the year of peak production were discussed since they represent the largest single year change. Unlike the price effects, displaced oil demand is a cumulative metric which reflects the total net change in demand for oil over the entirety of 30-year simulation period. BLM does not assume a static view of the future and calibrates the EnergySub model to an EIA baseline that still incorporates assumptions on technology evolution and changes in the energy mix over the long-run based on the energy and environmental standards and policy incentives in existing law and policies at the development of the AEO 2023, including laws which have been enacted in the past few years which are just now beginning to have an effect on energy markets. There is a lot of uncertainty in what legislation will be enacted by Congress and state legislatures in the coming years and even greater uncertainty in what implementing regulations may need to be developed in response to the mandates of new laws. BLM acknowledges that the enactment of new laws and implementing regulations will affect future energy supply and demand even though it is unable to predict what bills will be proposed by legislative bodies and adopted into Law or quantify the long-run impacts stemming from regulations that haven't been drafted.
Adoko	Ashlee	State Of Alaska	80221	22	Similarly, the BLM Energy Substitution Model discussed in Appendix R does not appear to be properly predicated on the current global energy market. This model is based on domestic energy demand rather than the global energy demand (including foreign energy demand). Given the current conflict in the Ukraine and the disruption and shift in demands in the global oil market, this modeling exercise oversimplifies the current market. With sanctions imposed by the United States and the European Union, Russian oil is now being exported to China and India rather than Europe. Any crude oil from the Coastal Plain would be subject to this marketplace disruption. According to the U.S. Treasury, "[i]n recent months, official price reporting agency data has shown that Russian Urals crude oil has traded at a discount of as much as \$25-\$35 per barrel less than Brent."(61) This disruption in the global energy market has introduced variables that are not adequately addressed in the BLM Energy Substitution Model. (61) https://home.treasury.gov/news/featured-stories/the-price-cap-on-russian-oil-a-progress-report . To simply assume that foreign oil demand is simply a function of oil prices disregards the increasingly complex reality of the current global energy market. Reliance on the BLM Energy Substitution Model is inaccurate and should not be relied on.	Energy markets are complex and known for being extremely volatile and highly unpredictable. Even the most sophisticated models are unable to capture all factors that influence energy supply and demand at varying geographic scales and the time-consuming process of updating a complex model's assumptions means that the projections they produce inherently lag current events and observable market prices. Appendix S explains that EnergySub is model of the U.S. energy market with simplifying assumptions about the U.S. market's interactions with foreign markets. BLM continues to recalibrate the EnergySub as new long-run data on energy markets becomes available with sufficient detail.

U.3.6 Best Available Information (BASII)

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Bright	Roselie	-	20475	8	References: 1. Babisch W, Neuhauser H, Thamm M, Seiwert M. Blood pressure of 8-14 year old children in relation to traffic noise at home--results of the German Environmental Survey for Children (GerES IV). Sci Total Environ. 2009 Nov 1; 407(22): 5839-43. DOI: 10.1016/j.scitotenv.2009.08.016. 2. Babisch W, Beule B, Schust M, et al. Traffic noise and risk of myocardial infarction. Epidemiology. 2005 Jan; 16(1): 33-40. DOI: 10.1097/01.ede.0000147104.84424.24. 3. Babisch W, Fromme H, Beyer A, Ising H. Increased catecholamine levels in urine in subjects exposed to road traffic noise: the role of stress hormones in noise research. Environ Int. 2001 Jun; 26(7-8): 475-81. DOI: 10.1016/s0160-4120(01)00030-7. 4. Babisch W. Road Traffic Noise and Cardiovascular Risk. Noise Health. 2008; 10 (38): 27-33. DOI:10.4103/1463-1741.39005. 5. Babisch W, Wölke G, Heinrich J, Straff W. Road traffic noise and hypertension--accounting for the location of rooms. 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Environ Health. 2021 Mar 25; 20(1): 32. DOI: 10.1186/s12940-021-00720-3.	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Bright (cont.)	Roselie (cont.)	-	20475 (cont.)	8 (cont.)	35. Tangermann L, Vienneau D, Hattendorf J, et al. The association of road traffic noise with problem behaviour in adolescents: A cohort study. Environ Res. 2022 May 1; 207: 112645. DOI: 10.1016/j.envres.2021.112645. 36. Thacher JD, Poulsen AH, Hvidtfeldt UA, et al. Long-Term Exposure to Transportation Noise and Risk for Type 2 Diabetes in a Nationwide Cohort Study from Denmark. Environ Health Perspect. 2021 Dec; 129(12): 127003.DOI: 10.1289/EHP9146. 37. Tiesler CMT, Birk M, Thiering E, et al. Exposure to road traffic noise and children's behavioural problems and sleep disturbance: results from the GINIplus and LISAplus studies. Environ Res. 2013 May; 123: 1-8. DOI:10.1016/j.envres.2013.01.009. 38. van Kempen E, Babisch W. The quantitative relationship between road traffic noise and hypertension: a metaanalysis. J Hypertens. 2012 Jun; 30(6): 1075-86. 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Bright (cont.)	Roselie (cont.)	-	20475 (cont.)	8 (cont.)	10.1056/NEJMoa0803894. 72. Jerrett M, Shankardass K, Berhane K, et al. Traffic-related air pollution and asthma onset in children: a prospective cohort study with individual exposure measurement. Environ Health Prospect. 2008 Oct; 116(10):1433-8. DOI: 10.1289/ehp.10968. 73. Knittel CR, Miller DL, and Sanders NJ. Caution, drivers! Children present: traffic, pollution, and infant health. Review of Economics and Statistics. 2016; 98 (2): 350-366. http://hdl.handle.net/ 1721.1/113913. 74. Lleras-Muney A. The needs of the army using compulsory relocation in the military to estimate the effect of air pollutants on children's health. Journal of Human Resources. 2010; 45 (3): 549-590. https://www.jstor.org/stable/25703469. 75. Mar TF, Koenig JQ. Relationship between visits to emergency departments for asthma and ozone exposure in greater Seattle, Washington. Annals of Allergy, Asthma, and Immunology. 2009; 103 (6): 474-479. 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Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	American citizen	-	20593	1	There is an overwhelming international scientific consensus that climate change is primarily caused by human use of fossil fuels, and that climate change related human deaths, suffering, and economic harm will dramatically increase unless there is an immediate and significant reduction in fossil fuel use. BLM has a legal and moral obligation to apply this science in making the best decisions in the long term public interest. But BLM traditionally approves most of what the oil companies want. This is an improper and dangerous bias. BLM should have enough courage to say no more often to the oil companies. Please carefully review the IPCC climate change related documents at the web links below and attached. https://www.ipcc.ch/report/ar6/syr/resources/spm-headline-statements/ https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf Please include my comments and the associated IPCC information in this NEPA project file.	The SEIS incorporates best available science in completing impacts analyses, including the referenced IPCC report. New data and references that were suggested or provided by commenters were reviewed and included as appropriate.
Spotts	Richard	-	36817	1	please review the attached IPCC report. It demonstrates the overwhelming international consensus on the urgent need to stop any further fossil fuel development. The climate crisis is already deadly and rapidly escalating in severity. It would be patently immoral to sacrifice the coastal plain for more fossil fuels that would simply worsen the climate crisis. Thank you very much for your kind consideration of my comments and the attached IPCC report.	The IPCC report is considered in the SEIS. New data and references that were suggested or provided by commenters were reviewed and included as appropriate.
Not Provided	Scared by climate change	-	45517	1	Please oppose any fossil fuel development and work to forever protect the coastal plain. Please review the attached IPCC report that documents climate change as a worsening and existential threat to humanity. Given the overwhelming science connecting fossil fuels with climate change, it would be insane and immoral for BLM to approve any further fossil fuel development. This is especially true in the remote coastal plain where such development would jeopardize significant wildlife populations.	The SEIS incorporates best available science in completing impacts analyses, including the referenced IPCC report. New data and references that were suggested or provided by commenters were reviewed and included as appropriate.
Schoen	John	-	45576	22	Before any lease sales or development occurs on the coastal plain of the Arctic Refuge, I strongly urge the Department of Interior to follow the 2003 NRC recommendations for filling the following knowledge gaps. Those recommendations include: - Ecosystem-level research in addition to local ecological studies. - Studies to understand the types of effects that exist at varying distances beyond the footprint of industrial structures. - Studies of air pollution that provide a quantitative baseline of spatial and temporal trends in air quality over long periods across the North Slope. - Studies of effect of seismic exploration and other off-road use on the tundra. - Research on habitat requirements of caribou, their reproductive physiology and movements, and how natural and anthropogenic disturbance affects them. - Studies of the effects of taking water from lakes on the North Slope for ice roads, pads, and other purposes. - Studies of the effects of oil and gas activities on human health	The NRC 2003 report has been incorporated into resource analyses both as relevant context for baseline conditions as well as potential impacts on resources, including seismic considerations and impacts on specific resources.
Schoen	John	-	45576	26	Literature Cited: Amstrup, S. 1997. Polar bear populations and denning in the Beaufort Sea. Pages 7-9 - 7-11 in K.L. Mitchell, report preparer. NPR-A Symposium Proceedings: Science, Traditional Knowledge, and the Resources of the Northeast Planning Area of the National Petroleum Reserve-Alaska. Department of Interior, Minerals Management Service, Anchorage, AK. _____. 2000. Polar bear. Pages 133-157 in J.C. Truett and S.R. Johnson, editor. The natural history of an Arctic oil field. Academic Press, San Diego, CA. _____, and Gardner, C. 1994. Polar bear maternity denning in the Beaufort Sea. Journal of Wildlife Management 58:1-10. Cameron, R.D. 1995. Can petroleum development depress the productivity of Arctic caribou? Proceedings of the 2nd Int. Arctic Caribou Conference 36. University of Alaska Fairbanks, AK. _____, D.J. Reed, J.R. Dau, and W.T. Smith. 1992. Redistribution of calving caribou in response to oil-field development on the Arctic slope of Alaska. Arctic 45:338-342. _____, W. T. Smith, R. G. White, and B. Griffith. 2002. The Central Arctic caribou herd. Pages 38-45 in D. C. Douglas, P. E. Reynolds, and E. B. Rhode, editors. Arctic Refuge coastal plain terrestrial wildlife research summaries. U.S. Geological Survey, Biological Resources Division, Biological Science Report USGS/BRD BSR-2002-0001. Curatolo, J. and S. Murphy. 1986. The effects of pipelines, roads, and traffic on the movement of caribou (Rangifer terandus). Canadian Field Naturalist 100:218-225. Dau, J.R., and R.D. Cameron. 1986. Effects of a road system on caribou distribution during calving. Rangifer Spec. Iss. 1:950101. Gilliam, J.K., and P.C. Lent, editors. 1982. Proceedings of NPR-A caribou/waterbird impact analysis workshop. Bureau of Land Management, Anchorage, AK. Griffith, B., D. Douglas, N. Walsh, D. Young, T. McCabe, D. Russell, R. White, R. Cameron, and K. Whitten. 2002. The Porcupine caribou herd. In D. Douglas, P. Reynolds, and E. Rhode, editors. Arctic Refuge coastal plain terrestrial wildlife research summaries. U.S. Geological Survey, Biological Resources Division, Biological Science Report BSR-2002-0001. IUCN. 2003Status of polar bear. In N. Lunn, E. Born, and S. Schliebe, editors. Proceedings of the 13th Working Meeting of the IUCN/SCC Polar Bear Specialist Group. 23-28 June 2001. International Union for the Conservation of Nature and Natural Resources, Nuuk, Greenland. < http://pbsg.npolar.no >. Accessed 2002. Murphy, S.M., and B.E. Lawhead. 2000. Caribou. Pages 59-84 in J.C. Truett and S.R. Johnson, editors. The natural history of an Arctic oil field. Academic Press, San Diego, CA. Nellemann, C. and R. Cameron. 1996. Effects of petroleum development on terrain preferences of calving caribou. Arctic 49:23-28. _____. and R. Cameron. 1998. Cumulative impacts of an evolving oil-field complex on the distribution of calving caribou. Canadian Journal of Zoology 76:1425-1430. National Research Council. 2003. Cumulative environmental effects of oil and gas activities on Alaska's North Slope. Washington, DC: The National Academies Press. Smith, W.T., and R.D. Cameron. 1985. Reactions of large groups of caribou to a pipeline corridor on the Arctic coastal plain of Alaska. Arctic 38:53-57. Whitten, K. and R. Cameron. 1983. Movements of collared caribou, Rangifer tarandus, in relation to petroleum development on the Aarctic slope of Alaska. Canadian Field-Naturalist. 97:143-146. _____, G. Garner, F. Mauer, and R. Harris. 1992. Productivity and early calf survival in the Porcupine caribou herd. Journal of Wildlife Management 56:201-212. Wolfe, S.A. 2000. Habitat selection by the calving caribou of the Central Arctic Herd, 1980-1995. M.S. Thesis. University of Alaska Fairbanks, AK. _____, B. Griffith, and C. Gray. 2000. Response of reindeer and caribou to human activities. Polar Research 19:63-73. Yokel, D.A., editor. 1997. Proceedings of Teshekpuk Lake Area Caribou/Waterfowl Analysis Workshop. Bureau of Land Management, Fairbanks, AK.	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.

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Mundstock	Louise	-	55219	1	BLM is required to ensure scientific integrity and be clear in its analysis about where it lacks information, and in some cases, obtain that information. BLM failed to acknowledge how much information is outdated or missing entirely in its analysis. The agency also failed to take the time to conduct new studies or obtain that missing information, calling into question its analysis and conclusions. And it failed completely to incorporate Indigenous knowledge in its analysis.	The SEIS uses the best available information in the analyses and has been updated to include recent information post-2019 Final EIS as well as information received between the Draft and Final SEIS. The Final SEIS has been updated to incorporate additional Indigenous Knowledge from existing data sources as well as new information provided during the public comment period.
Schoenhut	Karimah	Sierra Club	79130	39	Attachment 1 - Trent McDonald 2023 Report and Related Documents -1A - Trent McDonald, Polar Bear Dens Disturbed by Road Activity, Deadhorse to Kaktovik Road Impacts Within Arctic National Wildlife Refuge, October 27, 2023 -1B - 2021 Right-of-Way Application of Kaktovik Iñupiat Corporation to U.S. FWS -1C - Maternal Den Snow Depth Records Underlying Durner (2003), Obtained by Sierra Club FOIA Request to USGS Attachment 2 - John Whiteman, Ph.D., Chief Research Scientist, Polar Bears International, Letter re: Impacts on Polar Bears from Future Oil and Gas Activity as Described in Arctic National Wildlife Refuge Coastal Plain Leasing Program SDEIS (Oct. 25, 2023) Attachment 3 - Prior Analyses by Trent McDonald and Steven Amstrup -3A- Trent McDonald, January 5, 2021 Report Regarding Kaktovik Iñupiat Corporation Incidental Harassment Authorization for Polar Bears in the Arctic National Wildlife Refuge -3B - Trent McDonald, July 1, 2021 Focused Review of FWS Analysis for Proposed Incidental Take Regulation North Slope, Alaska -3C - Steve Amstrup, June 30, 2021 Comments to U.S. FWS on Proposed Incidental Take Regulation North Slope, Alaska -3D - Steve Amstrup, January 4, 2021Comments to U.S. FWS on Proposed Kaktovik Iñupiat Corporation Incidental Harassment Authorization for Polar Bears in the Arctic National Wildlife Refuge -3E - Steve Amstrup, Reports and Comments Submitted to BLM in 2018-2019 Regarding Coastal Plain of Arctic Refuge	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.
Schoenhut	Karimah	Sierra Club	79130	41	Attachment 5 - Studies Cited in Sierra Club Comments or Expert Reports	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.
Bigham	Angela	-	79150	4	For more up to date information on the coastal plain, see Burkart et al. 2022: https://ecos.fws.gov/ServCat/Reference/Profile/149472 "Burkart, G. A., C. Flanagan, M. A. Geist. 2022. Water Resources Inventory and Assessment: Arctic National Wildlife Refuge, Alaska. U.S. Department of the Interior, U.S. Fish and Wildlife Service. 253pages"	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.
Raynolds	Martha	-	79238	1	• The SEIS makes no attempt to quantify the impacts of 3-D seismic exploration, which can be extensive. These calculations are possible for each scenario, depending on how much land is available for seismic exploration (just leased area or all 1002 area - not clear in SEIS), based on scientific publications (Raynolds et al. 2020 and others). Raynolds, M. K., J. C. Jorgenson, M. T. Jorgenson, M. Kanevskiy, A. K. Liljedahl, M. Nolan, M. Sturm, and D. A. Walker. 2020. Landscape impacts of 3D-seismic surveys in the Arctic National Wildlife Refuge, Alaska. Ecological Applications 30.	The different types of seismic exploration that could occur within the program area are discussed in Appendix C and incorporated into resource analyses where appropriate. Detailed analyses are not possible at the programmatic level as the specifics of type and location of seismic exploration are unknown. Separate NEPA analyses would be completed for all seismic exploration applications and would analyze the site-specific impacts. References provided have been incorporated into the SEIS as appropriate.
Freitas	Benjamin	World Wildlife Fund	79957	56	Enclosures -References -WWF-US, The economics of oil development in the Arctic National Wildlife Refuge (October 12, 2021), also available at: https://www.worldwildlife.org/publications/the-economics-of-oil-development-in-the-arctic-national-wildlife-refuge . References Amstrup, S. C., Stirling, I. and Lentfer, J. W. (1986) Past and present status of polar bears in Alaska. Wildlife Society Bulletin 14, 241-254. Amstrup, S. C., and C. Gardner (1994) Polar bear maternity denning in the Beaufort Sea. Journal of Wildlife Management 58, 1-10. Amstrup, S. C., G. York, T. L. McDonald, R. Nielson, and K. Simac (2004) Detecting denning polar bears with forward looking infra-red (FLIR) imagery. BioScience 54, 337-344. Amstrup, S.C. (2018) Review of the SAE proposal for Seismic Exploration on the Coastal Plain. Polar Bears International. Arctic Monitoring and Assessment Programme (2013) Arctic Ocean Acidification Assessment- Summary for Policymakers. Atwood, T., United States Research Report [Conference presentation]. 2023 Polar Bear Range States Meeting of the Parties, October 30 - November 2 2023, online. https://polarbearagreement.org/about-us/meetings . Atwood, T.C., Bromaghin, J.F., Patil, V.P., Durner, G.M., Douglas, D.C., and Simac, K.S. (2020) Analyses on subpopulation abundance and annual number of maternal dens for the U.S. Fish and Wildlife Service on polar bears (Ursus maritimus) in the southern Beaufort Sea, Alaska. U.S. Geological Survey Open-File Report 2020-1087, 16 p., https://doi.org/10.3133/ofr20201087 . Atwood T.C., Peacock, E.L., McKinney, M.A., Lillie, K., Wilson, R.R., Douglas, D.C., Terletzky, P., and Miller, S. (2016) Rapid environmental change drives increased land use by an Arctic marine predator. PLoS ONE, v. 11, p. e0155932. Braund, S.R, P.B. Lawrence, E.G. Sears, R.K. Schraer, E.V. Regehr, B. Adams, R.T. Hepa, J.C. George, and A.L. Von Duyke (2018) Polar Bear TEK: A Pilot Study to Inform Polar Bear Management Models. North Slope Borough Department of Wildlife Management, Research Report NSB.DWM.RR.2018-01. Utqiagvik, Alaska USA Bromaghin J., Amstrup S., McDonald T., Stirling I., Derocher A., Richardson E., Regehr E., Douglas D., Durner G., and Atwood T.C. (2015) Polar bears in the Beaufort Sea: population decline and stabilization in the 2000's. Ecological Applications 25:634-651. Bromaghin, J. F., Douglas, D. C., Durner, G. M., Simac, K. S., & Atwood, T. C. (2021). Survival and abundance of polar bears in Alaska's Beaufort Sea, 2001- 2016. Ecology and Evolution, 00, 1-18. https://doi.org/10.1002/ece3.8139 . Cohen, J. et al. (2013) Warm Arctic, cold continents: A common pattern related to Arctic sea ice melt, snow advance, and extreme winter weather. Oceanography 26(4),	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas (cont.)	Benjamin (cont.)	World Wildlife Fund (cont.)	79957 (cont.)	56 (cont.)	https://doi.org/10.5670/oceanog.2013.70. Durner, G.M., Amstrup, S.C., Ambrosius, K.J (2006) Polar bear maternal den habitat in the Arctic National Wildlife Refuge, Alaska. Arctic, 31-36. Durner, G. M., A. S. Fischbach, S. C. Amstrup, and D. C. Douglas (2010) Catalogue of polar bear (Ursus maritimus) maternal den locations in the Beaufort Sea and neighboring regions, Alaska, 1910-2010. U.S. Geological Survey Data Series 568. U.S. Geological Survey, Reston, Virginia, USA. Erickson, P. and Lazarus, M. (2016) How would phasing out U.S. federal leases for fossil fuel extraction affect CO2 emissions and 2°C goals?, Stockholm Environment Institute, Working Paper 2016-02, https://www.sei-international.org/publications?pid=2937. Fischbach, A.S., Amstrup, S.C., and Douglas, D.C. (2007) Landward and eastward shift of Alaskan polar bear denning associated with recent sea ice changes. 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Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Flint	Alison	The Wilderness Society	80125	8	As described throughout our technical comments submitted by Trustees for Alaska, the draft SEIS continues to suffer from a number of baseline data and quantitative analysis gaps that prevent the agencies from effectively developing alternatives that avoid, minimize, and mitigate adverse impacts, and thereby ensure compliance with Refuge conservation purposes and other laws. This is true for a range of resource categories, including but not limited to air quality, caribou, fish, viewshed, and soundscapes. The agencies generally defer this type of analysis to the project level. However, effective programmatic analysis is critical prior to leasing to evaluate avoidance and necessary stipulations to constrain subsequent development. Fortunately, analytical approaches exist that allow for effective quantitative analysis of development effects at the programmatic level, while appropriately accounting for uncertainty in future discoveries and development proposals that will need to be addressed at the project level.	The SEIS uses the best available information in the analyses and has been updated to include recent information post-2019 Final EIS as well as information received between the Draft and Final SEIS. Where possible, quantitative analyses are used to describe baseline conditions as well as potential impacts under the alternatives. However, at the leasing stage it is unknown as to where leases will be issued, where exploration will occur, and, if oil and gas resources are discovered in economic quantities, where development would occur, therefore, making some quantitative analyses impossible.
Flint	Alison	The Wilderness Society	80125	9	Existing analyses for necessary project-level quantification of the expected impacts of various alternatives include analyses of disturbance and displacement,(12) acoustic impacts,(13) and viewshed impacts,(14) among other potential impacts. The cited works are just some of the many examples of studies that demonstrate the existing technology and feasibility of conducting such analyses. Methods used in such analyses can also be applied at the programmatic planning stage, such as the SEIS for the Coastal Plain Leasing Program. Wilson et al.(15) utilized a Monte Carlo simulation approach to quantify a range of expected impacts to caribou calving habitat and bird nests under multiple programmatic alternatives while explicitly incorporating uncertainty in where future oil and gas discoveries and development would occur. This approach was later updated(16) and code made freely available to facilitate future use.(17) It is feasible to build upon these approaches and incorporate the various forms of impact analysis described above. This would involve conducting development simulation modeling, repeating simulations many times to account for uncertainty in the precise location of future development and impacts.(18) For each simulated development footprint, impacts including direct loss, displacement, acoustic effects, and viewshed alternation could be simulated and quantified, using the approaches above or other comparable methods. By combining these results with habitat, subsistence, wildlife, and other important surface resource values, areas for broad-scale avoidance can be identified and incorporated into a selected alternative and final plan. For instance, BLM used preliminary findings from the Wilson et al. model to help analyze impacts among alternatives in the 2013 National Petroleum Reserve - Alaska Integrated Activity Plan process,(19) demonstrating the feasibility of applying such results to inform programmatic planning. This should be standard practice at the programmatic level, as well as a required stipulation of all leases, conducted for each project-level proposal.(20) (12) E.g., Fullman TJ, Wilson RR, Joly K, Gustine DD, Leonard P, Loya WM. 2021a. Mapping potential effects of proposed roads on migratory connectivity for a highly mobile herbivore using circuit theory. Ecological Applications 31(1), e02207. (13) E.g., BLM. 2023. Ambler Road Draft Supplemental Environmental Impact Statement, Appendix D, Attachment A. Bureau of Land Management, US Department of the Interior. Anchorage, AK, USA. (14) E.g., Smith, Stuart. True North GIS. 2019. Viewshed Analysis for Coastal Plain Oil and Gas Leasing Program. See Appendix D to Trustees et al. DEIS comments (Mar. 13, 2019) (resubmitted with Trustees et al. joint technical comments). (15) Wilson RR, Liebezeit JR, Loya WM. 2013. Accounting for uncertainty in oil and gas development impacts to wildlife in Alaska. Conservation Letters 6, 350-358. (16) Fullman TJ, Sullender BK, Cameron MD, Joly K. 2021b. Simulation modeling accounts for uncertainty while quantifying ecological effects of development alternatives. Ecosphere 12(5), e03530. (17) https://github.com/tfullman/dia . (18) Wilson et al. 2013; Fullman et al. 2021b. (19) E.g., BLM. 2012. National Petroleum Reserve - Alaska Final Integrated Activity Plan/Environmental Impact Statement, Vol. 2 at 194, Vol. 3 at 274-275. Bureau of Land Management, US Department of the Interior. Anchorage, AK, USA. (20) Note that all references cited in this section have been submitted into the project record as exhibits to the technical comments submitted by Trustees for Alaska, TWS, and other groups.	This SEIS utilizes the best available information and does not authorize any on-the-ground activities. At this programmatic scale, qualitative analysis is appropriate as it is unknown where development might occur and at what levels. Cumulative impacts are analyzed at the programmatic level and disclose potential impacts from past, present, and reasonably foreseeable future actions (see Appendix G). Project-specific cumulative impacts that take into account site specific conditions and would occur during NEPA analysis of proposed on-the-ground oil and gas activities. Site-specific analysis lends itself to quantitative forecasts for noted concerns and synergistic impacts.
Pomper	Liz	National Audubon Society	80129	1	The government's environmental review must be comprehensive and ensure the health of the Refuge and the protection of culturally irreplaceable resources, such as the Porcupine Caribou Herd. The analysis should include the best available conservation and climate change science, and complete information on Indigenous ways of life.	The SEIS uses the best available information in the analyses and has been updated to include recent information post-2019 Final EIS as well as information received between the Draft and Final SEIS. This includes relevant sections such as climate, subsistence, and sociocultural, to name a few.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	254	The draft SEIS fails to include any scientifically justified rationale, backed by empirical data, to explain the width of stream buffers and selection of only a subset of streams. The final SEIS should respond to the following questions, using peer-reviewed scientific evidence: - How was river buffer width determined and what scientific evidence was used to determine appropriate width to meet lease stipulation objective? - Why do certain rivers not have buffers and what scientific evidence to was used to determine which rivers have buffers to meet lease stipulation objective? - Why do all lower order streams not have a buffer and what scientific evidence was used to determine the appropriateness of this decision? - Does the lack of stream buffers on lower order streams negate protective objectives of higher order streams due to the fact that they are connected hydrologically? - How was aufeis/karst spring buffer width determined and what scientific evidence to was used to determine appropriate width to meet objective? - What is the state of science around aufeis flow paths, habitat use of fish and invertebrates across seasons?	River buffers and setbacks were determined through coordination with cooperating agencies, government-to government and ANCSA consultation, and recommendations from agency subject matter experts to protect the wide range of resource functions and values within those areas. Areas not included from the list under Lease Stipulation 1 are still subject to compliance with existing federal and state laws and regulations. A discussion on aufeis can be found in Appendix C, Section C.2.1 " Freshwater Springs, Aufeis, and Groundwater".
Brisson	Brook	Trustees for Alaska	80131	382	Additionally, a new study indicates a limitation in Phocidaes' abilities to increase their call amplitude.(1069) While this study specifically looked at bearded seals, given the acoustic behavioral and physiological similarities between ice seals, it is likely that ringed seals also experience a vocalization threshold that creates a vulnerability to anthropogenic masking. Fournet et al., 2021 argues this threshold is "critical for developing management plans for an industrializing arctic."	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.
Brisson	Brook	Trustees for Alaska	80131	410	The agencies must also revise their analysis to account for the best available science. In their cumulative analysis the agencies improperly discount studies predicating population declines for the Porcupine Caribou Herd as a result of oil and gas activities in the Coastal Plain.(1134) Without identifying any study by name, the agencies state: "[t]he models are based on various assumptions, some of which are not supported in the literature; thus, the conclusions may overestimate the effects on the Porcupine Caribou Herd."(1135) Brushing aside model estimates in this way is unjustified. This is especially true given that the agencies recognize such models as the best available science elsewhere(1136) and note that population declines predicted by such models could have a "substantial impact" on communities that utilize the Porcupine Caribou Herd(1137) beyond the immediate program area.(1138) (1134) Id. at 3-329 to 30. (1135) Id. at 3-329. (1136) Id. at 3-222 (explaining population models "are based on different assumptions and development scenarios but provide the best available quantification of the magnitude of potential demographic impacts on the Porcupine Caribou Herd that could occur as a result of development."). (1137) Id. at 3-329. (1138) Id. at 3-330.	The text in Section 3.4.3 (Subsistence Use and Resources) has been revised for clarity. Additional text has also been added to Section 3.3.4, (Terrestrial Mammals), Cumulative Impacts, regarding the use of models, assumptions of the model and potential limitations in the assumptions of the model.
Brisson	Brook	Trustees for Alaska	80131	533	References cited in Fish and Aquatic Species Section Acuña, V., M. Hunter and A. Ruhí. 2017. Managing temporary streams and rivers as unique rather than second-class ecosystems. Biological Conservation 211:12-19. Arp, C. D., B. M. Jones, G. Grosse, A. C. Bondurant, V. E. Romanovsky, K. M. Hinkel, et al. 2016. Threshold sensitivity of shallow Arctic lakes and sublake permafrost to changing winter climate. Geophysical Research Letters 43(12):6358-6365. Benda, L., D. Miller, J. Barquin, R. McCleary, T. Cai, and Y. Ji. 2016. Building Virtual Watersheds: A Global Opportunity to Strengthen Resource Management and Conservation. Environmental Management 57(3):722-739. Bidlack, A. L., L. E. Benda, T. Miewald, G. H. Reeves, and G. McMahan. 2014. Identifying Suitable Habitat for Chinook Salmon across a Large, Glaciated Watershed. Transactions of the American Fisheries Society 143(3):689-699. Borchert, D.L., S.T. Buckland, and W. Zucchini. 2002. Estimating Animal Abundance: closed populations. Springer-Verlag. 277p. Bradley, P., W. Morris, and L. Moulton. 2016. Fish and Aquatic Habitat Surveys in the Topagoruk, Chipp, and Meade Rivers, 2012-2016, Technical Report No. 16-07. Alaska Department of Fish and Game Divisions of Habitat. Available at: https://www.adfg.alaska.gov/static/home/library/pdfs/habitat/16_07.pdf Brown, R.J. 2008. Life history and demographic characteristics of Arctic cisco, Dolly Varden, and other fish species in the Barter Island region of northern Alaska, U.S. Fish and Wildlife Service, Alaska Fisheries Technical Report No. 101, Fairbanks, Alaska. Brown, R. J., M. B. Courtney, and A. C. Seitz. 2019. New Insights into the Biology of Anadromous Dolly Varden in the Canning River, Arctic National Wildlife Refuge, Alaska. Transactions of the American Fisheries Society 148(1):73-87. Brown, R. J., M. B. Loewen, T. L. Tanner, and N. Giguère. 2014. Overwintering Locations, Migrations, and Fidelity of Radio-Tagged Dolly Varden in the Hulahula River, Arctic National Wildlife Refuge, 2007-09. Arctic 67(2):149-158. Brown, T. G., and G. F. Hartman. 1988. Contribution of Seasonally Flooded Lands and Minor Tributaries to the Production of Coho Salmon in Carnation Creek, British Columbia. Transactions of the American Fisheries Society 117(6):546-551. Burnett, K. M., G. H. Reeves, D. J. Miller, S. Clarke, K. Vance-Borland, and K. Christiansen. 2007. Distribution of salmon-habitat potential relative to landscape characteristics and implications for conservation. Ecological Applications 17(1):66-80. Cai, L., V. A. Alexeev, C. D. Arp, B. M. Jones, A. K. Liljedahl, and A. Gädeke. 2018. The Polar WRF Downscaled Historical and Projected Twenty-First Century Climate for the Coast and Foothills of Arctic Alaska. Frontiers in Earth Science 5:111. Caissie, D. 2006. The thermal regime of rivers: a review. Freshwater Biology 51(8):1389-1406. CHaMP (Columbia Habitat Monitoring Program). 2015. Scientific protocol for salmonid habitat surveys within the Columbia Habitat Monitoring Program. Prepared by the Columbia Habitat Monitoring Program. Chapman, J. M., C. L. Proulx, M. A. N. Veilleux, C. Levert, S. Bliss, M.-È. André, et al. 2014. Clear as mud: A meta-analysis on the effects of sedimentation on freshwater fish and the effectiveness of sediment-control measures. Water Research 56:190-202. Cocchiglia, L., P. J. Purcell, and M. Kelly-Quinn. 2012. A Critical Review of the Effects of Motorway River-Crossing Construction on the Aquatic Environment. Freshwater Reviews 5(2):141-168. Cott, P. A., A. Schein, B. W. Hanna, T. A. Johnston, D. D. MacDonald, and J. M. Gunn. 2015. Implications of linear developments on northern fishes. Environmental Reviews 23(2):177-190. Cott, P. A., P. K. Sibley, A. M. Gordon, R. A. Bodaly, K. H. Mills, W. M. Somers, et al. 2008. Effects of Water Withdrawal From Ice-Covered Lakes on Oxygen, Temperature, and Fish1. JAWRA Journal of the American Water Resources Association 44(2):328-342. Courtney, M. B., B. Scanlon, R. J. Brown, A. H. Rikardsen, C. P. Gallagher, and A. C. Seitz. 2018. Offshore ocean dispersal of adult Dolly Varden Salvelinus malma in the Beaufort Sea. Polar Biology 41(4):817-825. Craig, P.C. and P.J. McCart. 1974. Classification of stream types in Beaufort Sea drainages between	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson (cont.)	Brook (cont.)	Trustees for Alaska (cont.)	80131 (cont.)	533 (cont.)	Prudhoe Bay, Alaska and the Mackenzie Delta. Arctic Gas, Biological Report Series no. 17(Chapter I): 47 p. Craig, P. 1984. Fish Use of coastal waters of the Alaskan Beaufort Sea: a review. Transactions of the America Fisheries Society 113:265-282. Craig, P., and L. Haldorson. 1986. Pacific Salmon in the North American Arctic. Arctic 39(1):2- 7. Craig, P. C., W. B. Griffiths, L. Haldorson, and H. McElderry. 1982. Ecological Studies of Arctic Cod (Boreogadus saida) in Beaufort Sea Coastal Waters, Alaska. Canadian Journal of Fisheries and Aquatic Sciences 39(3):395-406. Craig, P. C., W. B. Griffiths, L. Haldorson, and H. McElderry. 1985. Distributional patterns of fishes in an Alaskan Arctic Lagoon. Polar Biology 4:9-18 Dunmall, K. M., D. G. McNicholl, C. E. Zimmerman, S. E. Gilk-Baumer, S. Burril, and V. R. von Biela. 2022. 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Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	588	References Cited Amstrup SC and Bitz CM. 2023. Unlock the Endangered Species Act to address GHG emissions. Science 381: 949-51. Amstrup SC, York G, McDonald TL, et al. 2004. Detecting denning polar bears with Forward-Looking Infrared (FLIR) imagery. BioScience 54: 337-44. Bromaghin JF, Douglas DC, Durner GM, et al. 2021. Survival and abundance of polar bears in Alaska's Beaufort Sea, 2001-2016. Ecology and Evolution 11:14250-14267. Ditmer MA, Vincent JB, Werden LK, et al. 2015. Bears show a physiological but limited behavioral response to unmanned aerial vehicles. Current Biology 25: 1-6. Ellenberg U, Mattern T, Seddon PJ, and Jorquera GL. 2006. Physiological and reproductive consequences of human disturbance in Humboldt penguins: The need for species-specific visitor management. Biological Conservation 133: 95-106. George B, Bateman T, Formica M, et al. 2023. On evaluating the efficacy of air-borne synthetic aperture radar for detecting polar bears: A pilot study. Ursus 34: e6. Hunter CM, Caswell H, Runge MC, et al. 2010. Climate change threatens polar bear populations: a stochastic demographic analysis. Ecology 91: 2883-97. MacGillivray AO, Hannay DE, Racca RG, et al. 2003. Assessment of Industrial Sounds and Vibrations Received in Artificial Polar Bear Dens, Flaxman Island, Alaska. Victoria, British Columbia: ExxonMobil Production Company. Moen AN, Whitemore S, and Buxton B. 1982. Effects of disturbance by snowmobiles on heart rate of captive white-tailed deer. New York Fish and Game Journal 29: 176-83. Pagano AM, Durner GM, Rode KD, et al. 2018. High-energy, high-fat lifestyle challenges an Arctic apex predator, the polar bear. Science 359: 568-72. Patil VP, Durner GM, Douglas DC, and Atwood TC. 2022. Modeling the spatial and temporal dynamics of land-based polar bear denning in Alaska. The Journal of Wildlife Management 86: e22302. Robinson R, Smith TS, Larsen RT, and Kirschhoffer B. 2014. Factors influencing the efficacy of forward-looking infrared in polar bear den detection. BioScience 64: 735-42. Rode KD, Olson J, Eggett D, et al. 2018. Den phenology and reproductive success of polar bears in a changing climate. Journal of Mammalogy 99: 16-26. Smith TS, Amstrup SC, Kirschhoffer BJ, and York G. 2020. Efficacy of aerial forward-looking infrared surveys for detecting polar bear maternal dens. PLOS ONE 15: e0222744. Sturm DM, Parr MC, and Larsen DC. 2019. A report on the snow cover of the 1002 area of the Arctic National Wildlife Refuge, 2014-2019. Geophysical Institute, University of Alaska Fairbanks. USFWS. 2021. Marine Mammals; Incidental Take During Specified Activities; North Slope, Alaska. USGS Alaska Science Center, Polar Bear Research Program. 2018. Denning Phenology, Den Substrate, and Reproductive Success of Female Polar Bears (Ursus maritimus) in the southern Beaufort Sea 1986-2013 and the Chukchi Sea 1987-1994. Watts PD, Ferguson KL, and Draper BA. 1991. Energetic output of subadult polar bears (Ursus maritimus) - resting, disturbance and locomotion. Comparative Biochemistry and Physiology a-Physiology 98: 191-3. Wilson RR and Durner GM. 2020. Seismic survey design and effects on maternal polar bear dens. The Journal of Wildlife Management 84: 201-12. Woodruff SP, Blank JJ, Wisdom SS, et al. 2022. Evaluating the efficacy of aerial infrared surveys to detect artificial polar bear dens. Wildlife Society Bulletin 46: e1324.	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.
Heynen	Mitch	Government of Yukon	80159	3	The most current analyses in the area should be considered as a starting point, but is currently not referenced in the draft SEIS. Johnson et al. (2020) analyzed Central Arctic caribou data and found that the herd avoided infrastructure and/or activities by 5 km during calving, 2 km during post-calving, and 1 km during insect harassment periods. We note that Johnson et al. had a very limited sample period (i.e., two years) and that different ZOIs may have been measured in other years should the study have continued to measure the ZOI in more years. For example, Boulanger et al. (2021) found avoidance distances of barren-ground caribou from mining activity in the adjacent Bathurst herd ranged between 6.1 and 18.7 km, varying significantly between years and dependent on habitat selection by the herd relative to infrastructure. Evidence is strong that ZOI's often extend far beyond the cited 4 km threshold in Alaska's oil fields. The draft SEIS and previous iterations have identified that harvesting will be allowed in the program area (see F-34). Ample evidence in the literature from multiple systems has also made clear that the ZOI of a project's infrastructure is increased when harvesting is permitted from that infrastructure. For example, Plante et al., (2018) found the ZOI increased in areas once hunting started as compared to before hunting activities. Since hunting will be allowed within the proposed development scenarios outlined in the draft SEIS, any buffer applied to the selected frequency threshold must also consider that the ZOI of infrastructure will be larger due to hunting activities. Finally, with respect to the ZOI, it is important to note that PCH are naive to industrial disturbance and are expected to respond more strongly and negatively than the Central Arctic Herd (CAH), where most mitigations are borrowed (DSEIS 3-208).This effect will occur on the herd's most sensitive ranges (PCTC 1993); the herd has limited habitats to select from if displaced from these habitats; and the herd has relatively low levels of productivity if impacted based on historic rates of increase (Caikoski 2018). When considered with the points made above by Johnson et al., (2020), Boulanger et al., (2021), and Plante et al., (2018), together with the many other references that could be added here, it is clear that simply selecting a frequency threshold arbitrarily and not accounting for a ZOIfrom disturbances that could occur immediately adjacent to the boundary of the protected areas, is not sufficient to protect the herd's most critical ranges. Given the results of Russell and Gunn (2019) that clearly outline the heightened risk of development in this area for PCH, residual impacts will be too significant if the above steps are not implemented, and even if implemented, may still result in significant residual impacts as we are largely unaware of how this will affect the herd. To date, the evidence referenced above is the only evidence we are aware of that has been developed specifically for the PCH and the proposed oil and gas leasing program. The evidence must be applied throughout the SEIS to ensure any planned activities are science based and conservation oriented. Not doing so will result in the BLM and USFWS failing to meet the goals of the Arctic National Wildlife Refuge.	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	145	The agencies are relying on limited and out-of-date data sources for Section 3.4.2, creating an inaccurate picture that does not meet EIS methodology and scientific accuracy. The CEQ's NEPA implementing regulation state that "[a]gencies shall ensure the professional integrity, including scientific integrity, of the discussions and analyses in environmental documents."(259) In addition, the regulations state that "[a]gencies shall make use of reliable existing data and resources ... [and] are not required to undertake new scientific and technical research to inform their analyses."(260) While agencies do not need to undertake new research, they do need to use reliable existing data. BLM and USFWS gloss over their reliance on 40-year-old data to inform much of the "[p]revious Archaeological and Historic Resources Surveys" and Previously Documented Sites" subsections. The last comprehensive archaeological survey of the interior of the program area was in 1982.(261) At the November 17, 2020 Section 106 consultation meeting for seismic work in the program area between BLM, USFWS, Native Village of Venetie, Venetie Tribal Government, and the Native Village of Arctic Village, Jeremy Karchut (Regional Archaeologist/Regional Historic Preservation Officer, USFWS Alaska Region), reaffirmed BLM and USFWS's dearth of archaeological knowledge of the program area when he stated "We know almost nothing about -- archaeologically about so much of this area. And what we -- what little we do know is very outdated." (259) 40 CFR § 1502.23. (260) Id. (261) Hall, Edwin S. 1982. Preliminary Archaeological and Historic Resource Reconnaissance of the Coastal Plain Area of the Arctic National Wildlife Refuge, Alaska. Prepared for U.S. Fish and Wildlife Service. Document on file at OHA, Anchorage. BLM needs to add to the statement "Many of the sites in the program area were documented before the use of global positioning systems, so the reported locations of many sites may not be accurate" in the subsection Locations of Previously Documented Sites. All the ancestral site location data BLM and USFWS are relying upon, except for a few of the coastal ancestral sites, were documented before the invention of GPS. Issues with location accuracy of North Slope ancestral sites recorded prior to GPS use is widely known throughout the Alaskan archaeological community, as Howard Smith described in 2007 in the Alaska Journal of Anthropology:(262) (262) Smith, Howard L. 2007. A Brief History of Cultural Resource Management in Alaska. Alaska Journal of Anthropology 5(2):17-27. Electronic document, http://www.alaskaanthropology.org/wp-content/uploads/2017/08/Vol_5_2-Smith.pdf .	The joint lead agencies have used the best available information on cultural resources on the Coastal Plain. As noted, NEPA regulations do not require undertaking new scientific studies to inform the analysis. However, the BLM coordinating with Tribes and others to finalize the process for conducting cultural resource surveys ssociated with the Coastal Plain program area is being developed as part of the Section 106 programmatic agreement.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	180	References Albon, S.D., Irvine, R.J., Halvorsen, O., Langvatn, R., Loe, L.E., Ropstad, E., Veiberg, V., Van der Wal, R., Bjørkvoll, E.M., Duff, E.I., Hansen, B.B., Lee, A.M., Tveraa, T., Stein, A. 2017. Contrasting effects of summer and winter warming on body mass explain population dynamics in a food-limited Arctic herbivore. Global Change Biology 23, 1374-1389. Arthur, S.M., Del Vecchio, P.A. 2009. Effects of oil field development on calf production and survival in the Central Arctic herd. Alaska Department of Fish and Game. Federal Aid in Wildlife Restoration. Final Research Technical Report. Grants W-27-5 and W-33-1 through W-33-4. Project 3.46. Juneau, AK, USA. Bacon, J.J., Hepa, T.R., Brower, Jr. H.K., et al. 2009. Estimates of subsistence harvest for villages on the North Slope of Alaska, 1994-2003. 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Newman (cont.)	Matthew (cont.)	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council (cont.)	80190 (cont.)	180 (cont.)	the Interior, U.S. Fish and Wildlife Service, Arctic National Wildlife Refuge, Fairbanks, AK, USA. Evans, D.O. 2007. Effects of hypoxia on scope-for-activity and power capacity of lake trout (<i>Salvelinus namaycush</i>) Can. J. Fish. Aquat. Sci. 64: 345-36. Fauchald, P., Park, T., Tømmervik, H., Myneni, R., Hausner, V.H. 2017. Arctic greening from warming promotes declines in caribou populations. Science Advances 3, e1601365. Forbes, B.C., Kumpuka, T., Meschtyb, N., Laptander, R., Macias-Fauria, M., Zetterberg, P., Verdonen, M., Skarin, A., Kim, K-Y., Boisvert, L.N., Stroeve, J.C., Bartsch, A. 2016. Sea ice, rain-on-snow and tundra reindeer nomadism in Arctic Russia. Biology Letters 12, 20160466. Gaboury, M.N., Patalas, J.W. 1984. Influence of water level drawdown on the fish populations of Cross Lake, Manitoba. Can. J. Fish. 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Newman (cont.)	Matthew (cont.)	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Councill (cont.)	80190 (cont.)	180 (cont.)	Schaefer, J.A., Mahoney, S.P. 2013. Spatial dynamics of the rise and fall of caribou (Rangifer tarandus) in Newfoundland. Canadian Journal of Zoology 91, 767-774. Schein, A., Scott, J.A., Mos, L., et al. 2009. Oil dispersion increases the apparent bioavailability and toxicity of diesel to rainbow trout (Oncorhynchus mykiss) Environ. Toxicol. Chem. 28: 595-602. Schindler, D.W. 2001. The cumulative effects of climate warming and other human stresses on Canadian freshwaters in the new millennium. Can. J. Fish. Aquat. Sci. 58: 18-29. Semple, J.R., Zamora, P.J., Rutherford, R.J. 1995. Effects of dredging on egg to fry emergence survival, timing and juvenile Atlantic salmon abundance, Debert River, Nova Scotia. Can. Tech. Rep. Fish. Aquat. Sci. 2023. 34 p. Tape, K.D., Gustine, D.D., Ruess, R.W., Adams, L.G., Clark, J.A. 2016. Range expansion of moose in arctic Alaska linked to warming and increased shrub habitat. PLoS ONE 11, e0152636. Tews, J., Ferguson, M.A.D., Fahrig, L. 2007. Potential net effects of climate change on High Arctic Peary caribou: lessons from a spatially explicit simulation model. Ecological Modelling 207, 85-98. Trawicki, J.M., Lyons, S.M., and Elliot, G.V. 1991. Distribution and quantification of water within the lakes of the 1002 area, Arctic National Wildlife Refuge, Alaska. Alaska Fisheries Technical Report Number 10, U.S. Fish and Wildlife Services, Anchorage, Alaska. Turner, M.A., Huebert, D.B., Findlay, D.L., et al. 2005. Divergent impacts of experimental lake-level drawdown on planktonic and benthic plant communities in a boreal forest lake. Can. J. Fish. Aquat. Sci. 62: 991-1003. Uboni, A., Horstkotte, T., Kaariejärvi, E., Sévêque, A., Stammler, F., Olofsson, J., Forbes, B.C., Moen, J. 2016. Long-term trends and role of climate in the population dynamics of Eurasian reindeer. PLoS ONE 11, e0158359. U.S. Fish and Wildlife Service. 2015. Arctic National Wildlife Refuge revised comprehensive conservation plan-chapter 4, Affected Environment: U.S. Fish and Wildlife Service, Final environmental impact statement, v. 1 256p accessed June 04, 2018. Veiberg, V., Loe, L.E., Albon, S.D., Irvine, R.J., Tveraa, T., Ropstad, E., Stien, A. 2017. Maternal winter body mass and not spring phenology determine annual calf production in an Arctic herbivore. Oikos 126, 980-987. Viavant, T. 2005. Eastern North Slope Dolly Varden Stock assessment. Alaska Department of Fish and Game. Fishery Data Series Number 05-07. Vors, L.S., Boyce, M.S. 2009. Global declines of caribou and reindeer. Global Change Biology 15, 2626-2633. Ward, D., and Craig, P. 1974. Catalogue of streams, lakes and coastal areas in Alaska along routes of the proposed gas pipeline from Prudhoe Bay to the Alaska/Canadian border. Canadian Arctic Gas Study Ltd./Alaskan Arctic Gas Study Co. Bio. Rep. Ser. 19, Calgary, Alberta. Wilson, R.R., Prichard, A.K., Parrett, L.S., Person, B.T., Carroll, G.M., Smith, M.A., Rea, C.L., Yokel, D.A. 2012. Summer Resource Selection and Identification of Important Habitat Prior to Industrial Development for the Teshekpuk Caribou Herd in Northern Alaska. PLOS One 7, e48697. Wilson, R.R., Liebezeit, J.R., Loya, W.M. 2013. Accounting for uncertainty in oil and gas development impacts to wildlife in Alaska. Conservation Letters 6, 350-358. Wolfe, S.A. 2000. Habitat selection by calving caribou of the Central Arctic Herd, 1980-95. MS Thesis, University of Alaska Fairbanks, Fairbanks, Alaska, USA. Wolfe, S.A., Griffith, B., Wolfe, C.A.G. 2000. Response of reindeer and caribou to human activities. Polar Research 19, 63-73.	(see above)

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Grafe	Erik	Earthjustice	80222	4	Including a climate measure in Refuge leases is consistent with literature showing the need for and additionality of supply-side emissions reductions. It is well established that reducing fossil fuel extraction should be an integral part of reducing greenhouse gas emissions. The International Energy Agency's 1.5°C-consistent pathway requires "no investment in new fossil fuel supply projects" starting immediately.(16) A 2021 paper published in Nature calculates that an even-odds chance of avoiding a 1.5°C rise would require leaving nearly 60 percent of existing oil and fossil methane gas reserves and 90 percent of coal reserves in the ground.(17) Governments will have to decommission a significant portion of already developed sites,(18) a task that requires addressing already vested interests.(19) Any new development would add to the reductions that must be made in currently producing fields, making the later stages of transition even more challenging.(20) When also incorporating principles of equity in phase-down pathways, the United States must leave even more of its reserves undeveloped.(21) (16) International Energy Agency, Press Release, Pathway to critical and formidable goal of net-zero emissions by 2050 is narrow but brings huge benefits, according to IEA special report (May 18, 2021). (17) D. Welsby et al., Unextractable fossil fuels in a 1.5 °C world, 597 NATURE 230, 230 & 233, Tbl. 1 (Sept. 9, 2021). (18) See, e.g., K. Trout et al., Existing fossil fuel extraction would warm the world beyond 1.5 °C, 17(6) ENVIRONMENTAL RESEARCH LETTERS 064010 (May 2022). (19) International Institute for Sustainable Development, Navigating Energy Transitions: Mapping the road to 1.5°C (2022). (20) International Energy Agency, World Energy Outlook 2022 at 80 (rev. Nov. 2022). (21) See U.S. Climate Action Network, The US Fair Share: Towards a USCAN Working Consensus (2020); D. Calverley & K. Anderson, Phaseout Pathways for Fossil Fuel Production Within Paris-compliant Carbon Budgets at 6, Tyndall Centre for Climate Change Research, Research Report (Mar. 11, 2022); D. Tong et al., Committed emissions from existing energy infrastructure jeopardize 1.5 °C climate target, 572 NATURE 373 (Aug. 15, 2019). Any actions that reduce fossil fuel production on U.S. federal lands will reduce the amount available in the global market, which would result in both lower domestic consumption and less exported and consumed abroad. For example, supply-side actions in the United States, such as limiting issuance of new federal oil and gas leases, could reduce U.S. consumption-based emissions by more than 20 MMT CO2e annually(22) and could reduce net global emissions by between 80 and 139 MMT CO2e annually.(23) Pursuing concurrent and coordinated demand-side and supply-side actions leads to the most efficient and maximum greenhouse gas emissions reductions.(24) Further, supply-side measures are more effective, equitable, and feasible than other measures to reduce greenhouse gas emissions.(25) Drilling prohibitions guarantee that fossil fuels are not extracted and burned.(26) There are a limited number of large producers so restrictions on production are more efficient than regulating downstream users.(27) Additional investment in production in the Refuge also undermines necessary investment in renewable energy.(28) (22) See B. C. Prest, Inflation Reduction Act Can Achieve Emissions Reductions Even with Oil and Gas Provisions, Resources for the Future, fig.1 (Aug. 15, 2022). (23) B. C. Prest, Supply-Side Reforms to Oil and Gas Production on Federal Lands: Modeling the Implications for Climate Emissions, Revenues, and Production Shifts, Resources for the Future, Working Paper 20-16 at 7 (rev. Dec. 2021). (24) B. C. Prest, Partners, Not Rivals: The Power of Parallel Supply-Side and Demand-Side Climate Policy, Resources for the Future, Report 22-06 (Apr. 2022). (25) A. Rempel & J. Gupta, Equitable, effective, and feasible approaches for a prospective fossil fuel transition, WILEY INTERDISCIPLINARY REVIEWS: CLIMATE CHANGE 13: e756 (2022); see also M. Lazarus et al., Supply-side climate policy: the road less taken, Stockholm Environmental Institute, Working Paper 2015-13 (2015). (26) M. Paul & L. Moe, An Economist's Case for Restrictive Supply Side Policies: Ten Policies to Manage the Fossil Fuel Transition at 6, 17 (Mar. 2023) (Paul & Moe 2023). (27) F. Green & R. Denniss, Cutting with both arms of the scissors: the economic and political case for restrictive supply-side climate policies, 150 CLIMATE CHANGE 73 (2018) (Green & Denniss 2018). (28) See generally UN Environment Programme et al., UN-convened Net-Zero Asset Owner Alliance, Call to Action to Private Market Asset Managers (Nov. 2022) (UNEP et al. 2022).	New data and references that were suggested or provided by commenters were reviewed and included as appropriate. The most recent and relevant analysis for near-field air quality impacts of oil and gas developments on the North Slope is the Willow Master Development Plan Final SEIS and ROD. There is considerable uncertainty around the specific features of a future development project in the program area, the modeling is based on BLM's best judgment on the potential distribution of development and infrastructure as well as appropriate bounding analysis of the potential emissions from the program area. If and when specific individual projects are developed in the program area, they would go through their own NEPA assessment. In addition, as noted in ROP 6 (Chapter 2 of the Draft SEIS), project-specific terms and conditions required prior to authorizing any future oil and gas activity in the program area would be determined as part of site-specific NEPA analyses and would include one or more of the following: air modeling (of emissions and source parameters) to analyze direct, indirect, and cumulative impacts, monitoring, emissions reduction plan and control strategies, etc.

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Grafe	Erik	Earthjustice	80222	13	SOURCES IN SUPPORT OF AUDUBON ALASKA ET AL.'S COMMENTS ON THE DRAFT COASTAL PLAIN OIL AND GAS LEASING PROGRAM SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT Calverley, D. & K. L. Anderson, Phaseout Pathways for Fossil Fuel Production Within Paris-compliant Carbon Budgets, Tyndall Centre for Climate Change Research, Research Report (Mar. 11, 2022) Carbon Tracker, Unburnable Carbon: Ten Years On (June 23, 2022) Center for Biological Diversity et al., Letter to S. LaMarr, BLM, Re: Marsh Creek East seismic comments (Nov. 6, 2020) Center for Biological Diversity et al., Letter to S. Sweet, BLM, Re. Scoping Comments on the Coastal Plain Oil and Gas Leasing Program Supplemental Environmental Impact Statement (Oct. 4, 2021) Earthjustice et al., Letter to S. Rice, BLM, Re: Assessment of Greenhouse Gas Emissions Significance in the Willow Master Development Plan Draft Supplemental Environmental Impact Statement (August 29, 2022) Erickson, P. M. et al., Carbon lock-in from fossil fuel supply infrastructure, Stockholm Environment Institute, Discussion Brief Fisch-Romito, V. et al., Systematic map of the literature on carbon lock-in induced by long-lived capital, 16 ENVIRONMENTAL RESEARCH LETTERS 053004 (2021) Green, F. & R. Denniss, Cutting with both arms of the scissors: the economic and political case for restrictive supply-side climate policies, 150 CLIMATE CHANGE 73 (2018) Hasselman, J. & P. Erickson, NEPA Review of Fossil Fuels Projects-Principles for Applying a "Climate Test" for New Production and Infrastructure International Institute for Sustainable Development, Navigating Energy Transitions: Mapping the road to 1.5°C (2022) Intergovernmental Panel on Climate Change (IPCC), Summary for Policymakers In: Climate Change 2023: Synthesis Report, Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2023) IPCC, Technical Summary In: Climate Change 2022, Mitigation of Climate Change, Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2022) International Energy Agency (IEA), Press Release, Pathway to critical and formidable goal of net-zero emissions by 2050 is narrow but brings huge benefits, according to IEA special report (May 18, 2021), IEA, World Energy Outlook 2022 (rev. Nov. 2022) Kühne, K. et al., "Carbon Bombs" -Mapping key fossil fuel projects, 166 ENERGY POLICY 112950 (2022) Lazarus, M. et al., Supply-side climate policy: the road less taken, Stockholm Environmental Institute, Working Paper 2015-13 (2015) Paul, M. & L. Moe, An Economist's Case for Restrictive Supply Side Policies: Ten Policies to Manage the Fossil Fuel Transition (Mar. 2023) Prest, B. C., Inflation Reduction Act Can Achieve Emissions Reductions Even with Oil and Gas Provisions, Resources for the Future (Aug. 15, 2022) Prest, B. C., Partners, Not Rivals: The Power of Parallel Supply-Side and Demand- Side Climate Policy, Resources for the Future, Report 22-06 (Apr. 2022) Prest, B. C., Supply-Side Reforms to Oil and Gas Production on Federal Lands: Modeling the Implications for Climate Emissions, Revenues, and Production Shifts, Working Paper 20-16 (rev. Dec. 2021) Rempel, A. & J. Gupta, Equitable, effective, and feasible approaches for a prospective fossil fuel transition, WILEY INTERDISCIPLINARY REVIEWS: CLIMATE CHANGE 13: e756 (2022) Tong, D. et al., Committed emissions from existing energy infrastructure jeopardize 1.5 °C climate target, 572 NATURE 373 (Aug. 15, 2019) Trout, K. et al., Existing fossil fuel extraction would warm the world beyond 1.5°C, 17(6) ENVIRONMENTAL RESEARCH LETTERS 064010 (May 2022) U.S. Department of the Interior, National Petroleum Reserve - Alaska, Oil and Gas Lease Sale 2019, Detailed Statement of the Sale, Ex. I (2019) UN Environment Programme (UNEP), Emissions Gap Report 2022 (2022) UNEP et al., UN-convened Net-Zero Asset Owner Alliance, Call to Action to Private Market Asset Managers (Nov. 2022) U.S. Climate Action Network, The US Fair Share: Towards a USCAN Working Consensus (2020) U.S. Fish and Wildlife Service (USFWS), Stock Assessment Report for Polar Bear (Ursus maritimus): Southern Beaufort Sea Stock (June 24, 2021) USFWS Regional Director - Alaska Region, Memorandum to BLM Project Manager, Re: Recommendations for No Leasing areas to create an 800,000 acre alternative in the 2018 Draft Environmental Impact Statement (DEIS) for the Coastal Plain Oil and Gas Leasing Program for the Arctic National Wildlife Refuge, Alaska (Apr. 8, 2019) Welsby, D. et al., Unextractable fossil fuels in a 1.5 °C world, 597 NATURE 230 (Sept. 9, 2021)	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.
Grafe	Erik	Earthjustice	80241	1	Attached are additional sources in support of Audubon Alaska et al.'s comments on the Draft Coastal Plain Oil and Gas Leasing Program Supplemental Environmental Impact Statement. See submission ID CoastalPlainDraftSEIS-1-500449674 for the comments and other sources.	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.
Grafe	Erik	Earthjustice	80253	1	Attached is one additional source in support of Audubon Alaska et al.'s comments on the Draft Coastal Plain Oil and Gas Leasing Program Supplemental Environmental Impact Statement.	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Wardlow	Cyndi	The Wildlife Society- Alaska Chapter	80261	2	At the request of Congress, the National Research Council (NRC) of the National Academy of Sciences evaluated the cumulative environmental effects of oil and gas activities on Alaska's North Slope and published a report in 2003.(3) Led by Dr. Gordon Orians, University of Washington, this report was prepared by a panel of prominent scientists following an extensive review of the literature and consultations with experts. It remains the best, most comprehensive synthesis of the effects of oil development on wildlife and the landscape of Arctic Alaska. Among the report's "major findings" (chapter 11) are the following: (3) National Research Council. Cumulative environmental effects of oil and gas activities on Alaska's North Slope. National Academies Press, 2003. - Three-dimensional seismic surveys require a high spatial density of trails. "Seismic exploration can damage vegetation and cause erosion, especially along stream banks." The effects of roads, pads, pipelines, and other infrastructure extend beyond the physical footprint itself and distances at which impacts occur vary according to the environmental component affected. "Effects on hydrology, vegetation, and animal populations occur at distances up to several kilometers..." - "Roads have had effects as far-reaching and complex as any physical component of the North Slope oil fields." - Denning polar bears are among the animals that "have been affected by industrial activities on the North Slope." - Readily available food supplies in the oil fields attract higher-than-normal densities of predators, which then prey on birds and their eggs and young. The reproductive success rate of some bird species in the developed parts of oil fields "has been reduced to the extent that it is insufficient to balance mortality." The spread of industrial activity, especially to the east where the coastal plain is narrower than elsewhere [i.e., the Arctic Refuge], "would likely result in reductions in reproductive success" for caribou. The NRC stated that "The effects of North Slope industrial development on the physical and biotic environments and on the human societies that live there have accumulated despite considerable efforts by the petroleum industry and regulatory agencies to minimize them... Continued expansion is certain to exacerbate some existing effects and to generate new ones..." Based on limited knowledge and understanding of the cumulative effects of oil and gas exploration and development on Alaska's North Slope, and the difficulty of accurately predicting the timing or extent of potential development scenarios, it is challenging to quantitatively predict the long-term, cumulative effects on the wildlife and ecosystem processes of the Arctic Refuge's 1002 Area. Thus, it is unlikely that a mitigation plan could be developed with any degree of certainty. We believe it is prudent to understand these effects more fully before risking leasing and development of other, more sensitive areas. The NRC report identified a list of gaps in current knowledge regarding effects of oil and gas development on wildlife. Studies of wildlife and vegetation on the 1002 Area of the Arctic Refuge during past decades have provided considerable baseline information on structure and function of an arctic tundra ecosystem that has been relatively undisturbed by human activities. Few arctic areas have baseline data as extensive as the 1002 Area. There are considerable scientific and cultural values in maintaining undisturbed arctic regions where effects of long-term global changes can be identified and distinguished from localized human influence. This is particularly the case today where climate change is accelerating four times faster in the Arctic than the rest of the plant.(4) (4) Rantanen, M., Karpechko, A.Y., Lipponen, A. et al. The Arctic has warmed nearly four times faster than the globe since 1979. Commun Earth Environ 3, 168 (2022). https://doi.org/10.1038/s43247-022-00498-3	The NRC 2003 report has been incorporated into resource analyses both as relevant context for baseline conditions as well as potential impacts on resources, including seismic considerations and impacts on wildlife, to name a few.
Wardlow	Cyndi	The Wildlife Society- Alaska Chapter	80261	6	The draft SEIS should outline an explicit plan to acquire more comprehensive baseline information for the coastal plain of the Arctic Refuge. The draft SEIS draws on incomplete and old baseline data. This inadequacy should be addressed with additional surveys, monitoring, research, and synthesis. Specific priorities include: analyzing detailed caribou movements and habitat use; assessing population dynamics and habitat use for the Southern Beaufort Sea subpopulation of polar bears; updating wetlands inventories and bird surveys; and predicting how these populations will respond to petroleum exploration and development in the narrow landscape of the coastal plain, how they will respond to accelerating climate change, and the interaction of these two forces. These analyses are needed not only to meet the legal requirements of NEPA but are necessary to predict potential cumulative impacts to Refuge resources and to develop an adequate research and monitoring plan for the Refuge coastal plain.	Additional surveys and studies would be completed by lessees during project-specific activities, some of which are required per the lease stipulations and ROPs.
Jorgenson	Karen	-	80272	12	Overall, citations in this document are very minimal. References in uploaded file. References: Creed, I. F., Bergström, A.-K., Trick, C. G., Grimm, N. B., Hessen, D. O., Karlsson, J., et al. (2018). Global change-driven effects on dissolved organic matter composition: Implications for food webs of northern lakes. Global Change Biology, 24(8), 3692-3714. https://doi.org/10.1111/gcb.14129 Cozzetto, K., McKnight, D., Nylen, T., & Fountain, A. (2006). Experimental investigations into processes controlling stream and hyporheic temperatures, Fryxell Basin, Antarctica. Advances in Water Resources, 29(2), 130-153. https://doi.org/10.1016/j.advwatres.2005.04.012 Fabris, L., Rolick, R. L., Kurylyk, B. L., & Carey, S. K. (2020). Characterization of contrasting flow and thermal regimes in two adjacent subarctic alpine headwaters in Northwest Canada. Hydrological Processes, 34, 3252-3270. https://doi.org/10.1002/hyp.13786 Kendrick, M. R., Huryn, A. D., Bowden, W. B., Deegan, L. A., Findlay, R. H., Hershey, A. E., ... & Schuett, E. B. (2018). Linking permafrost thaw to shifting biogeochemistry and food web resources in an arctic river. Global Change Biology, 24(12), 5738-5750. King, T. V., Neilson, B. T., Overbeck, L. D., & Kane, D. L. (2016). Water temperature controls in low arctic rivers. Water Resources Research, 52, 4358-4376. https://doi.org/10.1002/2015WR017965 Sjöberg, Y., Jan, A., Painter, S. L., Coon, E. T., Carey, M. P., O'Donnell, J. A., & Koch, J. C. (2021). Permafrost promotes shallow groundwater flow and warmer headwater streams. Water Resources Research, 57(2), e2020WR027463. Yang, D., Liu, B., & Ye, B. (2005). Stream temperature changes over Lena River Basin in Siberia. Geophysical Research Letters, 32, L05401. https://doi.org/10.1029/2004GL021568	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	15	The Committee Report provides further explanation about the purpose and mandate for the ANWR Leasing Program. The Supplemental Environmental Impact Statement for the ANWR Leasing Program. H.R. Rep. 115-466 (Dec. 15, 2017) (in Legislative History to P.L. 115-97).(10) (10) https://www.congress.gov/115/crpt/hrpt466/CRPT-115hrpt466.pdf	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.

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Lemke	Deana	Porcupine Caribou Management Board	80334	8	Additionally, the PCMB emphasizes that mitigation and management processes in general should continually be informed by the latest scientific information and by active collaboration among lease owners, BLM, US Fish and Wildlife Services, and the PCTC. Lease owners should expect to be accountable and should, in good faith and with transparency, be committed to demonstrating the effectiveness of mitigations and a willingness to adjust them as necessary. As an authority on technical research and monitoring on the PCH, we wish to ensure that the PCTC has direct and meaningful engagement in overarching management of all activities that may impact the herd. Impact assessments should only rely on mitigation that has been demonstrated to be effective and should be developed for the PCH in a manner that ensures learning and adjustment of mitigative practices. This is critical since all recommended mitigation to date comes from Prudhoe Bay and satellite oil and gas developments and is based on interactions and observations of the Central Arctic Herd (CAH). Yet most of these mitigations have not been proven effective despite 30 years of data collection. Knowledge gathered from this data collection is largely unavailable to PCMA Parties, including the PCMB, although recent work by Severson et al. (in press) (1) shows that commonly held views have not stood up to further scrutiny. We note that many ecological attributes of the CAH are much different from the PCH, and mitigations, even when proven for that environment, may not prove to be sufficient for the PCH. As a result, we encourage protection of calving and post-calving ranges used with low to moderate frequency at this time (i.e., using a much lower frequency threshold than 40% to define the calving and post-calving ranges) through spatial avoidance of these ranges. Using existing climate models that describe future conditions, we encourage avoidance of projected calving and post-calving ranges to the extent possible as well. (Severson et al. 2021).(2) (1) John P. Severson, Timothy C. Vosburgh, Heather E. Johnson. October 2023. Effects of vehicle traffic on space use and road crossings of caribou in the Arctic. (2) John P. Severson, Heather E. Johnson, Stephen M. Arthur, William B. Leacock, Michael J. Suitor. May 2021. Spring phenology drives range shifts in a migratory Arctic	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.
Lemke	Deana	Porcupine Caribou Management Board	80334	9	The PCMB concurs with the findings of Russell and Gunn in the 2019 report entitled Vulnerability analysis of the Porcupine Caribou Herd to potential development of the 1002 lands in the Arctic National Wildlife Refuge, Alaska, which highlights the significant sensitivity of the PCH to any disturbance in the calving and post-calving grounds. The impact assessment within the SEIS does not adequately consider the quantitative evidence offered by this report, disqualifying the only quantitative and objective impact assessment available for the herd. The PCH impact assessment also ignores the significant new science available on effects and impacts to migratory caribou from development (e.g., Johnson et al. 2020, Boulanger et al 2021)(3), although some of it is described in good detail in the SEIS itself, just to be ignored in the impact assessment. (3) Heather E. Johnson, Trevor S. Golden, Layne G. Adams, David D. Gustine, Elizabeth A. Lenar. December 2019. Caribou Use of Habitat Near Energy Development in Arctic Alaska. John Boulanger, Kim G. Poole, Anne Gunn, Jan Adamczewski, Jack Wierzbowski, 2021. Estimation of trends in zone of influence of mine sites on barren-ground caribou populations in the Northwest Territories, Canada, using new methods.	New data and references that were suggested or provided by commenters were reviewed and included as appropriate. The most recent and relevant analysis for near-field air quality impacts of oil and gas developments on the North Slope is the Willow Master Development Plan Final SEIS and ROD. There is considerable uncertainty around the specific features of a future development project in the program area, the modeling is based on BLM's best judgment on the potential distribution of development and infrastructure as well as appropriate bounding analysis of the potential emissions from the program area. If and when specific individual projects are developed in the program area, they would go through their own NEPA assessment. In addition, as noted in ROP 6 (Chapter 2 of the Draft SEIS), project-specific terms and conditions required prior to authorizing any future oil and gas activity in the program area would be determined as part of site-specific NEPA analyses and would include one or more of the following: air modeling (of emissions and source parameters) to analyze direct, indirect, and cumulative impacts, monitoring, emissions reduction plan and control strategies, etc.
Lemke	Deana	Porcupine Caribou Management Board	80334	10	Therefore, we reiterate the PCMB's position that as much of the herd's range in Alaska as possible should be protected, similar to the protection designated to areas in Canada that are adjacent to the Arctic National Wildlife Refuge. To that end, the ideal scenario would be ensuring there is no development in the refuge because it is critical habitat for the PCH. Future climate scenarios prepared by Severson et al., (2021) (4) demonstrate this need is even greater as we expect more use of critical calving and post-calving areas in the proposed oil and gas leasing area to be used in the future. Where unproven mitigation measures are being considered we advocate for avoidance as a primary tool to conserve the PCH. (4) John P. Severson, Heather E. Johnson, Stephen M. Arthur, William B. Leacock, Michael J. Suitor. May 2021. Spring phenology drives range shifts in a migratory Arctic ungulate with key implications for the future.	Prohibiting or avoiding development within the Coastal Plain would not comply with Section 20001(C)(3) of Section 20001(c)(1) of PL 115-97, which requires the development of an oil and gas program. The provided literature has been reviewed and incorporated where relevant.

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Not Provided	Not Provided	-	80337	1	I am concerned that the 3D seismic activity is understated in the SEIS. I could not find mention of the impacts to hydrologic function by the compression of trails left in the tundra and described in Raynolds et al. (2020). Further, though the document acknowledges that these surveys may impair or kill fish and denned bears not detected by surveys, the only term attributed to impacts was "disturbance", not "injury". Disturbance is a vague and mild term, and I feel it misrepresents significant impacts to individual animals. It is also stated that effects to caribou from seismic surveys in winter are negligible because they do not currently use these areas during this time (under current climate conditions), but the hydrologic impacts from the tracks could ultimately affect the surface substrate for travel. For all these reasons, I oppose the alternatives that would allow the surveys to continue across the entire project area; it should be limited to active leases. I had heard that there were delays to the implementation of seismic surveys in recent years but assume this has begun, yet I could not find this documented here.	Appendix C details the different types of seismic exploration that are analyzed in the SEIS. The area in which seismic exploration would be allowed varies by alternative, and is analyzed accordingly in Chapter 3. Table G-2 has been revised to note the potential for geological and geophysical surveys, to include seismic exploration. The SEIS has been updated to include additional discussion of seismic exploration, where appropriate. Alternative D2 was designed provide for protection of key resources, including polar bears, caribou, and vegetation and wetlands, aufeis, etc. It does so by prohibiting leasing and seismic survey activities and otherwise limiting oil and gas activities in areas of heightened importance and by incorporating more stringent lease stipulations and ROPs that would serve to minimize impacts to said resources. Use and mitigation plans would be required of lessees, operators, and/or contractors prior to commencement of any exploration or development activities. Potential impacts on vegetation and wetlands from seismic operations are prevented or mitigated through ROP 11, 12, and 15 (See Table 2-3).
Dann	Julian	-	80390	2	One of the things that shows kind of some of the inadequacy of how seismic exploration gets done is that the current status in the EIS is that you require nine inches of snow and three inches on top of tussocks. As has been shown in research papers, including Parr, et al., 2020, snow drifts in the refuge are separated by large areas of scour. There are large areas that do not have adequate snow cover, and the refuge requires an average of nine inches.	New data and references that were suggested or provided by commenters were reviewed and included as appropriate. Snow depth is based on best available information and used to protect resources.
Dann	Julian	-	80390	3	Nine inches of snow or three inches on top of the tussocks is not enough to protect tundra. It's not enough to protect landscapes. You've shown -- I mean, there are many research papers that show that vegetation and permafrost are permanently damaged from the impact of seismic exploration. Three-dimensional seismic exploration has not been done in the Arctic Refuge, and it's -- what three- dimensional seismic exploration means is that these vibroseis trucks are moving across every few hundred meters across the entire lease area, or in the case of Alternative B, across the entire area. That is a huge area that is being covered by these vehicles.	Comment noted.
Warren	Julianne	-	80402	1	With climate change, I would recommend also, in terms of indigenous knowledge, the Arctic Indigenous Climate Summit Report of 2019. Many elders and other scientific experts testified repeatedly about the effects of climate change, which are already making adaptation stressful, and so there's just layer upon layer of reasons, prudential and moral, to go with Alternative A, which is the only option that guarantees the other four values, plus the fact that this place has always been Gwich'in and other Alaska Native land.	New data and references that were suggested or provided by commenters were reviewed and included as appropriate.
Tackett	Clayton	-	80420	1	We need to have this information about the lifecycles of our animals so that any animal that intersects with this animal's lifecycle is affected by every other animal's lifecycle so that when we do these scientific studies, we can understand how this animal lives and how it lives through its whole lifecycle and it interacts with these other animals.	The SEIS includes consideration of impacts on animal lifecycles in the Biological Resources sections.
Warren	Julianne	-	80458	1	and the SEIS and other all along the way have failed to take into account indigenous and Gwich'in and Iñupiaq and expertise and science. I would refer people to the Arctic Indigenous Climate Summit report from June 2019, where a gathering of Gwich'in, and other indigenous, most mostly the people there, hunters and elders and people who know the land better than anyone, came together, and I heard them over and over without exception, talking about how climate change is causing stress on animals and plants and on people's relationships with them. And so there is real reason to protect that and option A is the only guarantee of that.	The Final SEIS has been updated to include traditional knowledge provided during the public comment period and suplmented through review of current literature. The noted report has been reviewed and incorporated where relevant
Flint	Alison	The Wilderness Society	80125	10	Mapping Impacts to Caribou Habitat We also wish to highlight and reinforce the importance of the full Coastal Plain for caribou habitat - something that the 2020 Leasing Program and EIS failed to properly account for. First, as depicted in the following "Narrow Margin" map (Map 1), the geography of the Brooks Range creates a natural bottleneck in the Arctic Refuge, where the Coastal Plain and foothills are much narrower than in the central and western Arctic. Thus, development of the already-constrained Coastal Plain would leave little or no room for the Porcupine Caribou Herd and other species to shift, as has been observed with Central Arctic Herd calving. Map 1: narrow geography of Arctic Refuge Coastal Plain	Map edit or new map request unclear, no chages made to caribou distribution maps.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Flint	Alison	The Wilderness Society	80125	11	Second, given the inadequacies of the caribou distribution data presented in the 2020 Leasing Program EIS, TWS digitized historic records of caribou calving and post-calving extents stretching back to the 1960s.(21) The resulting maps, shown below and using our bids-eye view of the Coastal Plain, demonstrate the importance of the full Coastal Plain for caribou during their sensitive calving (Map 2) and post-calving (Map 3) periods (Map 4 combines calving and post-calving data). The agencies must rigorously consider the full extent of space use by caribou in the SEIS and design alternatives and mitigation measures accordingly. This is especially critical given recent research that indicates use of the Coastal Plain by calving and post-calving caribou is likely to increase as climate conditions continue to shift. (22) Map 2: calving areas of Porcupine and Central Arctic caribou herds 21 See Section V(l) & Appendix B of Trustees et al. DEIS comments (Mar. 13, 2019) (resubmitted with Trustees et al. joint technical comments). 22 Severson, J.P., Johnson, H.E., Arthur, S.M., Leacock, W.B., Sutor, M.J. 2021. Spring phenology drives range shifts in a migratory Arctic ungulate with key implications for the future. Global Change Biology 27, 4546-4563. Map 3: post-calving and insect-relief areas of the Porcupine and Central Arctic caribou herds Map 4: combined calving, post-calving, and insect-relief areas used by the Porcupine and Central Arctic caribou herds	The caribou distribution maps are based on best available information, which has been updated for the Final SEIS.
Freitas	Benjamin	World Wildlife Fund	79957	38	Research estimating the impacts to onshore polar bears from simulated oil spills along the 1002 Area coastline, currently in preparation with the journal Biological Conservation, simulated oil spills originating from pipelines along the coast of the 1002 area. Preliminary results demonstrate that a short (6-day) spill could expose dozens of polar bears per week to lethal and sub-lethal levels of oil. In the simulations, oil moved quickly and could affect communities in northern Alaska.(77) The rapid distribution of oil indicates challenging conditions for oil spill mitigation. (77) Atwood, Todd. United States Research Report [Conference presentation]. 2023 Polar Bear Range States Meeting of the Parties, October 30 - November 2 2023, online. https://polarbearagreement.org/about-us/meetings .	Section 3.3.5, Marine Mammals addresses potential impacts on polar bears, including impacts from spills. The reference provided has been reviewed and incorporated as relevant.

U.3.7 Biological Resources

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Allen	Mark	Government of Canada	79200	46	Given the importance of the Coastal Plain to the success of the Porcupine Caribou herd, the shared Polar Bear population, the migratory bird species, and the Indigenous People who depend on these species for their culture and food security, Canada encourages the U.S. to consider the additional scientific data and analysis included in these remarks to ensure conservation of these species and their habitat. Sincerely, Mark Allen Director General North America Bureau See figures in comment letter. Annex 1: Map of important sea duck habitat sites in the project area and along the Marine Vessel Transportation route. Modified from the Atlas of Sea Duck Key Habitat Sites in North America (Bowman et al 2022). shapefiles available from: https://seaduckjv.org/science-resources/sea-duck-key-habitat-sites-atlas/ Annex 2: National Parks and other protected areas in the northern portion of the range of the Porcupine Caribou Herd in Canada. *ISR boundary refers to the Inuvialuit Settlement Region boundary. SMA denotes a Special Management Area. The area labelled "Order in Council Area withdrawn from development" is protected under the Inuvialuit Final Agreement vis-à-vis a legislative Order in Council issued by the Yukon Government and is the important summer range mentioned in the text for the Porcupine Caribou herd.	Sea duck habitat sites have been added to Map 3-30, Critical Habitat Along the Potential Marine Vessel Transportation Route.
Smith	Kathleen	-	22648	1	I oppose all oil and gas drilling in the Arctic Refuge. Lasting protection for the refuge will only come if President Biden and the U.S. Congress repeal the "Tax Act" provision that opened the Refuge to oil and gas leasing; and then pass permanent Wilderness designation to protect the entire 19.2 million-acre Arctic Refuge. I thank the Biden administration for canceling the existing leases in the Arctic Refuge. The Draft SEIS fails to explain all that would be lost by opening the Arctic Refuge to oil leasing and development. Oil leasing and development would destroy the wild quality of both the coastal plain and adjacent designated Wilderness lands in the Arctic Refuge. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine caribou herd. The Draft SEIS is inconsistent in protecting polar bear denning habitat by protecting some habitat while leaving other habitat vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden Bay area. There is not enough protection for onshore denning habitat for polar bears. The Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program in the coastal plain -- a sacred place to the Gwich'in Nation. The Draft SEIS does not grant protections strong enough to protect the Porcupine caribou herd, required by the Gwich'in Nation for cultural survival and food security. The Draft SEIS does not adequately address how Caribou habitat in the Arctic Refuge will change as the climate changes in the coming decades. The Draft SEIS "no surface occupancy" (NSO), stipulations are broad and undefined, and loopholes would allow for infrastructure and development. NSO stipulations meant to provide protections for leased tracts, must be well-defined and unwaivable in the Draft SEIS.	The Final SEIS range of alternatives has been updated based on public input requesting protection for key resources and new updated information. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears. Climate change and how it may impact specific resources, including caribou, is discussed in Chapter 3 of the SEIS.
Schoen	John		45576	20	Petroleum development within the coastal plain of the Arctic Refuge will undoubtedly change this national wildlife refuge significantly. Exploration and development will impact natural ecological processes and also impact many populations of fish and wildlife and the people who depend on those resources. It will be imperative that a plan for long-term research and monitoring of fish and wildlife and their habitats be developed, funded, and implemented in the Arctic Refuge coastal plain. The issue of a scientific baseline for comparative studies must be addressed.	Protections in the Draft SEIS include requirements for an adaptive management plan that would require continuing monitoring of caribou (lease stipulation 6 for Alternative D; Draft SEIS Section 2.3.5, Lease Stipulations and Required Operating Procedures).
Long	Becky	-	50615	1	These are special ecosystems that nourish lush vegetation and support bird species and their nesting habitat. The springs at the east end of the Sadlerochits which I believe are in the coastal plain are one of the largest perennial springs on the North Slope. Wintering areas for arctic char and arctic grayling. Moose browse the poplars and willows. Grizzlies, caribou, wolverines, and wolves commonly use the area. Ferns, sedges, and avens species that are found here are found nowhere else so far on the north slope.	Lease Stipulation 3 (Draft SEIS Section 2.3.5, Lease Stipulations and Required Operating Procedures) provides varying levels of protections for areas near springs.
Proescholdt	Kevin	Wilderness Watch	80104	12	The DSEIS fails to adequately analyze cumulative impacts on two other large mammals-polar bears and musk oxen. Climate change and oil and gas development on the North Slope are inadequately considered. These cumulative impacts could greatly imperil polar bears. Musk oxen are in steep decline and may move in and out of the Refuge.	Section 3.3.5, Marine Mammals addresses potential impacts on polar bears, including impacts from climate change and oil and gas development. Musk Oxen are similarly considered in Section 3.3.4. Terrestrial Mammals. Both sections have been updated as part of the Final SEIS.
Ward-Peter	Kayleen	-	80425	1	What are you guys doing to protect nesting grounds of all waterfowl? Also, what are you doing to protect the caribou birthing grounds? Both of these migrations are super important to Venetie, Fort Yukon, Arctic Village, and surrounding villages. What are you guys doing to protect these nesting and calving grounds? I grew up knowing that we need to protect our land, our life, and our animals, to have respect for the life that we have and that others have fought for for a long time. Our waterfowl are so important, which it came up to asking geese and ducks to be a part of the record with the Gwich'in names to be added on to protect these animals as well, to find a way to protect them.	Protections designed to protect nesting and migrant/staging birds and caribou calving areas are discussed in the Draft SEIS (see Draft SEIS, Section 2.3.5 - Lease Stipulations and Required Operating Procedures).

U.3.8 Birds

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Miller	Pamela A	Arctic Audubon Society	80339	13	The final SEIS should include reference to a recent study of bird use in the Prudhoe Bay oil fields which found that nest survival decreased significantly nearer high-use infrastructure for shorebirds, passerines and waterfowl.(9) (9) McGuire, RL, M Robards and J.R. Liebezeit. Patterns in avian reproduction in the Prudhoe Bay Oilfield, Alaska 2003-2019. Journal of Avian Biology. https://www.researchgate.net/publication/370186258_Patterns_in_avian_reproduction_in_the_Prudhoe_Bay_Oilfield_Alaska_2003-2019/link/64d423a3d3e680065aa3cd20/download	McGuire et al. (2023) is referenced seven times in the SEIS when discussing changes in the numbers of birds and reductions in nest survival on the Arctic Coastal Plain of northern Alaska. The text references McGuire et al. (2023) when noting the significantly reduced nest survival of shorebirds, passerines, and waterfowl in areas closer to high-use infrastructure in the Prudhoe Bay area (see Section 3.3.3 of the SEIS).
Miller	Pamela A	Arctic Audubon Society	80339	6	There are only maps for a few bird species (Spectacled Eider, Map 3-22; Comon Eider, Map 3-23; King Eider, Map 3-24; Surf Scoter, Map 3-25; Long-Tailed Duck, Map 3-26; Yellow-billed loon, Map 3-27; Snow Goose Staging, Map 3-28) out of the 157 bird species which the DSEIS states use the Coastal Plain. The Spectacled Eider map is obtuse (what does higher to lower density mean?). The other 6 maps fail to explain what use is being depicted (what do the dots mean?) or show the overlaps of habitats such as the coastal lagoons at sufficient level of detail to understand such reliance by staging or migratory birds.	Bird species' data depicted in maps represent the best available baseline data for these seven species. Adequate distribution and abundance data for the other species for mapping is not available. The legend for each of the seven existing maps has been updated to clarify the data being depicted. The spectacled eider map now includes the statement, "Mean spectacled eider density (birds/km²) from bird observations collected during the ACP aerial breeding pair waterbird survey, 1992–2016. Birds occurred in low densities in the program area." Maps 3-23 through 3-28 now include a description of the metric represented (e.g., number of birds, density, etc.) or the life stage during which the data were collected (e.g., pre-nesting, nesting, staging, etc.).
Miller	Pamela A	Arctic Audubon Society	80339	8	DSEIS also fails to show adequate baseline data on snow goose staging activities because Map 3-28 of habitat use is dated (1982-2004) and needs to also include more recent snow goose fall staging area use information; such information is critical for analysis of impacts to this species.	The data presented in Map 3-29 represents the best available baseline data for snow goose staging activities. USFWS attempted snow goose surveys in 2022 and 2023, but they were either unsuccessful or incomplete due to weather. More birds may now utilize the western part of the Coastal Plain, but this needs to be confirmed by future surveys.
Schoen	John	-	45576	16	A cumulative effects analysis of the impacts of petroleum exploration and development on a sample of loons, waterfowl, shorebirds, and song birds using the coastal plain of the refuge. Specific attention should be given to WatchList species.	A cumulative effects analysis for birds is included in the SEIS, Section 3.3.3, Birds - Cumulative Impacts. The Audubon Alaska's WatchLists (declining bird populations and vulnerable species) are included in the SEIS by reference (see Warnock 2017a and 2017b) in Appendix K.
Allen	Mark	Government of Canada	79200	30	Canada acknowledges the significant work that went into developing semi-quantitative estimates of habitat impacts to birds under various development scenarios. The cross-walking exercise to compare categorical habitat-use rankings for species in the program area is useful as a first analysis for an area with limited data/information. The addition of the information in tables J-16, J-18 and J-20 outlining the estimated number of waterbirds and larids across the project Alternatives is a helpful addition to make direct comparisons of Alternatives. However, there are some significant limitations that are not addressed or well explained in the additional analysis. First, there are no estimates of variation for the data in tables J-16, J-18 and J-20 (e.g., standard errors or confidence intervals). Estimates of variation around the mean/median data would be helpful to evaluate the potential range/magnitude of number of breeding birds that may be impacted by the development in each scenario. While population-level effects for the species outlined in the table are unlikely, the variance estimates can identify a range of effects on breeding birds in the development area.	The tables have been updated with the median and range in number of waterbirds and larids that could be affected by a hypothetical development in the program area. Revisions have been made in the applicable tables in Appendix K and the associated SEIS text in Section 3.3.3.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Allen	Mark	Government of Canada	79200	31	Second, the data in tables J-16, J-18 and J-20 for breeding waterfowl/waterbirds are an underestimate of potential effects on some species. As indicated in Canada's previous comments, the greatest risk is likely to staging or molting flightless waterfowl which have limited ability to avoid or depart an area. For example, breeding Long-tailed Ducks are sparsely distributed through the project and the estimated number of birds range from 0.7 - 12.2 depending on the scenario outlined in tables J-16, J-18 and J-20, but during molt and migration it has been estimated that up to 7% (70,000 birds) of the continental population of Long-tailed Ducks will use coastal lagoons along Alaska's North Slope (Bowman et. al. 9). The seasonal variation in risk to any species should be emphasized, as it is dynamic and more nuanced than the data presented in the tables. 9 Bowman, T. D., J. L. Churchill, C. Lepage, S. S. Badzinski, S. G. Gilliland, N. McLellan, and E. Silverman. 2022. Atlas of sea duck key habitat sites in North America. Sea Duck Joint Venture March 2022.	The sentence, "The density polygons derived by Amundson et al. (2019) are limited to the areas within the USFWS ACP Aerial Breeding Waterfowl Survey area, which does not cover all portions of the program area" has been changed in the Final SEIS to include "such as marine habitats." The sentence, "the survey transects for the ACP Aerial Breeding Waterfowl Survey are placed in areas of suitable habitat for waterfowl, and in the program area, they are generally located closer to the coast where there are more lacustrine waterbodies," is now followed by the following sentences in the Final SEIS: "Although these aerial surveys yield the best available data to estimate breeding waterfowl densities across the program area, their use may underestimate potential impacts on species that cluster in large numbers in the post-breeding period. The aerial surveys analyzed in Amundson et al. (2019) are designed for typically widely dispersed breeding birds in terrestrial areas, not staging or molting waterfowl in coastal habitats. Should oil development activities occur in nearshore waters, the number of affected waterbirds of species that congregate in large numbers in coastal lagoons in the program area during the post-breeding period (e.g., long-tailed ducks) will likely be higher than our estimates." The available information and the level of detail included is sufficient for this SEIS. Should a project with on-the-ground activity be proposed, including activities in the lagoon ecosystem during the open-water season, additional environmental impact analysis (e.g., the NEPA process), and likely additional baseline field studies, would be required before any activity would be authorized.
Allen	Mark	Government of Canada	79200	32	Third, the data presented are only for waterfowl/waterbirds and larids that can be detected from aerial breeding surveys for waterfowl. But the species most likely to be impacted according to the habitat crosswalk analysis are shorebirds and landbirds occupying moist tundra habitat. Shorebirds (p. 3-157), as a group, are experiencing significant declines: of the 23 species considered to be "regular occupants" of the proposed project area, 11 (48%) are listed as species of conservation concern by at least one of the federal wildlife management agencies in the footnotes of table J-9. While estimated impacts to common bird species are likely to be minimal at the population levels, there is likely some additional risk to species that are already experiencing population declines or habitat loss due to climate change. The SEIS states that up to 44% of the species on the Arctic Coastal Plan are listed as species of conservation concern and that the combination of development impacts and climate change may result in extinction during the 85-year scope of analysis (p. 3-161). Additional protections/mitigations for these species should be considered. For example, (p. 3-176) studies in Prudhoe Bay of waterfowl behaviour showed no/minimal effects of vessel traffic on geese/swans, except for Brant a species already undergoing population decline.	The SEIS relies on the best available information on shorebirds and landbirds and includes a variety of protective measures intended to prevent or minimize adverse impacts to wildlife from exploration and development in the program area (see Section 2.3.5 - Lease Stipulations and Required Operating Procedures). Some of the lease stipulations (LS) and ROPs intended to mitigate impacts to birds and their habitats would be in place for any lease holders and include: -LS 9 (Coastal Area) would protect nearshore marine waters, lagoons, barrier islands, and coastlines for wildlife habitat. -ROP 9 would help maintain natural hydrologic regimes around lakes and ponds (bird habitat). -ROP 25 would mitigate human-caused changes in predator populations on ground-nesting birds. -ROP 26 would reduce the risk of collision between migrating birds and oil and gas facilities during low-light conditions. -ROP 28 is intended to minimize the impacts to bird species from direct interaction with oil and gas facilities (e.g., aboveground utility lines, communications towers). -ROP 30 would restrict the loss of nesting habitat for cliff-nesting raptors. -ROP 31 would prevent or minimize the loss of raptors from electrocution. -ROP 32 provides additional protection for nesting Steller's and spectacled eiders. -ROP 41 would minimize impacts to stream bank habitat. -ROP 45 would require operators to minimize the loss of individuals and habitat for bird species designated as sensitive by BLM Alaska.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Allen	Mark	Government of Canada	79200	34	A recently-released resource, the Atlas of Sea Duck Key Habitat Sites in North America ¹⁰ , should be used in the Final SEIS to highlight critically important habitats/areas for sea ducks and other coastal waterfowl/waterbirds. See Annex 1. One key site falls within the project area and an additional eight sites fall along the Potential Marine Vessel Transportation Route. ¹⁰ Bowman, T. D., J. L. Churchill, C. Lepage, S. S. Badzinski, S. G. Gilliland, N. McLellan, and E. Silverman. 2022. Atlas of sea duck key habitat sites in North America. Sea Duck Joint Venture March 2022. https://seaduckjv.org/science-resources/sea-duck-key-habitat-sites-atlas/ . Map viewer: https://www.arcgis.com/apps/mapviewer/index.html?url=https://services.arcgis.com/QVENGdaPbd4LUkLV/ArcGIS/rest/services/SeaDuckKeySites_FINAL_22020316/FeatureServer/0&source=sd These areas should be included as part of the Final SEIS analysis and on Map 3-29 - Critical Habitat Along the potential Marine Vessel Transportation Route.	The text has been revised to include the Atlas of Sea Duck Key Habitat Sites Key Site 19: Beaufort Sea Coastal Lagoons, Alaska, part of which is within the program areas.
Allen	Mark	Government of Canada	79200	35	Key Sites were identified based on the following minimum criteria: 1a. The area supports at least 5% of the continental population of sea duck species OR 1b. The area supports, or has recently supported a total of 20,000 sea ducks (any species) during any season, AND 2. The density of sea ducks within the area is at least 10 birds per square kilometer. Key sites within project area: Key Site 19: Beaufort Sea Coastal Lagoons, Alaska (https://seaduckjv.org/atlas/pdf/narrative_site19_508.pdf). These coastal lagoons host large numbers of molting waterfowl including Long-tailed Ducks (~7% of the continental population), Common Eiders, Surf Scoters, King Eiders, Black and White-winged Scoters, and Spectacled and Steller's Eider.	Map 3-30 of the SEIS has been updated to show Sea Duck Venture sites that the MTR crosses. Corresponding text has been added to Section 3.3.3.
Allen	Mark	Government of Canada	79200	36	Key Sites within the Marine Vessel Transportation Route: Key Site 18: Ledyard Bay, Alaska (https://seaduckjv.org/atlas/pdf/narrative_site18_508.pdf) Critical staging habitat for all four eider species, and likely all female Spectacled Eiders breeding on the Arctic Coastal Plain molt in the area. May also provide foraging and loafing habitat for eiders, Long-tailed Ducks, White-winged Scoters and Red-breasted Mergansers breeding nearby on the Coastal Plain. Key Site 17: Northern Bering Sea, Alaska (https://seaduckjv.org/atlas/pdf/narrative_site17_508.pdf) Supports the global population of Spectacled Eiders during winter (from September to May) and may also support other wintering sea ducks including Common and King Eiders and Long-tailed Ducks. Key Site 16: Norton Sound, Alaska (https://seaduckjv.org/atlas/pdf/narrative_site16_508.pdf) Critical molting habitat for Spectacled Eiders, almost all Alaska breeding females use the area to molt before moving to wintering areas in the Bearing Sea. Also supports COEI, STEI, BLSC, SUSC, LTDU Key Site 15: Yukon-Kuskokwim Delta, Alaska (https://seaduckjv.org/atlas/pdf/narrative_site15_508.pdf) Breeding area for Spectacled Eiders, and Pacific Common Eiders and to a lesser extent Long-tailed Ducks. Key Site 14: Kuskokwim Shoals, Alaska (https://seaduckjv.org/atlas/pdf/narrative_site14_508.pdf) Critical marine staging site for Steller's Eider and hosts tens of thousands of staging Pacific Common Eiders and King Eiders Key Site 13: Nushagak and Kvichak Bays, Alaska (https://seaduckjv.org/atlas/pdf/narrative_site13_508.pdf) Heavily used during spring migration and staging for King Eiders, Black Scoters, Long-tailed Ducks and Steller's Eiders, may be used during winter as a feeding site depending on ice conditions. Key Site 12: Seal Islands, Alaska (https://seaduckjv.org/atlas/pdf/narrative_site12_508.pdf) Important molding and staging area for Steller's Eiders. Key Site 11: Nelson Lagoon, Alaska (https://seaduckjv.org/atlas/pdf/narrative_site11_508.pdf) High concentrations of wintering, staging and molting Steller's Eiders and Black Scoters with fewer (<1500/species) Common Eider, King Eider, and surf Scoter. Eelgrass beds are important for Emperor Geese and shorebird species. Key Site 10: Izembek Lagoon, Alaska (https://seaduckjv.org/atlas/pdf/narrative_site10_508.pdf) Important staging and molting area for a significant proportion of the western Steller's Eider population use the area. Several-thousand Black Scoters, Long-tailed Ducks, Red-breasted Mergansers and Harlequin Ducks also use the site during fall and winter. Eelgrass beds are also important habitat for Brant. Key Site 9: Kodiak Archipelago, Alaska (https://seaduckjv.org/atlas/pdf/narrative_site9_508.pdf) High density overwintering site for multiple species of sea duck	The Seaduck Joint Venture Key sites that the MTR crosses (Beaufort Lagoons) or is in proximity to have been included in Appendix B (Affected Environment) and Chapter 3 (Direct and Indirect Impacts).
Brisson	Brook	Trustees for Alaska	80131	256	New Science. A recent study in Avian Biology, found that nest survival decreased significantly near high-use oil and gas infrastructure in the Prudhoe Bay oil fields of Arctic Alaska for shorebirds, passerines, and waterfowl.(685) The researchers analyzed 17 years of data and attribute the cumulative impacts of oil field activities, including noise, dust, vehicle traffic, air pollution, and increased predators associated with infrastructure, to this decline. This paper's findings should be incorporated into the final SEIS. (685) See: McGuire, Rebecca & Robards, Martin & Liebezeit, Joseph. (2023). Patterns in avian reproduction in the Prudhoe Bay Oilfield, Alaska, 2003-2019. Journal of Avian Biology. 2023. 10.1111/jav.03075.	McGuire et al. (2023) is referenced seven times in the SEIS when discussing changes in the numbers of birds and reductions in nest survival on the Arctic Coastal Plain. The text references McGuire et al. (2023) when noting the significantly reduced nest survival of shorebirds, passerines, and waterfowl in areas closer to high-use infrastructure in the Prudhoe Bay area (see Section 3.3.3). The Cumulative Effects text has been revised to also include this citation.
Brisson	Brook	Trustees for Alaska	80131	257	Ice Roads and Pads. The draft SEIS correctly identifies the development and use of ice roads and ice pads as an impact to birds.(686) However, the draft SEIS fails to specifically disclose that because of their density, ice roads and ice pads tend to melt later than naturally occurring snow and ice. This delayed melting has the potential to impact the physical environment through altered hydrologic processes, but also the biotic community of what is below the ice pad or ice road. These specific impacts to physical and biological conditions, and their cascading impacts to bird habitats and life cycles, should be disclosed in the final SEIS. (686) DSEIS at 3-168 and 3-180.	The text was revised as follows: "Ice roads and ice pads are clearly denser than the surrounding snow covered tundra, and this results in a longer melting time in spring. This delayed melt may make these areas unavailable for nesting birds, which often initiate nests well before complete snowmelt, and will also shorten the growing season for the underlying vegetation, which may make these areas less attractive as foraging habitat for birds during the summer following ice infrastructure construction."

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	258	Artificial Light. The draft SEIS fails to consider the impact of artificial light on birds. Artificial light, particularly during the Arctic's spring and fall, has the potential to displace birds from certain habitats, disorient and compromise their movement, and contribute to collisions.(687) The impacts of artificial light should be discussed in greater detail in the final SEIS. (687) See: Adams, C.A., Fernández-Juricic, E., Bayne, E.M. et al. Effects of artificial light on bird movement and distribution: a systematic map. Environ Evid 10, 37 (2021). https://doi.org/10.1186/s13750-021-00246-8 .	The effects of artificial light on birds are included in Chapter 3 of the SEIS, under "Construction: Bird Collisions with Vehicles, Aircraft, and Infrastructure" (Section 3.3.3). The impacts of artificial light are mitigated by ROP 26, which reads as follows: "Objective: Reduce risk of collision between birds and infrastructure during low light conditions. Requirement/Standard: All structures would be designed to direct artificial exterior lighting, from August 1 to October 31, inward and downward, rather than upward and outward, unless otherwise required by the Federal Aviation Administration."
Brisson	Brook	Trustees for Alaska	80131	259	Shrubification (the expansion of shrubs across the Arctic). Within the climate change section, BLM and FWS correctly disclose how altered climatic conditions will continue to lead to the increase of shrubs in the study area. However, how these changes may impact certain species of birds should be discussed in greater detail. For example, research on Gyrfalcon (Falco rusticolus), which has historically specialized on ptarmigan, has demonstrated a shift in prey because of increased shrubs on once open tundra.(688) Moreover, how projected impacts from climate changes, such as shrubification, may be compounded by potential impacts from an oil and gas program should also be disclosed within the cumulative impacts section of the final SEIS. (688) See: Bryce W. Robinson, Travis L. Booms, Marc J. Bechard, and David L. Anderson "Dietary Plasticity in a Specialist Predator, the Gyrfalcon (Falco rusticolus): New Insights into Diet During Brood Rearing," Journal of Raptor Research 53(2), 115-126, (9 May 2019). https://doi.org/10.3356/JRR-15-58 .	The section "Climate Change" (Appendix B) describes shrubification in detail and states that different species will be impacted differently. Shrub- and tree-nesting birds (passerines, such as redpolls, sparrows, and thrushes) may become more numerous, and tundra nesting birds (longspurs, savannah sparrows, shorebirds, geese, and eiders) may decline. The text was edited as follows: "Climate change (see Climate Change section) will continue to affect birds throughout the program area and could alter the rate or degree of potential cumulative impacts. The impacts of climate change along with variability in the response by birds (e.g., plasticity in the life-history of individual species [see Robinson et al. 2019]), will introduce substantial uncertainty in predicting the demographic trends of species. The large magnitude of climate change effects, accompanied by increases in already high climate variability in the Arctic, are likely to overshadow the smaller magnitude impacts of oil development, making it difficult to differentiate among direct, indirect, and cumulative impacts."
Brisson	Brook	Trustees for Alaska	80131	260	Global Importance. Birds from across the planet utilize the Coastal Plain to complete their lifecycles. As migratory science continues to develop and global conservation efforts take more of a full life cycle approach to bird protections, the national, hemispheric, and global importance of the Coastal Plain should be more fully disclosed. While there are general references to where some long-distance migrants travel and overwinter, and discussion of the global population percentages of certain species that utilize the study area, (689) the draft SEIS fails to meaningfully discuss the uniqueness of the Coastal Plain. For example, the fact that Bluethroat, Yellow Wagtail, Dunlin, Wandering Tattler, Arctic Tern, and American Golden-Lover travel from the far corners of the world to utilize the Coastal Plain is an extraordinary attribute of this landscape. This distinctiveness should be elevated within the final SEIS. (689) DSEIS at 3-157.	SEIS Appendix B, Section B.3.3, Birds (Affected Environment), describes the coastal plain bird habitat and many of the birds that occur in the area. The section describes how many birds from around the world use the program area as part of their annual migration. Additionally, Appendix K provides tables of birds that occur in the program area and along the likely marine vessel transit route. All of the bird species listed in the comments are included in Appendix K. The Coastal Plain is important to birds, especially the lagoon systems that are used by large numbers of waterfowl during the post-breeding molting period. Other areas to the west in northern Alaska, which typically support larger breeding populations of all the species mentioned in the comment, are also important.
Brisson	Brook	Trustees for Alaska	80131	261	Moreover, the final SEIS should be explicit about how changes to avian habitat in other parts of the world, such as East Asia, will make intact Arctic nesting grounds even more important. As migratory birds continue to face lost habitat and dangers during migration and overwintering, ensuring the health and functionality of extremely high-quality nesting habitat is necessary for the conservation of populations and species of birds. The final SEIS should elevate the ever-increasing ecological value of the Coastal Plain.	SEIS Appendix B, Section B.3.3, Birds (Affected Environment), describes the Coastal Plain bird habitat and many of the birds that occur in the area. The section describes how many birds from around the world use the Program Area for breeding and staging for migration. It also notes that "the [Arctic Refuge Coastal Plain] and adjacent marine waters are recognized as important bird areas by the American Bird Conservancy, Audubon, and Birdlife International." It is beyond the scope of this SEIS to evaluate bird habitats globally and discuss current and future global threats. However, the text is revised to include, "as migratory birds continue to face habitat changes and loss along migratory routes and wintering grounds (see Alaska Shorebird Group 2019 and Boreal Partners in Flight 2021 for detailed descriptions of global population threats), the availability high-quality breeding habitat such as the ARCP is even more important for these species."

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Von Seggern	Dan	Washington State Attorney General's Office	80273	9	Some evidence suggests that the essentially undisturbed habitat in the Arctic Refuge Coastal Plain may compensate for degraded migratory bird habitat or disturbances in other North Slope areas, much of which has previously been opened for oil and gas development.(95) For example, nesting success for ground-nesting birds, including black brant, has been found to be "unusually low" in oil fields, possibly due to increased predation.(96) Modeling suggests that black brant populations may not be sustainable at such low success rates, and that the oilfield populations may represent "sink" populations that are sustained by in-migration from nearby areas.(97) The National Research Council (NRC) report predicted that "as industrial activity spreads into new areas, the amount of sink habitat [where a population is sustained by in-migration from other areas rather than by sustainable reproduction rates] will increase."(98) (95) National Research Council (2003), Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope. Washington, DC: The National Academies Press. https://doi.org/10.17226/10639 ("NRC 2003"), at 120. (96) NRC 2003 at 120. (97) Id. at 121. (98) Id. at 123. By compensating for the sink habitat in other parts of the North Slope, the Arctic Refuge may play a critical role in maintaining populations of these birds and the Leasing Program's effect on their populations might be greater than expected based simply on the degree of habitat disruption predicted. NRC further noted that sink habitat effects cannot be determined through population counts alone, underscoring the need to more fully understand population dynamics on the North Slope.(99) (99) Id. If the Program Area is in fact acting to compensate for degraded habitat or disturbances in other North Slope areas, any impacts on migratory birds from a Lease Program could have outsized impacts on their populations. This emphasizes the importance of further study of how Program-related activities would affect birds, as well as demonstrating that any Lease Program alternative is likely to have significant environmental impacts.	The SEIS was edited to include: "If the currently undisturbed habitat across the program area supports source populations of birds for developed areas to the west on the broader ACP, then the effects of the proposed action may be greater than predicted. Although overall densities do not appear to have decreased in industrial areas, sink habitat effects cannot be determined through population counts alone (NRC 2003)."
Von Seggern	Dan	Washington State Attorney General's Office	80273	10	While the 2023 DSEIS includes new information from several more recent studies of migratory bird distribution and/or abundance,(100),(101) significant uncertainty remains about how and where birds use the Coastal Plain and how they would be affected by leasing. Because of this uncertainty, it is difficult to assess how the Lease Program would impact migratory bird populations. The DSEIS notes that "detailed distribution and abundance data for the program area are lacking for many species."(102) A 2018 report by the USFWS stated that "[t]he Canning River Delta on the western edge of the Refuge Coastal Plain is the only site within the 1002 Area for which contemporary, fine spatial scale breeding bird data are available."(103) The same report stated that "[c]onservation of birds in association with exploration, development, and production of oil and gas resources in the 1002 Area of the Coastal Plain of the Refuge" would require information regarding abundance and distribution of birds and their patterns of seasonal movement, and identification of important areas for feeding, nesting, and molting. USFWS also reported that data was needed on impacts of development and disturbance to birds relative to the pre-development baseline.(104) (100) See Goudie, et al. (2020), Common Eider (Somateria mollissima), version 1.0., In Birds of the World (S. M. Billerman, Editor), Cornell Lab of Ornithology, https://doi.org/10.2173/bow.comeid.01 ; McGuire, R. L. (2023), Patterns in avian reproduction in the Prudhoe Bay Oilfield, Alaska, 2003-2019, Journal of Avian Biology: e03075, https://doi.org/10.1111/jav.03075 ; McGuire, et al. (2019), Population trends of king and common eiders from spring migration counts at Point Barrow, Alaska between 1994 and 2016, Polar Biology 42: 2065-2074; Rizzolo, D.J. et al. (2022), Population Status and Habitat Use of Red-throated Loons in the Western Arctic National Wildlife Refuge: Data to Mitigate the Potential Impacts of Resource Development; Uher-Koch, B.D., et al. (2021), Red-throated loon (Gavia stellata) use of nearshore marine habitats-Results from a 2019 pilot study in northern Alaska, Ecosystems Mission Area, Alaska Science Center, https://pubs.usgs.gov/of/2021/1029/ofr20211029.pdf . (101) 2023 DSEIS at 3-156; Id. at 3-157; Id. at 3-180. (102) 2023 DSEIS at 3-150. (103) USFWS and BLM, Rapid Response Resource Assessments and Select References for the 1002 Area of the Arctic National Wildlife Refuge in anticipation of an Oil and Gas Exploration, Leasing and Development Program per the Tax Act of 2017 Title II Sec 2001 (Feb. 16, 2018) (Rapid Response Resource Assessments). (104) Id.	The SEIS analyses uses the best available information. The available information, including the references cited in the comment. The available information and the level of detail included is sufficient for this SEIS. Should a project with on-the-ground activity be proposed, additional environmental impact analysis (e.g., the NEPA process) and permitting would be required. Additional baseline field studies may also be required before any activity would be authorized.
Von Seggern	Dan	Washington State Attorney General's Office	80273	12	The DSEIS estimates that a relatively small number of birds would be affected, and that the impacts of the Lease Program were "not anticipated to reduce populations or regional abundance" of migratory birds. The one exception noted was for snow geese, which might be displaced from their staging habitat in Alaska by air traffic or other disturbance.(120) This conclusion, however, should be viewed in the context of the incomplete information available on use of the Arctic Refuge by migratory birds generally.	The SEIS analyses uses the best available information. The available information, including the references cited in the comment. The available information and the level of detail included is sufficient for this SEIS. Should a project with on-the-ground activity be proposed, additional environmental impact analysis (e.g., the NEPA process) and permitting would be required. Additional baseline field studies may also be required before any activity would be authorized.
Mantell	Jace	-	80284	2	2. The impact on migratory birds including nesting habitat, food sources and population health is insufficiently addressed and therefore protections are insufficient. Birds literally fly thousands of miles to reproduce in a very limited area. Many already face huge challenges in loss of habitat during their annual migrations and wintering areas, and loss of summer reproductive habitat could be devastating.	Impacts to migratory birds and their habitat are described in SEIS Section 3.3.3, Birds - Impacts Common to All Action Alternatives. Protections for birds from potential future development are described in Section 2.3.5 - Lease Stipulations and Required Operating Procedures. The SEIS analyses uses the best available information to describe the affected environment for birds. The level of detail included is sufficient for this SEIS. Should a project with on-the-ground activity be proposed, additional environmental impact analysis (e.g., NEPA) and likely additional baseline field studies as well, would be required before any activity would be authorized.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	60	Topic Birds, Direct and Indirect Impacts, Birds Section # 3.3.3 Page # 3-184 SEIS Text To evaluate roughly how many individual birds could be affected by a hypothetical development project under Alternative B, we estimated the numbers of waterbirds and larids that could occur within the maximum of 31,600 acres that could be affected. Comment In several SEIS resource sections, including the Birds section, the analyses are taken to a degree that does not seem reasonable for the BLM's action of issuing of a lease, which in itself does not constitute an irreversible/irretrievable commitment of resources. Analyses are often loaded with various assumptions and models to attempt to achieve a reasonable analysis of impacts for a hypothetical project, which ends up resulting in numerous data outputs (e.g., species numbers) that are extremely onerous for the reader to follow and comprehend. For example, the birds' analysis attempts to estimate impacts all the way out to the number of individual birds (by species) that could be potentially affected, all without a specific project or location to analyze. In the context of a lease issuance and knowing that additional NEPA review would be conducted to address an actual project that would disclose more realistic impacts, it is difficult to understand why the BLM's analyses go to the level they do with so much uncertainty at this stage of simply issuing a lease.	To facilitate the most informed decision on the SEIS alternatives, the SEIS authors were requested to quantify potential impacts by action alternative whenever feasible. The level of detail on potential impacts to birds was requested by numerous reviewers of the original Draft EIS for Coastal Plain oil and gas leasing in 2019. As noted by the commenter, this SEIS will not authorize on-the-ground activity that may disturb resources such as birds. As noted in SEIS Section 1.2, Overview: "This SEIS evaluates which lands to offer to lease and what terms and conditions to apply to those leases; it does not in itself authorize on-the ground exploration or development. ... Issuance of an oil and gas lease does not have any direct effects on the environment, since it does not authorize drilling or any other ground-disturbing activities; however, a lease does grant the lessee certain rights to drill for and extract oil and gas, subject to reasonable regulation, including applicable laws, terms, conditions, and stipulations of the lease. BLM has developed a scalable hypothetical development scenario consistent with those leases, in a good faith effort to identify indirect effects that are not known at this time but nonetheless could be considered 'reasonably foreseeable'." No changes to text.
Miller	Pamela A	Arctic Audubon Society	80339	3	The names of all bird species using the Arctic Refuge Coastal Plain should be listed and addressed at least in a table within the text of the DSEIS, not tucked back into Appendices (see Appendix Tables J-9, J-10 Canadian Wildlife Species at Risk).	As noted by the commenter, the SEIS includes a list of the bird species known to occur in the program area. In Appendix B, Section B.3.3, Birds (Affected Environment) notes that a complete list of those 157 bird species is available in Appendix K. The bird species list table is 9 pages long, which would be cumbersome in the text of the SEIS. A decision was made to keep the text focused on the analysis of potential impacts to those species groups that are likely to be most affected. Readers who are interested in the full set of species present on the ARCP, including status in the area, abundance ranking, and conservation listing, can readily search electronically for the full bird list in the PDF file of appendices.
Miller	Pamela A	Arctic Audubon Society	80339	4	More information about impacts to habitat use and populations of resident species such as American Dipper and Rock and Willow Ptarmigan should be provided.	The SEIS uses the best available information regarding the use of the program area by American dipper, rock ptarmigan, and willow ptarmigan (3 of the 157 birds known to use the program area). This information is described in Appendix B, Section B.3.3 - Birds, and Appendix K.3 - Birds. The level of provided information is sufficient for this SEIS. Should a project with on-the-ground activity be proposed, additional environmental impact analysis (e.g., the NEPA process) and likely additional baseline field studiesl, would be required before any activity would be authorized.
Miller	Pamela A	Arctic Audubon Society	80339	5	The Birds section (3.3.3) downplays the number of bird species and their numbers using the Coastal Plain, and how bird habitats would be especially vulnerable in all Alternatives. Even Alt D, offering the least acreage in the DSEIS, would lease about 70% of the Coastal Plain shoreline, including most of the lagoons and bays which support molting long-tail ducks in fall and other staging ducks, geese, phalaropes. It fails to substantively analyze effects to birds from ports, causeways, and vessel traffic especially spills.	The SEIS acknowledges that 157 bird species have been recorded in the program area and focuses on the potential impacts most likely to occur to birds from a potential oil and gas project in the area. It also notes use of the coastal lagoons in the program area by waterbirds (including large numbers of long-tailed ducks) and shorebirds during the breeding and post-breeding periods. Potential impacts to birds and bird habitats are described in Section 3.3.3, Birds - Impacts Common to All Action Alternatives, including from spills and other accidental releases in coastal waters. Measures intended to protect birds and their habitat, including the nearshore marine environment, are described in SEIS Section 2.3.5 - Lease Stipulations and Required Operating Procedures. These protections and how they would help mitigate impacts to birds and their habitat are described throughout Section 3.3.3, Birds - Direct and Indirect Impacts.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Miller	Pamela A	Arctic Audubon Society	80339	7	The discussion of waterbird use of coastal lagoons (DSEIS p. 3-155) is superficial and fails to incorporate extensive studies and mapped information from the 1980's "1002 baseline studies."(8) These baseline studies are also a very relevant information source which was neglected for birds more broadly. (8) US Fish & Wildlife Service, 1986, Arctic National Wildlife Refuge Coastal Plain Resource Assessment, Final Report, Baseline Study of the Fish, Wildlife, and Their Habitats, Sec. 1002C, ANILCA. Vols I & II, 695 pp. See also Section 1002c Initial and Update Reports from 1981 to 1987. https://www.arlis.org/docs/vol1/FWS/ANWRCPRA/Baseline/index.html	The text was revised to include: "Additionally, earlier aerial surveys conducted in the 1980s showed that the greatest concentrations of waterbirds in the Arctic Refuge were in the coastal lagoon ecosystem, which provide important staging and molting habitats for waterfowl and shorebirds (USFWS 1986)."
Miller	Pamela A	Arctic Audubon Society	80339	12	We remain concerned about the major potential impacts of the full range of oil and gas facilities and operations to birds over many, many decades, including roads, pipelines, seismic surveys, aircraft flights with potential to disrupt birds, and massive gravel mines, water withdrawals, docks and port sites with vessel traffic. No meaningful geographic overlay of bird habitats and use with potential cumulative infrastructure and industrial activities was carried out, a major deficiency.	The SEIS uses the best available information in its analyses. As noted in Section 1.2, Overview, "The BLM cannot ascertain the precise extent of the effects of granting [leasing] rights until it receives and reviews potential future site-specific proposals for exploration and development. ...the BLM has developed a scalable hypothetical development scenario consistent with those leases, in a good faith effort to identify indirect effects that are not known at this time but nonetheless could be considered 'reasonably foreseeable' (40 Code of Federal Regulations [CFR] 1508.8(b))" Maps 3-22 through 3-28 (SEIS Appendix A - Maps and Figures) provide information on the occurrence of seven bird species in the program area. Assuming lease(s) are purchased, an overlay of hypothetical development(s) on bird habitats in the program area will be meaningless at this time with so much uncertainty regarding any possible future project plans.
Miller	Pamela A	Arctic Audubon Society	80339	14	The DSEIS downplays potential effects of 3-D seismic surveys on birds when it asserts, "Degradation of avian habitats by winter surface activities would be minimized under all action alternatives by ROP 11, which SEIS standards for winter tundra travel" (p. 3-166). Yet the DEIS fails to analyze that such 3-D surveys take place not merely at an exploration "phase" but throughout the life of oil field development and production as well. Table B-3, Estimated hypothetical Development time frames (p. B-11) similarly only lists 3-D seismic surveys being conducted in the time frame within 1-3 years after a lease sale, yet new 3-D surveys are still frequently conducted on State of Alaska and NPR-A lands even during the production phase and decades after lease sales.	Seismic exploration activity would have the same impacts on birds and their habitats (as described in Draft SEIS Section 3.3.3 - Birds), regardless of which project phase the activity would occur in. While it is anticipated that 3-D seismic would occur within 1-3 years of leasing, this timeframe is an estimate of how quickly such activities may occur following leasing. The RFD (Appendix C) has been updated to note that activities may occur throughout the different stages of exploration and production.
Miller	Pamela A	Arctic Audubon Society	80339	15	While the DSEIS (p. 3-189) asserts "Alternative D could reduce tundra damage by prohibiting the use of the same ice road route each year and requiring offSEIS to avoid multi-year use, there is no evidence of feasibility of this practice for such rights-of-ways, nor whether it could merely spread-out tundra damage across a wider expanse of tundra.	As noted under ROP 11 (SEIS Section 2.3.5 - Lease Stipulations and Required Operating Procedures), the intention of avoiding the same routes repeatedly for ice roads is to reduce the possibility of excessive soil and tundra compaction, which may require offsetting successive year ice road locations. Using offsets or relocating ice roads reduces the overall magnitude of impacts and may prevent impacts from becoming permanent.
Miller	Pamela A	Arctic Audubon Society	80339	16	Other assertions of the effectiveness of stipulations and ROPS neglect residual impacts to birds for the extensive habitats where they do not apply. For example, "Under Alternative D, several lease stipulations and ROPs would increase protection for birds that use riparian habitats. Gravel mines only would be permitted in setback areas near rivers and streams that do not support resident, anadromous, or endemic fish populations (Lease Stipulation 1). This would provide modest protection for waterbirds and larids that depend on riverine habitats for food during breeding, staging, and migration by limiting habitat loss and modification and decreasing disturbance from mining activities (blasting, transport, and fugitive dust)." (DSEIS p. 3-189) This statement obscures the fact that the DSEIS fails to map or address the extent of impacts to nesting bird habitats along the riverine, stream, habitats which are not defined or known to not support fish, and their extensive Dryas terraces, gravel bars, and riparian willow habitats used for nesting by birds, nor does it map such habitats along the fish-bearing waters.	The SEIS uses the best available information in its analysis of likely impacts to birds and their habitats. The available information and the level of detail included is sufficient for this SEIS. Should a project with on-the-ground activity be proposed, additional environmental impact analysis (e.g., the NEPA process) and likely additional baseline field studies as well, would be required before any activity would be authorized. These additional baseline studies will likely require the mapping of wetlands and bird habitats within a proposed project area and buffer zone.
Miller	Pamela A	Arctic Audubon Society	80339	17	Table J-11 "Conservation Listings of Bird Species along Marine Vessel Transit Route Between Dutch Harbor and the program Area" and Map 3-29 depicts "Critical habitat for Steller's Eider, Spectacled Eider and other species." However, the SDEIS fails to address all shipping impacts. Of major concern is the cumulative effects of oil transportation through the Trans-Alaska Pipeline System to the Valdez tanker terminal, and thence to lower 48 and international locations. There remain lasting effects of North Slope oil from the Exxon Valdez tanker disaster. As all the infrastructure gets older, the increased risk of major spills could increase. Furthermore, in the event of a well blowout from a site right along the Beaufort Sea coast, there could be major open water spills with resulting harm to birds.	The condition and future operations of the Trans-Alaska Pipeline System (TAPS) and marine shipping of oil from the TAPS terminal in Valdez to locations outside of Alaska is beyond the scope of this SEIS. Such assessments are likely to be requested during the NEPA and permitting processes in the event that a lease(s) is purchased and an actual project is proposed. The potential impacts on birds of a large oil spill that reaches nearshore waters in and adjacent to the program area are discussed in the SEIS in Section 3.3.3.

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Miller	Pamela A	Arctic Audubon Society	80339	18	National Audubon Society's report, Survival by Degrees shows that all 16 species of Arctic Species it studied are highly vulnerable and Arctic tundra and boreal forest birds are the most in harms way. For example, under a 1.5% warming scenario, snowy owls across the Arctic Refuge Coastal Plain and North Slope are highly vulnerable with 53% of the owl's range projected to be lost.(11) Cumulative effects of climate change to migratory birds are inadequately addressed in the DSEIS. (11) https://www.audubon.org/field-guide/bird/snowy-owl#bird-climate-vulnerability Migratory birds travel to 6 continents, and therefore it is important to address the cumulative impacts from GHG emissions from Arctic Refuge Coastal Plain oil activities, infrastructure and consumption contribute to global climate change throughout birds' ranges... and the importance of keeping fossil fuels in the ground from not leasing, development, or extraction of this oil and that is burned elsewhere.	Impacts from climate change on birds and the expected changes in their habitats, including likely changes in the distribution of bird species groups in northern Alaska, are described in Appendix B, Section B.3.3, Birds - Climate Change. The cumulative impacts on birds and their habitats from climate change and industrial development are described in SEIS Section 3.3.3, Birds - Cumulative Impacts. Additionally, impacts to climate change from post-leasing activity are described in Section 3.2.1 - Climate and Meteorology - Local and Global Direct and Indirect Impacts. In response to another comment, edits to the cumulative impacts section on birds have been made to discuss variability in bird species responses to climate change in northern Alaska.
Miller	Pamela A.	-	80396	6	Birds are in big trouble across the U.S. A huge number of species, 367, are declining. All species that they studied in the Arctic, 16 species are suffering from climate change and are specially vulnerable. They're already vulnerable without adding more direct impacts from oil and gas development on the Coastal Plain from affecting their habitats through surface disturbance, permanent infrastructure, risks of spills, offshore development, and so on. I think, in terms of one other small thing I'll mention is just about snow geese. There's a map I'm very familiar with about snow geese. It's been a fact sheet for a long time. This talks about the snow goose populations through 2004. That makes me wonder, have there been snow goose studies since 2004 and how hard can it be to hire a staff for the refuge to study the birds and show the concentrated areas, have they changed. But they used the Canning River delta, as well as coastal areas in the middle part of the refuge, as well as areas that kind of overlap with the sensitive habitats of the Porcupine caribou herd for calving. The calving and post-calving area does overlap quite a bit with what's shown for the snow geese flocks. Snow geese may not be as vulnerable as they were in the '80s when their numbers were very low, but it is a shared international resource with Canada in terms of they have the breeding grounds and we have the staging area. So those geese come a long way on a detour just to go to this Coastal Plain area as a safe, quiet place before they fly south all the way to Saskatchewan in one fell swoop.	The SEIS uses the best available information in its analysis of likely impacts to birds and their habitats, including snow geese. Snow geese are discussed in Appendix B, Section B.3.3 - Birds, including in their own subsection, Snow Goose, where more recent studies are cited (e.g., USFWS 2015a; Burgess et al. 2017; Hupp et al. 2017; Pearce et al. 2018; Amundson et al. 2019). A survey was attempted in 2022, but inclement weather prevented its completion. The available information and the level of detail included is sufficient for this SEIS. Should a project with on-the-ground activity be proposed, additional environmental impact analysis (e.g., the NEPA process) and likely additional baseline field studies as well (possibly including studies of snow geese staging) would be required before any activity would be authorized.

U.3.9 Climate and Meteorology

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
LaRue	Jill	-	63463	1	Because the fragile Arctic warms faster than other regions it is especially vulnerable to climate change and is irreversibly damaged by gas and oil infrastructures and developments	Observed and projected trends in warming and other climate impacts in the Arctic, Alaska, and North Slope were discussed in Section 3.2.1, Climate and Meteorology, Affected Environment of the Draft SEIS.
Miller	Pamela A.	-	80396	7	But we need to do better and fully account for all the potential hydrocarbons that would be released to the atmosphere, as well as look at the kind of infrastructure that would be imposed in the Coastal Plain.	A detailed quantitative analysis of potential hydrocarbons released was performed in both Section 3.2.1 and 3.2.2 of the Draft SEIS. Emissions of methane and other GHGs were presented in Section 3.2.1, Climate and Meteorology, Direct and Indirect Impacts. Emissions of GHGs were quantified for oil development, production, transportation, processing, and downstream combustion under each action alternative. Emissions of hydrocarbons that are from oil production are presented in Section 3.2.2, Air Quality, Direct and Indirect Impacts, namely volatile organic compounds and commonly emitted hazardous air pollutants. The specific types of infrastructure that would be constructed are currently unknown. Subsequent post-lease activities would require NEPA analysis before occurring. At that time, a detailed list of structures and developments would be available for a proposed activity.
Holland	Bette	-	2486	1	we need to stop new fossil-fuel development in the areas of the Reserve that have already been auctioned off to the fossil-fuel industry. This should begin with a climate analysis to get a realistic measure of how extracting and burning this Arctic oil would worsen the climate crisis.	A detailed quantitative analysis of potential hydrocarbons released was performed in both Section 3.2.1 and 3.2.2 of the Draft SEIS. Emissions of methane and other GHGs were presented in Section 3.2.1, Climate and Meteorology, Direct and Indirect Impacts. Emissions of GHGs were quantified for oil development, production, transportation, processing, and downstream combustion under each action alternative. Emissions of hydrocarbons that are from oil production are presented in Section 3.2.2, Air Quality, Direct and Indirect Impacts, namely volatile organic compounds and commonly emitted hazardous air pollutants.
Keller	Megan	-	10871	1	I oppose the new lease for oil and gas drilling in the Arctic. I am an Alaskan resident and academic researcher of soil carbon cycling in Arctic and boreal ecosystems. The Arctic is quickly changing from a carbon sink to a carbon source as permafrosts continue to thaw, potentially releasing twice the amount of carbon that is already in the atmosphere. Please listen to academic and Indigenous Ecological Knowledge and keep the oil and gas in the ground. The surrounding Indigenous communities deserve to continue to exist as they have; however, allowing drilling threatens their way of life and other marginalized communities across the globe who are the first victims of climate change.	Permafrost thawing due to warming surface temperatures and the corresponding releases of GHG were discussed in Section 3.1.2, Affected Environment, of the Draft SEIS. Section 3.1.2 of the Final SEIS has been updated to include additional information on permafrost and carbon flux emissions in Alaska. The Final SEIS has been updated to incorporate additional Indigenous Knowledge from existing data sources as well as new information provided during the public comment period.
Macfarlane	Peter	-	18973	3	- The average global temperature is rising faster than at any rate determined in history; - The primary cause of this is the increased greenhouse effect, restricting long-wave radiation to space, due to emissions (largely carbon dioxide and methane) resulting from the extraction and combustion of fossil fuels; - The effect of this warming is to destabilise the atmosphere, and therefore the climate, resulting in ever more powerful storms, together with the human, economic and environmental damage that they wreak;	Observed and projected trends in average global temperatures and other climate change indicators were discussed in Section 3.2.1 of the Draft SEIS along with the role of anthropogenic emissions of carbon dioxide, methane, and other GHGs in climate change. The estimated monetary value of the global climate change impacts of the total net GHG emissions under each alternative was estimated using social cost of GHG (SC-GHG) metrics. The SC-GHG accounts for global climate impacts including but not limited to changes in property damage from increased flooding and other climate-related hazards, disruption of energy systems, risk of conflict, environmental migration, human health effects, net agricultural productivity, and the value of ecosystem services.
Yarnell	Ronald	All About Adventure	19299	2	The SEIS does not take into consideration the affects the changing climate will have on the rivers, the water resources, the migrating routes of the caribou, the denning habitats of the polar bear, the increased freeze and thaw cycles on the muskoxen that live on the coastal plain and Dall sheep that live in the mountains.	The effects of climate change on water resources are discussed in Chapter 3, Section 3.2.10, "Climate Change".
Yarnell	Ronald	All About Adventure	19299	4	Probably most important, the SEIS does not take into consideration the impacts oil leasing and its guarantee of developmental rights will have on the world's climate.	A detailed climate analysis was performed in Section 3.2.1 of the Draft SEIS. Emissions of GHGS were quantified for oil development and production activities as well as the downstream transportation, processing, and combustion of produced oil under each action alternative. Additionally, emissions from the change in foreign oil consumption due to oil production in the program area were estimated relative to the No Action Alternative. The estimated monetary value of the global climate change impacts of the total net GHG emissions under each alternative was estimated using social cost of GHG metrics. Moreover, the annual net emissions under each alternative were put in context through comparison to other emission sources that the public can more readily comprehend (e.g., number of homes' energy use for one year, gallons of gasoline consumed).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Kastel	Diane	-	20227	1	This MUST begin with a, climate, analysis to get a, realistic, measure of how extracting and burning this, Arctic, oil would worsen the climate crisis, as a, first, step toward aligning management of the "Reserve" with, federal, commitments to slash, greenhouse gas, emissions 50 percent by 2030!	A detailed climate analysis was performed in Section 3.2.1 of the Draft SEIS. Emissions of GHGS were quantified for oil development and production activities as well as the downstream transportation, processing, and combustion of produced oil under each action alternative. Additionally, emissions from the change in foreign oil consumption due to oil production in the program area were estimated relative to the No Action Alternative (Alternative A). The estimated monetary value of the global climate change impacts of the total net GHG emissions under each alternative was estimated using social cost of GHG metrics. Moreover, the annual net emissions under each alternative were put in context through comparison to other emission sources that the public can more readily comprehend (e.g., number of homes' energy use for one year, gallons of gasoline consumed).
Bright	Roselie	-	20475	4	The contributions of burning oil and gas [92] mined from the project will hasten global warming and cause more and worse storms [93-97], more and worse droughts [98], more and worse fires [98], more and worse inland and coastal floods [98], more and worse infectious diseases and other health problems [98], poorer quality food crops [99], and disrupted land [100] and marine ecologies [101-102]. As we are already experiencing, these have huge health and economic costs [98, 103-104].	The global climate change impacts of the total net GHG emissions due to burning of oil and gas from the program area under each alternative were estimated using social cost of GHG metrics. The SC-GHG estimates represent the monetary/economic value of global climate change impacts including but not limited to changes in property damage from increased flood risk from natural disasters, disruption of energy systems, risk of conflict, environmental migration, human health effects, net agricultural productivity, and the value of ecosystem services. In addition to the discussion on the effects of climate change in section 3.2.1 of the Draft SEIS, the impact of climate change on multiple resources in the program area is evaluated in resource sections for Vegetation and Wetlands, Fish and Aquatic Species, Birds, Terrestrial Mammals, and Marine Mammals.
Ryder	Miranda	-	22905	1	First, developing oil and gas leases in the Arctic would release large amounts of carbon into the atmosphere, worsening the global climate crisis. Expansion of fossil fuel extraction flies in the face of all current science on preserving the health of our planet and undermines your administrations important climate goals.	A detailed climate analysis was performed in Section 3.2.1 of the Draft SEIS. Emissions of GHGS were quantified for oil development and production activities as well as the downstream transportation, processing, and combustion of produced oil under each action alternative. Additionally, emissions from the change in foreign oil consumption due to oil production in the program area were estimated relative to the No Action Alternative (Alternative A). The estimated monetary value of the global climate change impacts of the total net GHG emissions under each alternative was estimated using social cost of GHG metrics.
James	William	-	22952	1	I strongly support the cancellation of these unlawful leases for the following key reasons. First, developing oil and gas leases in the Arctic would release large amounts of carbon into the atmosphere, worsening the global climate crisis. Expansion of fossil fuel extraction flies in the face of all current science on preserving the health of our planet and undermines your administrations important climate goals.	The impact of climate change on resources in the program area is evaluated in each resource section. A detailed GHG emissions analysis was performed in Section 3.2.1 of the Draft SEIS for projected oil development and production activities as well as the downstream transportation, processing, and combustion of produced oil under each action alternative. Additionally, emissions from the change in foreign oil consumption due to oil production in the program area were estimated relative to the No Action Alternative.
Chilcoat	Rose	-	23270	1	Developing oil and gas leases in the Arctic would release large amounts of carbon into the atmosphere, worsening the global climate crisis. Expansion of fossil fuel extraction flies in the face of all current science on preserving the health of our planet and undermines your administrations important climate goals.	For each action alternative, a detailed GHG emissions analysis was performed in Section 3.2.1 of the Draft SEIS for projected oil development and production activities as well as the downstream transportation, processing, and combustion of produced oil. The global climate change impacts of the total net GHG emissions under each alternative were estimated using the social cost of GHG metrics.
DiBenedetto	Jeff	-	23326	1	First, developing oil and gas leases in the Arctic would release large amounts of carbon into the atmosphere, worsening the global climate crisis. Expansion of fossil fuel extraction ignores current science about the effects of greenhouse gases on climate and the need to reduce greenhouse gas emissions to preserving the health of the planet's ecological and societal ecosystems and undermines the administrations important climate goals.	For each action alternative, a detailed GHG emissions analysis was performed in Section 3.2.1 of the Draft SEIS for projected oil development and production activities as well as the downstream transportation, processing, and combustion of produced oil. The global climate change impacts of the total net GHG emissions under each alternative were estimated using the social cost of GHG metrics. In addition to the discussion on the effects of climate change in section 3.2.1 of the Draft SEIS, the impact of climate change on multiple resources in the program area is evaluated in resource sections for Vegetation and Wetlands, Fish and Aquatic Species, Birds, Terrestrial Mammals, and Marine Mammals.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Witt	Rose	-	25014	1	First, developing oil and gas leases in the Arctic would release massive amounts of additional carbon, methane and other greenhouse gas pollution into our shared atmosphere, worsening an already out-of-control global Climate Emergency. Any expansion of fossil fuel extraction flies in the face of all current science intended to preserve the stability of planetary life-support systems that are essential for the health of people and all other life on Earth and both betrays President Bidens promises to American voters who elected him to serve as a "Climate President" and undermines his administrations important climate goals.	For each action alternative, a detailed GHG emissions analysis was performed in Section 3.2.1 of the Draft SEIS for projected oil development and production activities as well as the downstream transportation, processing, and combustion of produced oil. Additionally, emissions from the change in foreign oil consumption due to oil production in the program area were estimated relative to the No Action Alternative. The global climate change impacts of the total net GHG emissions under each alternative were estimated using the social cost of GHG metrics.
Naples	Jean	-	25931	4	The current environmental analysis of the Western Arctic, written in the previous administration, fails to study the impact oil development in the region would have on the climate and the nation's ability to rapidly reduce its reliance on fossil fuels to meet climate goals. I strongly urge the administration to please conduct a comprehensive analysis of the climate impacts of Western Arctic oil development, and to bring its management of the region in line with climate policy by expanding its proposed regulations to require limits on drilling on the millions of acres already leased to oil companies to protect the climate and the fragile resources of the region already under severe strain from climate change.	Observed and projected trends in warming and other climate impacts in the Arctic, Alaska (Western Arctic), and Alaska North Slope containing the program area were discussed in Section 3.2.1, Climate and Meteorology, Affected Environment of the Draft SEIS. A detailed GHG emissions analysis was performed in Section 3.2.1 of the Draft SEIS for projected oil development and production activities as well as the downstream transportation, processing, and combustion of produced oil under each action alternative. Additionally, emissions from the change in foreign oil consumption due to oil production in the program area were estimated relative to the No Action Alternative. The social cost of GHGs was evaluated to assess global climate impacts from the program area.
Ulloth	John	-	31246	1	Atmospheric disturbances caused by a warming Arctic cause wild swings in the jetstream, resulting in weather extremes across the continental U.S., including wildland fires that burn all year, excessive life-threatening 2heat, massive flooding, etc.	Current and future climate impacts in warming and other climate impacts in the Arctic, Arctic Alaska, and Alaska North Slope containing the program area were discussed in Section 3.2.1, Climate and Meteorology, Affected Environment of the Draft SEIS. Section 3.2.1., Environmental Consequences of the Draft SEIS also included an estimate of the social cost of GHG which represent the monetary/economic value of global climate change impacts, including impacts in the continental US, such as human health effects, changes in property damage from increased flood risk from natural disasters, disruption of energy systems, risk of conflict, environmental migration, net agricultural productivity, and the value of ecosystem services. Discussion of recent literature (Nature 609, 656 (2022) and references cited therein) on the potential link between arctic warming, the Jetstream, and extreme weather in the continental US has been added to section 3.2.1 of the Final SEIS.
Schoen	John	-	45576	18	Climate change: The scientific consensus is clear that human-caused climate change is rapidly occurring and that the Arctic is warming up to four times faster than temperate or tropical regions of the Earth. The combination of unprecedented warming in Arctic Alaska and declining sea ice will bring significant environmental changes to this region. In fact, many climate scientists believe we are at a tipping point in our ability to slow or halt the accelerated climate warming that is now occurring. The increased carbon emissions resulting from exploration, development, and extraction of oil and gas from the ground should be calculated and their effects evaluated in terms of their contribution to climate change. Combined with the additional stressors of wide-spread oil and gas development across Alaska's fragile tundra and wetland habitats, these changes will likely have significant and compounding impacts on wildlife and fish habitats and populations and the subsistence uses of these important resources across Alaska's North Slope. Without an adequate scientific understanding of the cumulative effects of development compounded by climate change, it is unlikely that mitigation of impacts to this complex ecosystem will be effective.	Observed and projected trends in warming and other climate impacts in the Arctic, Arctic Alaska, and Alaska North Slope containing the program area were discussed in Section 3.2.1, Climate and Meteorology, Affected Environment of the Draft SEIS. The Draft SEIS included evaluation of the No Action Alternative which would preclude oil production from the Coastal Plain. For each action alternative, a detailed carbon/GHG emissions analysis was performed in Section 3.2.1 of the Draft SEIS for projected oil and gas construction/development and production activities as well as the downstream transportation, processing, and combustion of produced oil. The global climate change effects of the total net GHG emissions under each alternative were estimated using the social cost of GHG metrics.
Schoen	John	-	45576	23	In addition, The Department of Interior should develop a comprehensive conservation strategy for the entire arctic coastal plain, including the Arctic Refuge, Central Arctic, and NPR-A. Finally, the increased carbon emissions resulting from exploration, development, and extraction of oil from the ground should be calculated and their effects evaluated in terms of their contribution to climate change.	For each action alternative, a detailed carbon/GHG emissions analysis was performed in Section 3.2.1 of the Draft SEIS for projected oil development and production activities as well as the downstream transportation, processing, and combustion of produced oil. The global climate change impacts of the total net GHG emissions under each alternative were estimated using the social cost of GHG metrics.
Schoen	John	-	45576	25	Finally, the impacts of global climate change have never been more definitive than what scientists have documented during the current year 2023. It is entirely unreasonable for the United States to consider developing a major new industrial oil and gas program on federal lands in the Arctic National Refuge. Such an action now would be irresponsible and further accelerate climate change at a critical tipping point, as well as erode the ecological integrity and biological diversity of our nation's Arctic Refuge.	Section 20001(c)(1) of PL 115-97 requires the establishment of an oil and gas program on the Coastal Plain. The potential impacts of this program on climate change are analyzed in Section 3.2.1 of the Final SEIS as well as in relevant resource sections.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Naples	Jean	-	66912	2	I am strongly opposed to all invasive and destructive oil and gas development in the Western Arctic. Such development would be incompatible with meeting urgently needed commitments to address the climate crisis. To demonstrate climate leadership and meet our commitments, the nation needs to move rapidly away from burning fossil fuels. There is no room for expansion, particularly in the Arctic, where oil would not come to market for years. The huge infrastructure build-out required would lock us into reliance on fossil fuels, while bringing further stress to a region feeling climate effects even more acutely than lower latitudes. I strongly urge the administration to take measures to bring its management of the Western Arctic in line with its commitment to address the climate crisis.	Section 20001(c)(1) of PL 115-97 requires the establishment of an oil and gas program on the Coastal Plain. The potential impacts of this program on climate change are analyzed in Section 3.2.1 of the Final SEIS as well as in relevant resource sections.
Not Provided	Not Provided	Institute for Policy Integrity at NYU School of Law	69351	1	BLM Should Recognize, and Address, that Its Net Emissions Figures Underestimate Climate Impacts Because They Fail to Account for Structural Changes in the Energy Sector To quantify the greenhouse gas emissions that would result from this lease sale, BLM performs what is known as a substitution analysis. But due to structural limitations of that analysis, BLM derives what is likely a substantial underestimate of the net greenhouse gas emissions. At a minimum, BLM should acknowledge that the greenhouse gas emissions resulting from this lease sale are likely higher than its quantitative analysis reports. BLM should also aim to correct these modeling limitations and can look for guidance to a recent analysis from the Bureau of Ocean Energy Management (BOEM).	Appendix G, Section G.2.1, Social Costs of GHG Emissions, has been updated for the Final SEIS. In the current analysis, the BLM applies the EPA Workbook, which uses the currently best available estimates of the SC-GHG for use in DOI decision-making and analysis as cited in the EPA's Final Rule of March 8, 2024, Fed. Reg 16820, 17018-20.
Not Provided	Not Provided	Institute for Policy Integrity at NYU School of Law	69351	4	For its substitution analysis, BLM used a model known as the BLM Energy Substitution Model (or EnergySub), which is based on BOEM's Market Simulation Model (or MarketSim).(11) As a result, BLM inherits a major limitation in MarketSim-namely, the model's "simplifying assumption that current regulations and consumption patterns will not change over the long term,"(12) which overlooks the likelihood of "new laws and policies" with potentially "significant implications for energy markets and substitutes in the coming decades."(13) Furthermore, even without new policies, "[t]echnological innovation" could "transform[] how energy will be produced and consumed" and thereby alter the historical energy-market dynamics on which EnergySub's and MarketSim's parameter values are based.(14) (11) Id. at R-1 ("Although EnergySub includes substantive updates to enable the model to simulate changes in onshore mineral development, it retains much of the overall structure and functionality of the MarketSim model."). (12) Id. at R-25. (13) Id. (14) See id. While BLM correctly points out this limitation, it should more closely assess its implications. BLM should do this in two ways. First, BLM should conclude that this limitation likely produces an overestimate of emissions from displaced sources and thus an underestimate of the lease sale's net emissions. This result is because future policies and technological penetration such as electric vehicles and heat pumps becoming more prevalent are likely to make electrification a more frequent and reliable oil substitute.(15) Moreover, with the electrical grid becoming increasingly reliant on renewable energy and less reliant on fossil fuels, this means that as oil production displaces electricity, it will be displacing an increasing share of renewable energy.(16) Accordingly, this lease sale is likely to increase oil demand and displace renewables more than BLM's modeling projects. (15) See PETER HOWARD ET AL., INST. FOR POL'Y INTEGRITY, THE REAL COSTS OF OFFSHORE OIL AND GAS LEASING 5 (2022). (16) Id.	Additional discussion related to a future lower-carbon energy market and its implications for emissions have been included in the Final SEIS.
Not Provided	Not Provided	Institute for Policy Integrity at NYU School of Law	69351	5	BLM does not acknowledge that its modeling limitations produce an underestimate of net emissions. Yet BOEM-which, once again, designed the model on which BLM's substitution analysis is based-recognizes this bias. Specifically, BOEM has explained that energy-market evolution "will result in greater energy substitution from renewable sources and a greater reduction in consumption than is currently projected."(17) Accordingly, BOEM recognizes that emissions under the no-leasing baseline "would be less than in the standard baseline given that there would be less substitution with imports and a greater reduction in reduced demand."(18) BLM should follow BOEM's lead and acknowledge that the limitations in its substitution modeling produce an underestimate of the lease sale's net greenhouse gas emissions. (17) BUREAU OF OCEAN ENERGY MGMT., 2024-2029 NATIONAL OUTER CONTINENTAL SHELF OIL AND GAS LEASING PROPOSED FINAL PROGRAM 6 (2023). (18) Id. at 5-31.	Additional discussion related to a future lower-carbon energy market and its implications for emissions have been included in the Final SEIS.
Not Provided	Not Provided	Institute for Policy Integrity at NYU School of Law	69351	6	Second, BLM should correct the limitations in EnergySub by performing additional substitution modeling. Specifically, BLM should consider parameter values more consistent with considerable decarbonization over the coming decades. Once again, BLM can look to BOEM for guidance. In its recent five-year offshore-leasing plan, BOEM conducted sensitivity analysis in which it adjusted MarketSim's elasticity and quantity values based on the economics literature and re-ran the model.(19) Consistent with BOEM's hypothesis, the agency found emissions under the no-leasing scenario to be substantially lower-and, accordingly, net emissions from new leasing to be substantially higher-than MarketSim's primary runs projected.(20) BLM should perform additional substitution analysis consistent with BOEM's recent analysis. (19) BUREAU OF OCEAN ENERGY MGMT., ECONOMIC ANALYSIS METHODOLOGY 2024-2029 NATIONAL OUTER CONTINENTAL SHELF OIL AND GAS LEASING PROPOSED FINAL PROGRAM 4-15 to 4-16 (2023). (20) Id. at 4-19 tbl.4-7 (reporting net lifecycle emissions from primary and alternative runs).	Additional discussion related to a future lower-carbon energy market and its implications for emissions have been included in the Final SEIS.

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Not Provided	Not Provided	Institute for Policy Integrity at NYU School of Law	69351	7	BLM's Social Cost of Greenhouse Gases Estimates, Though Reasonable as Conservative Estimates, Greatly Understate the Lease Sale's Climate Costs and Counsel for Additional Analysis Using Updated Valuations Assessing the climate and environmental effects of the lease sales includes not only quantifying emissions but also assessing the incremental climate change damages that those emissions will cause. One way that BLM assesses climate damages is by monetizing greenhouse gas emissions. To estimate incremental climate change damages, BLM applies the 2021 interim social cost of greenhouse gases values developed by the Interagency Working Group on the Social Cost of Greenhouse Gases.(21) In its 2021 update, however, the Interagency Working Group acknowledged that its valuations were substantial underestimates due to their high discount rates and omission of the latest climate science and economics.(22) In other words, BLM uses outdated estimates that are widely agreed to underestimate the full social costs of greenhouse gas emissions.(23) (21) Draft SEIS at F-3. (22) See INTERAGENCY WORKING GRP. ON THE SOCIAL COST OF GREENHOUSE GASES, TECHNICAL SUPPORT DOCUMENT: SOCIAL COST OF CARBON, METHANE, AND NITROUS OXIDE INTERIM ESTIMATES UNDER EXECUTIVE ORDER 13990 AT 31 (2021) (recognizing that the Working Group's estimates "underestimate societal damages from [greenhouse gas] emissions"). (23) Id. at 31 (2021) (acknowledging that current social cost valuations "likely underestimate societal damages from [greenhouse gas] emissions"); Richard L. Revesz et al., Global Warming: Improve Economic Models of Climate Change, 508 NATURE 173 (2014) (co-authored with Nobel Prize-winning economist Kenneth Arrow).	Appendix G, Section G.2.1, Social Costs of GHG Emissions, has been updated for the Final SEIS. In the current analysis, the BLM applies the EPA Workbook, which uses the currently best available estimates of the SC-GHG for use in DOI decision-making and analysis as cited in the EPA's Final Rule of March 8, 2024, Fed. Reg 16820, 17018-20.
Not Provided	Not Provided	Institute for Policy Integrity at NYU School of Law	69351	8	BLM follows the Interagency Working Group's guidelines and provides values for three discount rates: 2.5%, 3%, and 5%, as well as the 95th percentile of damages estimate at a 3% annual discount rate. While including the 95th percentile of damages is a welcome consideration in the EIS, the Interagency Working Group recognized that its full range of values "likely underestimate societal damages" from greenhouse gas emissions.(24) BLM's depiction of the 95th percentile value as "higher-than-expected economic impacts from climate change" and a "low probability, but high damage scenario"(25) is therefore misleading and lacking context. To provide proper contextualization, BLM should acknowledge that the climate damage valuations it applies are underestimates (rather than suggesting the opposite) and treat them as such in its leasing determinations related to Coastal Plain. (24) Interagency Working Grp., supra note 22, at 4 (2021). (25) Draft SEIS at F-4. To further address this issue, BLM should perform additional analysis using the U.S. Environmental Protection Agency's (EPA) 2022 draft estimates, which are substantially higher than the Interagency Working Group estimates and thereby support the Interagency Working Group's finding that its numbers are conservative. (26) EPA's draft valuations, released in November 2022, faithfully apply recent advances in science and economics on the costs of climate change and implement the roadmap laid out in 2017 by the National Academies of Sciences for updating the social cost of greenhouse gases.(27) And while EPA's draft valuations remain underestimates,(28) they more fully account for the costs of climate change by incorporating the latest available research on climate science, damages, and discount rates.(29) BLM should therefore apply EPA's climate-damage valuations to more fully capture the climate impacts that will result from this lease sale. (26) EPA External Review Draft of Report on the Social Cost of Greenhouse Gases (2022) [Draft SC-GHG Update]. (27) NAT'L ACADS. SCI., ENGINEERING & MED., VALUING CLIMATE DAMAGES: UPDATING ESTIMATION OF THE SOCIAL COST OF CARBON DIOXIDE (2017). (28) Draft SC-GHG Update at 4 ("[B]ecause of data and modeling limitations . . . estimates of the SC-GHG are a partial accounting of climate change impacts and, as such, lead to underestimates[.]"). (29) Max Sarinsky, Inst. For Pol'y Integrity, The Social Cost of Carbon: Options for Applying a Metric in Flux (2023).	Appendix G, Section G.2.1, Social Costs of GHG Emissions, has been updated for the Final SEIS. In the current analysis, the BLM applies the EPA Workbook, which uses the currently best available estimates of the SC-GHG for use in DOI decision-making and analysis as cited in the EPA's Final Rule of March 8, 2024, Fed. Reg 16820, 17018-20.

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Sigman	Marilyn	-	78189	2	The SEIS should provide honest carbon accounting and emission projections from oil and gas development in the Refuge and admit they will be inconsistent with the other Refuge purposes and the long-term strategy of zero-net carbon by 2050. The discussion of projected carbon emissions in the FEIS fails to consider them in the context of The Long-Term Strategy of the United States: Pathways to Net-Zero Green House Gas Emissions by 2050 (U.S. Department of State and Executive Offices of the President, 2021) submitted by the Biden Administration to the U.N. Framework Convention on Climate Change (UNFCCC) in November 2021. This long-term strategy commits the U.S. to net zero emissions by 2050 at the latest. The SEIS is deficient in only discussing the earlier target of 50% reduction of carbon emissions by 2030 and concluding that it is irrelevant to the FEIS decision-making process because oil production is not projected to begin in 2030. Projected emissions are then minimized by putting them in terms of percentages of total emissions, but the numbers demonstrate that the level of emissions from Prudhoe Bay oil field development will be more than tripled annually with emissions from oil development from the Willow project and the amount of development envisioned in Alternative D. Development is expected to last from 40-60 years, well past 2050. No consideration of emissions during the exploration phase is included nor are the geographic scope of exploration and consequent impacts described. Ironically, the SEIS also includes discussions about the impact of global warming on both the Arctic environment and on the difficulty of Arctic oil and gas operations on top of thawing permafrost without any emphasis on the connection between fossil fuel extraction, transportation, and use on accelerating global warming.	The net emissions are presented as percentages of the total US projected emissions in 2030 to put the program area emissions in the context of the US 2030 target. The cumulative emissions in the region (Cumulative Impacts section of Section 3.2.1 of the Draft SEIS) are also compared to the 2030 target. The Cumulative Impacts section of Section 3.2.1 of the Draft SEIS discusses the projected annual GHG emissions from the program area under each action alternative, the Willow project, and other large sources on the North Slope to characterize cumulative effects on climate change. Emissions of GHGs from exploration were not quantified as they are highly uncertain and unknown at this stage. A qualitative explanation of exploration activities was included in Section 3.2.2, Air Quality, of the Draft SEIS. A discussion of exploration-related emissions considered has been added to the Final SEIS. Exploration emissions would comprise a small portion of the total gross emissions that have been reported in the Draft SEIS.
Sigman	Marilyn	-	78189	3	"Carbon bombs" like the oil and gas development recently permitted as the Willow project are the single biggest sources of fuels that release planet-heating gas when burned. In 2021 the International Energy Agency found no room for continued expansion of fossil fuel extraction projects in its net zero emissions scenario. A recent Nature study reassessed the amount of fossil fuels that could be burned if realistic levels of carbon dioxide removal are assumed. It found that between 2020 and 2050, the supply of coal must fall by 99%, oil by 70%, and gas by 84% to keep the planet from heating by 1.5C above preindustrial levels. No consideration is given to emissions from the development, transportation, and combustion of natural gas in the SEIS although the potential for it is mentioned several times in the context of a planned natural gas/LNG pipeline from Prudhoe Bay to the Kenai Peninsula. (Two different-diameter pipelines are being planned to supply oil for export and in-state use). The Final EIS for the LNG pipeline failed to consider all of the potential emissions from the construction of the pipeline or combustion by the end-users but estimated that the pipeline compressors and heaters would emit about 16 million tons of carbon dioxide annually. Former FERC Commissioner Richard Glick noted in his dissent from the Commission's approval of the LNG project that this is "equivalent to four times the emissions of all of Alaska's passenger vehicles."	A detailed climate analysis was performed in Section 3.2.1 of the Draft SEIS. Emissions of GHGS were quantified for oil and gas development and production activities. The Draft SEIS (Appendix B) disclosed that any co-occurring gas produced with oil before a gas pipeline is available would have natural gas liquids separated to blend and transport with the oil and be reinjected to maintain reservoir pressure. As noted in Section 3.2.6 of the SEIS, a natural gas transport pipeline from the North Slope to southcentral Alaska is currently planned, but it is expected to initially transport gas from established fields with large proven reserves located outside the program area. Natural gas developments in the program area could eventually be connected to the pipeline if proven gas resources are discovered in the Coastal Plain. However, the connection of any gas fields in the Coastal Plain to the planned pipeline is highly uncertain and no annual estimates of natural gas production are available for natural gas production in the program area. The Draft SEIS notes that if the Coastal Plain is connected to a future natural gas pipeline and gas development occurs, then this would result in additional GHG emissions that would contribute to climate change and the types of impacts discussed in the Affected Environment and Local and Global Direct and Indirect Impacts of the Draft SEIS. Any future development and use of a natural gas pipeline in the program area, if and when that occurs, would require its own permitting and GHG/climate analysis. In addition, as noted in the Required Operating Procedure 6, prior to the development of a CPF, production pad/well, airstrip, road, gas compressor station, or other potential substantial air pollutant emission source in the program area, project proponents would be required to prepare and submit for BLM approval an emissions inventory that includes quantified emissions of regulated air pollutants from all direct and indirect sources related to the proposed project for each year for the life of the project, including GHGs. Thus, an analysis of the GHG emissions from development, transportation, and combustion of produced gas from projects in the program area would be required prior to development. Project-specific NEPA analyses would be required prior to authorizing any future oil and gas activity in the program area.
Lish	Christopher	-	79004	2	- Perform a robust assessment of the climate impacts of leasing and its compatibility with U.S. climate goals.	A detailed climate analysis was performed in the Draft SEIS (Section 3.2.1 and appendix cited therein). Emissions of GHGS were quantified for oil and gas development/construction and production activities as well as the downstream transportation, processing, and combustion of produced oil under each action alternative. Additionally, GHGs from the change in foreign oil consumption due to oil production in the program area were estimated. The estimated monetary value of the global climate change impacts of the total net GHG emissions under each alternative was estimated using social cost of GHG metrics. In addition, the annual net emissions under each alternative were put in context through comparison to other emission sources that the public can more readily comprehend (e.g., number of homes' energy use for one year, gallons of gasoline consumed).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Bigham	Angela	-	79150	6	Comments on 3-3: - The climate summary table 3-1 (under the current conditions heading) that uses WRCC data is inaccurate and does reflect current conditions because the data on snowfall and depth was not available after 1989 and the table implies that it was available through 2016. The table should note that data on snow was only available until 1989. The WRCC web site shows that there are no snow data available from 1989 to 2016. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ak0558 Furthermore the station is not in the area under consideration. - The Draft SEIS should present the most up to date summary of snow conditions. See Burkart et al. 2022: https://ecos.fws.gov/ServCat/Reference/Profile/149472 "Burkart, G. A., C. Flanagan, M. A. Geist. 2022. Water Resources Inventory and Assessment: Arctic National Wildlife Refuge, Alaska. U.S. Department of the Interior, U.S. Fish and Wildlife Service. 253pages. See Table 4 on page 53 - It is impotant to note that the most recent measurements indicate that average monthly snow depth in the study area - "In the coastal plain and foothills ecoregions, average October snow depth at active meteorological stations is less than six inches (Table 4, Figure 10 a-c). As the winter progresses, average monthly snow depth tends to increase by a few inches but does not exceed ten inches at any station during any month. The range of variability is high during all months (Figure 10 a-c). The lowest first quartile was at the Camden Bay station during October, where 25% of average October snow depths were less than 2 inches. " Table 1: Average monthly snow depth (inches) at active stations in the Arctic Refuge. Stations are ordered by ecoregion and then distance from the Beaufort Sea Coast. Data were compiled from USGS (Urban 2021) Ecoregion Station Oct Nov Dec Jan Feb Mar Apr May Coastal Plain Niguanak 4.8 6.5 6.1 6.0 6.0 6.3 6.9 6.1 Foothills Camden Bay 4.9 6.8 7.5 8.3 8.5 8.7 10.0 8.7 Marsh Creek 5.5 7.3 7.7 8.5 8.4 8.1 8.0 6.3 See Figure 3 in comment letter - Figure 3. Average monthly snow depth at active long-term meteorological stations in the Refuge. Data were compiled from USGS (Urban 2021) and USDA NRCS NWCC (accessed 2021) dataSEIS. A red box at the top of the vertical axis indicates data are presented at a different scale.	Table 3-1 presents climate summary data separately for Kaktovik Barter Island Airport and Deadhorse Alpine Airport. The Kaktovik Barter Island airport data is provided for 1947 to 2016 for the monthly average, min, and max temperatures, and monthly average precipitation. A footnote has been added to Table 3-1 in the Final SEIS to clarify that data on snowfall and depth was not available after 1989 at the Kaktovik Barter Island airport. The Current Conditions section of Section 3.2.1 has been updated to include the snow data from the referenced USFWS report.
Wolf	Meghan	Patagonia	79580	2	Currently, 25% of U.S. carbon emissions come from fossil fuel extraction on our public lands, and, the U.S. Energy Information Administration (EIA) has warned that our domestic oil and gas production is likely to increase steadily in the coming decades. This scenario, which would likely be realized with approval of new drilling projects across the Arctic Refuge and Western Arctic, would result in erasing at least half the projected CO2 reductions from the Inflation Reduction Act within a decade, undermining our nation's climate goals. Further, the Arctic is experiencing the impacts of climate change at a rate four times greater than the rest of the world – including permafrost thawing and the subsequent release of stored carbon. But we have the answers we need. Protecting and restoring our lands and waters can provide roughly one-third of the solution by way of carbon sequestration and reduced carbon emissions – two measures necessary to solve the climate crisis.	Observed and projected trends in permafrost thawing as well as other climate change impacts in the Arctic were discussed in Section 3.2.1 Observed Climate Trends and Impacts and Projected Climate Trends and Impacts of the Draft SEIS. A carbon budget analysis has been added to the Cumulative Impacts analysis of Section 3.2.1, Climate and Meteorology, of the Final SEIS using data from the 2022 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends. This analysis outlines the impact of total US federal oil and gas emissions on the remaining global carbon budget under 1.5°C and 2.0°C. The GHG emissions from the program area have been discussed in the context of the carbon budget in Section 3.2.1 of the Final SEIS.
Pletnikoff	Karen	-	79850	3	Finally, one of the largest impacts that the SEIS fails to analyze is the extremely powerful climate change-exacerbating methane releases that always accompany oil and gas development, releases that can be avoided by not drilling into these reservoirs, but releases that become inevitable once the reservoirs are punctured. Keeping the reservoirs intact, untested and undrilled, is the only choice that protects our national security interests.	Methane emissions from production from reservoirs (well drilling; air and ground transport for personnel and supplies; drill pad operations; central processing facility operations, support equipment such as turbines, heaters, incinerators, and flares; and power generation and injection turbines) are reported in Section 3.2.1, Climate and Meteorology, Local and Global Direct and Indirect Impacts of the Draft SEIS. Appendix R of the Draft SEIS provides annual methane emissions for oil development and production, transportation and processing, and downstream combustion.
Freitas	Benjamin	World Wildlife Fund	79957	4	WWF supports strong government action to address climate change. In order to stay within a carbon budget that limits global warming to 1.5oC, the world must cease exploration for new oil and gas and align existing production and infrastructure with the 1.5oC threshold.(4) The world is "quickly exhausting the remaining carbon budget needed to stay within a 1.5°C world. Emissions must peak immediately and begin declining to stay within the remaining budget. Scenarios that hold warming safely below 1.5°C leave only limited space for emissions from oil and gas."(5) As such, any new exploration and development in pristine, frontier regions such as the Arctic Refuge would be contrary to the global necessity of remaining within a 1.5°C threshold. (4) WWF, The Transition Away from Oil & Gas: A WWF Network Policy Position (May 2021), available at: https://wwfint.awsasSEIS.panda.org/downloads/wwf_policy_position___the_transition_away_from_oil_gas.pdf (5) Id at p. 6	A carbon budget analysis has been added to the Cumulative Impacts analysis of Section 3.2.1, Climate and Meteorology, of the Final SEIS, using data from the 2022 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends. This analysis outlines the impact of total US federal oil and gas emissions on the remaining global carbon budget under 1.5°C and 2.0°C. The GHG emissions from the program area have been discussed in the context of the carbon budget in Section 3.2.1 of the Final SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	47	To comply with NEPA, BLM and USFWS must fully account for the direct, indirect, and cumulative impacts of the Coastal Plain Leasing Program under all alternatives and variants and analyze their climate consequences. Indirect effects are those "caused by the action, and later in time or further removed in distance, but still reasonably foreseeable."(89) Cumulative effects are the incremental effects of the action in combination with "other past, present, and reasonably foreseeable future actions."(90) The cumulative impact analysis "must be more than perfunctory"; it must provide a "useful analysis of the cumulative impacts of past, present, and future projects."(91) (89) S. Fork Band Council of W. Shoshone of Nev. v. U.S. Dep't of the Interior, 588 F.3d 718, 725 (9th Cir. 2009) (quoting 40 C.F.R. § 1508.8(b)). (90) See Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt., 387 F.3d 989, 993 (9th Cir. 2004) (quoting 40 C.F.R. § 1508.7). (91) Kern v. U.S. Bureau of Land Mgmt., 284 F.3d 1062, 1075 (9th Cir. 2002) (internal citation omitted).	The Draft SEIS accounts for the direct, indirect, and cumulative impacts of the Coastal Plain Leasing Program under all alternatives. As noted in the Draft SEIS (Section 3.1), issuance of oil and gas leases would have no direct impacts on the environment because by itself a lease does not authorize any on-the-ground oil and gas activities. A lease grants the lessee certain rights to drill for and extract oil and gas subject to further environmental review and reasonable regulation, including applicable laws, terms, conditions, and stipulations of the lease. The impacts of such future exploration and development activities that may occur because of the issuance of leases are considered potential indirect impacts of leasing. The indirect GHG emissions from potential oil and gas development and production activities within the program area were calculated to account for potential climate impacts due to the issuance of the lease under each alternative. In Section 3.2.1, Climate and Meteorology, Local and Global Direct and Indirect Impacts of the Draft SEIS, annual net emissions (including GHG emissions from oil development and processing, downstream transportation, processing and combustion, foreign emissions, and also accounting for the substitute emissions from displaced energy sources) in the anticipated first year of production (2032) as well as the peak annual emissions under each action alternatives were compared to the United States' economy-wide target of reducing its net GHG emissions by 50% to 52% below 2005 level by 2030. The cumulative effects analysis included emissions from large facilities on the North Slope of Alaska, reasonably foreseeable future actions (RFFA) and from the transport of oil and gas produced in program area. The cumulative annual average GHG emissions (including gross emissions from Coastal Plain and other North Slope emissions) were compared with the 2030 U.S. net GHG emissions target to represent cumulative effects on climate change.
Freitas	Benjamin	World Wildlife Fund	79957	48	It is well established that when an agency considers a decision that has the potential to cause greenhouse gas emissions that contribute to climate change, NEPA requires the agency to analyze and disclose the effects of these emissions as indirect or cumulative effects.(92) Indeed, recent court decisions have highlighted the importance of quantifying downstream greenhouse gas emissions in a NEPA document for a sizeable fossil fuel authorization.(93) As DOI has acknowledged, the 2019 Final EIS failed to adequately account for the downstream effects of greenhouse gas emissions.(94) While the Draft SEIS incorporates more analysis of greenhouse gas effects than the 2019 Final EIS, the Draft SEIS is still inadequate and should be further developed in a Final SEIS. (92) 92 Center for Biological Diversity v. National Highway Traffic Safety Administration, 538 F.3d 1172, 1217 (9th Cir. 2008) (holding that "[t]he impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct."). (93) Friends of the Earth v. Haaland, 583 F. Supp. 3d 113 (D.D.C. 2022), vacated on other grounds 2023 U.S. App. LEXIS 10554 (D.C. Cir. 2023); 350 Montana v. Haaland, 50 F.4th 1254, 1268 (9th Cir. 2022). (94) Department of Interior, Secretarial Order No. 3401 (June 1, 2021).	A detailed climate analysis was performed in the Draft SEIS (Section 3.2.1 and appendix cited therein). Emissions of GHGS were quantified for oil and gas development/construction and production activities as well as the downstream transportation, processing, and combustion of produced oil under each action alternative. Additionally, GHGs from the change in foreign oil consumption due to oil production in the program area were estimated. The estimated monetary value of the global climate change impacts of the total net GHG emissions under each alternative was estimated using social cost of GHG metrics. In addition, the annual net emissions under each alternative were put in context through comparison to other emission sources that the public can more readily comprehend (e.g., number of homes' energy use for one year, gallons of gasoline consumed) and to the US 2030 net GHG emissions target. The cumulative effects analysis included emissions from large facilities on the North Slope of Alaska, reasonably foreseeable future actions (RFFA) and from the transport of oil and gas produced in program area. The cumulative annual average GHG emissions (including gross emissions from Coastal Plain and other North Slope emissions) were compared with the 2030 U.S. net GHG emissions target to represent cumulative effects on climate change.
Freitas	Benjamin	World Wildlife Fund	79957	49	First, though it is foreseeable that oil and gas development and production will follow any Coastal Plain lease sales, the Draft SEIS fails to fully consider the cumulative or increased impacts of climate change that may occur as a result of Coastal Plain development and production. In particular, the Draft SEIS fails to adequately analyze how climate change will have cumulative impacts on various biological and social resources such as polar bears, caribou, birds, subsistence uses and resources, water resources, fish and aquatic species, and public health. In the Final SEIS, the agencies must improve the analysis of cumulative impacts from climate change to these resources.	Impacts from climate change is considered on a resource by resource basis in Chapter 3, as both a separate section within the impacts analysis and cumulatively.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	50	Second, while the Draft SEIS now quantifies projected greenhouse gas emissions from Coastal Plain leasing,(95) the agencies have failed to sufficiently contextualize "relevant climate goals and commitments"(96) to help explain the real-world effects of Coastal Plain oil and gas leasing on climate change and the nation's climate goals. In the Final SEIS, the agencies must improve the analysis of the Coastal Plain oil and gas leasing projected greenhouse gas contributions to climate change by including in their analysis of projected climate impacts the nation's net zero emissions goals and the best available scientific information showing how the nation might meet its climate commitments by limiting leasing on federal lands. (95) Draft SEIS at pp 3-8 to 15 and Appx. B. (96) National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, 88 Fed. Reg. 1196, 1206 (Jan. 9, 2023).	The Final SEIS range of alternatives has been updated based on public input requesting maximum protection for key resources and new updated information.
Freitas	Benjamin	World Wildlife Fund	79957	51	As a result of excessive greenhouse gas emissions in the atmosphere, the world is headed toward increasingly dramatic and harmful climate change impacts. The Arctic itself is warming faster than any other region on the planet. From sea ice loss to changing ocean chemistry, impacts of climate change are already being recorded across the Arctic. By oil and gas leasing in the Arctic Refuge, the U.S. would be exacerbating the climate problem. The U.S. should instead take measurable steps to tap American innovation and leadership in addressing the climate crisis. International sentiment urging the U.S. to take action on climate is abundant, as evident in many global forums but particularly well-explained in two recent documents. In October 2018, the Intergovernmental Panel on Climate Change released a special report, Global Warming of 1.5oC, analyzing the impacts of global warming of 1.5oC.(97) It concludes that "[g]lobal warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate."(98) To limit warming to 1.5°C, CO2 emissions would need to "decline by about 45% from 2010 levels by 2030 . . . , reaching net zero around 2050."(99) To achieve this goal would require hastening the transition from fossil fuels, including avoiding "lock-in in carbon-emitting infrastructure."(100) In November 2018, the U.S. Global Change Research Program released the Fourth National Climate Assessment, an authoritative assessment of the science of climate change that describes the economic costs of climate change.(101) It concludes, among other things, that "the impacts of climate change are intensifying across the country, and that climate-related threats to Americans' physical, social, and economic well-being are rising."(102) (97) https://www.ipcc.ch/sr15/ . (98) IPCC Special Report, Global Warming of 1.5°C, Summary for Policymakers, p. 4, available at https://www.ipcc.ch/site/asSEIS/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf . (99) Id. at p. 14. (100) Id. at p. 20. (101) U.S. Global Change Research Program, Fourth National Climate Assessment Volume II: Impacts, Risks, and Adaptation in the United States, available at https://www.globalchange.gov/nca4 . (102) Id. at ch. 1, available at https://nca2018.globalchange.gov/chapter/1/	The Fourth National Climate Assessment was discussed in Section 3.2.1, Affected Environment, of the Draft SEIS, to describe observed and projected climate trends in Alaska and Alaska North Slope. A detailed analysis of GHG emissions and climate impacts was performed in the Draft SEIS (Section 3.2.1 and appendix cited therein). In particular, the estimated economic/monetary value of the global climate change impacts of the total net GHG emissions under each alternative was estimated using social cost of GHG metrics.
Freitas	Benjamin	World Wildlife Fund	79957	52	Climate change is altering the planet in drastic ways. The Arctic is warming at up to four times the rate of the rest of the globe. The impact on sea ice, which is perhaps the most defining feature of the Arctic and the foundation for much of its biology, is illustrated by this map comparing the distribution of new (0-1 years) and older sea ice in 2000 and 2020(103) See Figures on page 25 of the attachment (103) National Oceanic and Atmospheric Administration, 2020 Arctic Report Card Visual Highlights (Dec. 8, 2020), https://www.climate.gov/news-features/understanding-climate/2020-arctic-report-card-climategov-visual-highlights (last accessed Dec. 29, 2020). Furthermore, Arctic Refuge coastal waters are especially sensitive to ocean acidification, which can affect the entire food chain,(104) as well as to the accelerating effects of black carbon deposition directly onto Arctic ice from oil and gas activities, accelerating sea ice melt, with potentially serious effects in and out of the region.(105) (104) See e.g., Arctic Monitoring and Assessment Programme, Arctic Ocean Acidification Assessment-Summary for Policymakers (2013), available at http://www.amap.no/documents/doc/AMAP-Arctic-Ocean-Acidification-Assessment-Summary-for-Policy-makers/808 , see also, NOAA, NOAA-led study shows Alaska fisheries and communities at risk from ocean acidification (July 29, 2014), http://research.noaa.gov/News/NewsArchive/LatestNews/TabId/684/ArtMID/1768/ArticleID/10686/NOAA-led-study-shows-Alaska-fisheries-and-communities-at-risk-from-ocean-acidification.aspx . (105) See, e.g., Judah Cohen et al., Warm Arctic, cold continents: A common pattern related to Arctic sea ice melt, snow advance, and extreme winter weather, Oceanography 26(4) (2013), available at http://dx.doi.org/10.5670/oceanog.2013.70 ; James A. Screen, Influence of Arctic sea ice on European summer precipitation, Environmental Research Letters 8(4) (2013), available at http://iopscience.iop.org/1748-9326/8/4/044015/ . In light of these threats, the consensus of nearly every nation in the world is that, in order to avoid the most devastating impacts of climate change, we must steadily and verifiably reduce carbon emissions to hold the increase in global temperature average to "well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels."(106) (106) Paris Agreement art. 2, paragraph 1(a), adopted Dec. 12, 2015, FCCC/CP/2015/L.9, available at http://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf .	Observed and projected trends in sea ice extent and sea ice thickness in North America Arctic from the latest NOAA Arctic Report Card were presented in Section 3.2.1, Affected Environment of the Draft SEIS. Discussion of the Paris Agreement and the US GHG emissions targets under the agreement can be found in Section 3.2.1, Baseline Greenhouse Gas Emissions of the Draft SEIS. A detailed analysis of GHG emissions and climate impacts under each action alternative was performed and reported in the Draft SEIS (Section 3.2.1 and appendix cited therein).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	53	The agencies must assess oil and gas leasing in the Arctic Refuge and foreseeable future oil and gas development within the context of the global threat of climate change. Oil and gas activities in the Arctic Refuge are not consistent with a future climate that falls under the 1.5°C ceiling that we hope will stave off the most catastrophic climate change impacts. Scientists estimate that a third of already-discovered and proven oil reserves cannot be burned, if the global temperature increase is to be kept below even 2°C, let alone the 1.5°C threshold generally viewed as needed to avoid the worst impacts of climate change.(107) There is simply no room for Arctic Refuge oil and gas in a carbon budget that responsibly addresses the grave threats to humanity and nature posed by climate change. NEPA requires that the agencies analyze the impacts of Arctic Refuge oil and gas leases and foreseeable future oil and gas development on this global carbon budget. (107) 107 McGlade, C. and P. Elkins, 2015, The geographical distribution of fossil fuels unused when limiting global warming to 2 degrees C, Nature 517: 187-190 (Jan. 8, 2015). See also International Energy Agency, World Energy Outlook 2012, Executive Summary, at 3, available at http://www.iea.org/publications/freepublications/publication/English.pdf ("[n]o more than one-third of proven reserves of fossil fuels can be consumed prior to 2050 if the world is to achieve the 2°C goal.").	Section 20001(c)(1) of PL 115-97 requires the establishment of an oil and gas program on the Coastal Plain. The potential impacts of this program on climate change are analyzed in Section 3.2.1 of the Final SEIS as well as in relevant resource sections.
Freitas	Benjamin	World Wildlife Fund	79957	54	The proposal to conduct oil and gas leasing in the Arctic Refuge - and reasonably foreseeable future oil and gas exploration and development stemming from these leases and BLM's leasing of the Arctic Refuge for oil and gas activities - will significantly exacerbate this situation at a time when instead, the U.S. must help to alleviate the climate crisis now facing the planet. Indeed, the Stockholm Environmental Institute ("SEI") found that future leasing practices on federal lands and waters could play an important role in U.S. efforts to achieve its climate protection goals.(108) This recent study found that, under a business-as-usual scenario, where federal leasing continues unabated, U.S. fossil fuel extraction will continue to rise through 2040, with oil and gas production continuing upward, at least in the short term.(109) By 2040, the U.S. could be producing 11% more fossil fuel energy and 7% more fossil fuel carbon than it does today.(110) (108) Peter Erickson and Michael Lazarus, How would phasing out U.S. federal leases for fossil fuel extraction affect CO2 emissions and 2°C goals?, Stockholm Environment Institute, Working Paper 2016-02 (May 2016), available at https://www.sei-international.org/publications?pid=2937 . (109) Id. at 31. See also id at Figure 3. (110) Id. at 31. See also id at Figure 3.	Section 20001(c)(1) of PL 115-97 requires the establishment of an oil and gas program on the Coastal Plain. The potential impacts of this program on climate change are analyzed in Section 3.2.1 of the Final SEIS as well as in relevant resource sections.
Freitas	Benjamin	World Wildlife Fund	79957	55	A solution is at hand: SEI estimates that the cessation of federal oil and gas leasing would lead to a net reduction of global CO2 emissions from oil of 31 million metric tons ("Mt") CO2 in the year 2030.(111) As the SEI study concludes, a cost-efficient pathway to meeting the 2°C commitment would include requiring "total U.S. fossil fuel energy production to decline by 40-60% from current levels by 2040, and even more so for a 1.5°C goal."(112) The study concludes that phasing out the leasing of federal lands and waters for fossil fuel extraction would be an important component of the reductions in fossil fuel consumption necessary to avoid the most devastating impacts of climate change.(113) This point is illustrated in the following graph: See Figure 3 on page 27 of the attachment (111) Id. at 25. (112) Id. at 31. (113) Id. at 9-10 and 31. The agencies must incorporate information regarding lease sale activities and future foreseeable oil and gas exploration and development in the Arctic Refuge as exacerbating climate change into its NEPA analysis of cumulative and foreseeable future impacts. The evidence that Arctic Refuge drilling could tip the global carbon budget well beyond the level to prevent a 2°C temperature increase underscores why DOI should not authorize oil and gas activities in the Arctic Refuge. The United States should strive to be a world leader on Arctic stewardship, including in addressing climate change, and it must demonstrate that it is willing to make tough choices to protect our human and natural worlds.	Section 20001(c)(1) of PL 115-97 requires the establishment of an oil and gas program on the Coastal Plain. A detailed analysis of foreseeable future and cumulative climate impacts under each action alternative was provided in the Draft SEIS, including quantification of the global impacts of the GHG emissions under each alternative using social cost of carbon metrics. A carbon budget analysis has been added to the Cumulative Impacts analysis of Section 3.2.1, Climate and Meteorology, of the Final SEIS using data from the 2022 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends. This analysis outlines the impact of total US federal oil and gas emissions on the remaining global carbon budget under 1.5°C and 2.0°C. The GHG emissions from the program area have been discussed in the context of the carbon budget in Section 3.2.1 of the Final SEIS.
Not Provided	Not Provided	Friends of the Earth	79998	1	I urge your administration to initiate an assessment of what oil and gas development in the Arctic Refuge could do to the environment and releases new land management regulations for the National Petroleum Reserve-Alaska (NPR-A), I ask that you consider the strongest possible protections for the Arctic Refuge and to carefully evaluate all planned oil and gas development in the Western Arctic with a climate assessment so that new projects like Willow cannot move forward in contradiction to our national climate commitments.	A detailed GHG emissions and impacts analysis was performed in Section 3.2.1 of the Draft SEIS for projected oil development and production activities as well as the downstream transportation, processing, and combustion of produced oil under each action alternative. Additionally, the impacts of climate change on other resources in the program area are evaluated in the individual resource sections.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Boldrick	Lauren	EPA Region 10	80058	2	Key recommendations to address climate change concerns: -Include an analysis of the impact of the project emissions from the proposed alternatives in the context of the national GHG reduction goals; the relative significance of these emissions within Alaska in the context of existing and projected impacts; a description of resilience measures associated with the proposed activities on the lease areas; and mechanisms for implementing these measures. -Additional information and clarifications to include in the social cost of greenhouse gas analysis. -Provide additional context and analysis for the GHG emissions and climate impacts associated with a proposed action and alternatives, consistent with the 2023 CEQ Guidance.	In Section 3.2.1, Local and Global Direct and Indirect Impacts of the Draft SEIS, annual net GHG emissions were assessed under each alternative (including GHG emissions from oil development and processing, downstream transportation, processing and combustion, foreign emissions, and also accounting for the substitute emissions from displaced energy sources) in the anticipated first year of production (2032). In addition, the annual net emissions under each alternative were put in context through comparison to other emission sources that the public can more readily comprehend (e.g., number of homes' energy use for one year, gallons of gasoline consumed). For additional consistency with the 2023 CEQ NEPA guidance, The global climate change impacts of the total net GHG emissions due to burning of oil and gas from the program area under each alternative were estimated using social cost of GHG metrics in Section 3.4.10 and Appendix F of the Draft SEIS. A summary of the social cost analysis has been added to Section 3.2.1, Local and Global Direct and Indirect Impacts, of the Final SEIS. A comparison of program area emissions and emissions from Alaska has been added to Section 3.2.1 of the Final SEIS.
Boldrick	Lauren	EPA Region 10	80058	16	Greenhouse Gas Emissions Several new directives have been published following the issuance of the 2020 ROD. For example, CEQ issued its NEPA Guidance on Consideration of Greenhouse Gas Emissions and Climate Change. Given the urgency of the climate crisis and NEPA's important role in providing critical information to decision makers and the public, EPA recommends that the NEPA analysis include: -An analysis of the impact of the project emissions from the proposed alternatives in the context of the national GHG reduction goals to provide additional context to the project emissions. - An explanation of the relative significance of these emissions within the state of Alaska in the context of existing and projected impacts of the rapidity of climate change (e.g., impacts to permafrost). -A description of resilience measures associated with the proposed activities on the lease areas and mechanisms for implementing these measures.	In Section 3.2.1, Local and Global Direct and Indirect Impacts of the Draft SEIS, annual net GHG emissions were assessed under each alternative (including GHG emissions from oil development and processing, downstream transportation, processing and combustion, foreign emissions, and also accounting for the substitute emissions from displaced energy sources) in the anticipated first year of production (2032). In addition, the annual net emissions under each alternative were put in context through comparison to other emission sources that the public can more readily comprehend (e.g., number of homes' energy use for one year, gallons of gasoline consumed). A comparison of program area emissions and emissions from Alaska has been added to the Final SEIS. For additional consistency with the 2023 CEQ NEPA guidance, The global climate change impacts of the total net GHG emissions due to burning of oil and gas from the program area under each alternative were estimated using social cost of GHG metrics in Section 3.4.10 and Appendix F of the Draft SEIS. A summary of the social cost analysis has been added to Section 3.2.1, Local and Global Direct and Indirect Impacts, of the Final SEIS. Observed and projected trends in permafrost thawing as well as other climate change impacts in the Arctic were discussed in Section 3.2.1 Observed Climate Trends and Impacts and Projected Climate Trends and Impacts of the Draft SEIS. Permafrost thawing due to warming surface temperatures and the corresponding release of GHG are discussed in Section 3.1.2, Affected Environment of the Draft SEIS. Additional information on projected permafrost emissions from the referenced Turetsky et. al 2019 study has been added to the Final SEIS.
Boldrick	Lauren	EPA Region 10	80058	17	EPA recommends that the FSEIS provide additional context and analysis for the GHG emissions and climate impacts associated with a proposed action and alternatives, consistent with the 2023 CEQ Guidance. This would include contextualizing the estimated emissions in terms of consistency with action necessary to achieve national climate GHG-reduction goals. As part of this analysis, we recommend the FSEIS consider that the U.S. Geological Survey found that Alaska lands make up approximately 18 percent of the nation in total area, but they contain approximately 53 percent of the national carbon stock.(17) (17) Zhu, Zhiliang, and McGuire, A.D., eds., 2016, Baseline and projected future carbon storage and greenhouse-gas fluxes in ecosystems of Alaska: U.S. Geological Survey Professional Paper 1826, 196 p., http://dx.doi.org/10.3133/pp1826 . In our October 2021 NOI comments, EPA recommended the DSEIS discuss the potential significance of GHG emissions. Subsequent to our comment letter, the United States Court of Appeals for the Ninth Circuit concluded in 350 Montana et al. v. Haaland et al. that 240 million tons of greenhouse gas emissions is neither minor nor insignificant.(18) EPA recommends reviewing this decision and consider incorporating it in the NEPA analysis, specifically when evaluating the significance of the GHG emissions associated with the proposed leasing program.(19) (18) 350 Mont. v. Haaland, 50 F.4th 1254 (9th Circuit 2022) (19) DSEIS Pages 3-11 - 3-14	The GHG emissions and climate impact analysis of the Draft SEIS put the GHG emissions under each action alternative into context through (i) comparison to emission sources that more easily understood (using the EPA equivalencies calculator), (ii) comparison to US climate targets, and (iii) use of the social cost of GHG metrics, consistent with 2023 CEQ guidance. The referenced USGS study has been incorporated into Section 3.2.1, Affected Environment of the Final SEIS emphasizing the relatively large fraction of the national carbon stock in Alaska lands.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Boldrick	Lauren	EPA Region 10	80058	18	EPA also recommends that the greenhouse gas impact discussion in Section 3.2.1, Local and Global Direct and Indirect Impacts, incorporate a summary of the social cost of greenhouse gas (SC-GHG) analysis, provided in Appendix F, to provide additional context for and comparison of the proposed alternatives so that the public can understand the potential significance of these emissions.	As suggested, a summary of the SC-GHG analysis has been added to the Final SEIS, Section 3.2.1, Local and Global Direct and Indirect Impacts.
Boldrick	Lauren	EPA Region 10	80058	19	Permafrost Degradation and Ground Subsidence Considering the indirect and cumulative impacts of the projected emissions, the DSEIS estimates one third of the Coastal Plain (about 520,000 acres) is expected to collapse 16 to 98 feet in depth due to global warming caused permafrost thawing.(20) The DSEIS anticipates that natural and human-induced thawing events of the near-surface soil-bound ice will cause uneven lowering of the ground surface, which may lead to water ponding, preferential erosion, or both.(21) (20) DSEIS Page 3-60 (21) Lukas Gudmundsson et al 2022 Environ. Res. Lett. 17 095014DOI 10.1088/1748-9326/ac8ec2 EPA provides some additional information about the impacts of permafrost thawing for consideration in describing the climate change impacts. Arctic permafrost (perennially frozen ground) thaw increases carbon emissions that further exacerbate global temperature increase.(22),(23) Permafrost thaw exacerbates coastal erosion and flooding. Climate change impacts of decreasing sea ice extent, heavy precipitation, and seal level rise are also associated with coastal erosion and flooding. Coastal erosion and flooding have significant adverse economic impacts for native and local communities.(24),(25),(26),(27) The State of Alaska reports that damage from climate change could add \$3.6 to \$6.1 billion (10% to 20%) to future costs for public infrastructure from now to 2030.(28) (22) Schuur, E.A., McGuire, A.D., Schädel, C., Grosse, G., Harden, J.W., Hayes, D.J., Hugelius, G., Koven, C.D., Kuhry, P., Lawrence, D.M., and Natali, S.M. 2015. Climate change and the permafrost carbon feedback. Nature, 520(7546), pp.171-179. (23) Turetsky, M. R., B. W. Abbott, M. C. Jones, K. W. Anthony, D. Olefeldt, E. A. G. Schuur, Charles D. Koven, A. D. McGuire, G. Grosse, P. Kuhry, G. Hugelius, David M. Lawrence, C. Gibson, and Sannel, A. B. K. 2019. Permafrost collapse is accelerating carbon release. Nature, 569:32-34, doi:10.1038/d41586019-01313-4 (24) Thoman, R. L., J. Richter-Menge, and M. L. Druckenmiller, eds. 2020. Arctic Report Card 2020, doi. org/10.25923/mn5p-t549. (25) Radosavljevic, B., Lantuit, H., Pollard, W. et al. 2016. Erosion and Flooding-Threats to Coastal Infrastructure in the Arctic: A Case Study from Herschel Island, Yukon Territory, Canada.Estuaries and Coasts 39, 900-915. doi.org/10.1007/s12237-015-0046-0 (26) Barnhart, K. R., Overeem, I., and Anderson, R. S. 2014. The effect of changing sea ice on the physical vulnerability of Arctic coasts, The Cryosphere, 8, 1777-1799. doi.org/10.5194/tc-8-1777-2014. (27) Overduin, P.P., Strzelecki, M.C., Grigoriev, M.N., Couture, N., Lantuit, H., St-Hilaire-Gravel, D., Günther, F. and Wetterich, S. 2014. Coastal changes in the Arctic. Geological Society, London, Special Publications, 388(1), pp.103-129. (28) State of Alaska, Division of Community and Regional Affairs. (2023). Climate Change in Alaska. https://www.commerce.alaska.gov/web/dcra/climatechange.aspx	Permafrost thawing due to warming surface temperatures and the corresponding release of GHG are discussed in Appendix B, Section B.1.2, Affected Environment of the Draft SEIS. Additional information on projected permafrost emissions from the referenced Turetsky et. al 2019 study has been added to the Final SEIS.
Boldrick	Lauren	EPA Region 10	80058	29	In Section 3.2.1, EPA recommends the word "solar" be replaced with the word "terrestrial" in this sentence: "GHGs can persist for decades or centuries in the atmosphere and warm the atmosphere by absorbing infrared terrestrial radiation emitted by the earth's surface."	Section 3.2.1 has been revised as suggested: "GHGs ... warm the atmosphere by absorbing infrared solar radiation that has been re-emitted by the earth's surface."
Brisson	Brook	Trustees for Alaska	80131	93	While the draft SEIS's evaluation of GHG emissions and climate is helpful, we strongly recommend several changes to, and identify several issues with, the analysis. Our recommendations include: (1) acknowledging that climate change impacts to the Arctic are significant; (2) addressing analyses that show emissions from already leased reserves will exceed a 1.5°C temperature rise; (3) disclosing the production estimates used in the analyses of emissions and economic impacts; (4) conducting a sensitivity analysis that assumes necessary climate action; (5) fully addressing the impacts of black carbon that would result from oil development in the Arctic; (6) amending discussion of carbon sequestration in Alaska; and (7) requiring mitigation in the action alternatives of upstream, midstream, and downstream GHG emissions resulting from oil development and production.	This comment is introductory. Responses to the specific comments are provided in the responses below.
Brisson	Brook	Trustees for Alaska	80131	94	The draft SEIS discusses climate change and GHG emissions that would result from oil leasing in the Coastal Plain. It explains that climate change is causing and will continue to cause adverse effects globally, in the Arctic, and on the Coastal Plain, recognizing that climate science demonstrates the connection between anthropogenic GHG emissions and climate disruption. But nowhere does BLM and FWS simply acknowledge that climate change is causing significant effects in the Arctic. It is important for the final SEIS to state this explicitly and then, as discussed below, include measures in Alternative D to mitigate GHG emissions that would result from oil development and production and thus contribute to climate change.	Appendix B (Affected Environment), Section B.2.1, discusses impacts of climate change in the Arctic. Requiring mitigation measures in any alternative is decided at the time of the ROD by the DOI decision-maker.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	95	DOI has acknowledged that climate change impacts are significant. Recently, it explained that "[c]limate change poses a significant global threat."(438) BLM has concluded that "the implications of climate change for marine mammals in the Arctic are substantial."(439) Federal agencies clearly acknowledge the significance of climate change impacts, including on the Arctic.(440) The draft SEIS itself implicitly acknowledges that climate change is significantly impacting the Arctic: "Considering all past, present, and reasonably foreseeable future actions, by far the most significant factor affecting Arctic marine mammals is ongoing climate change from GHG emissions and the resulting loss of sea ice habitat."(441) (438) Bureau of Ocean Energy Mgmt., 2024-2029 National Outer Continental Shelf Oil and Gas Leasing Program: Final Programmatic Environmental Impact Statement 26 (Sept. 2023) (emphasis added) [hereinafter OCS 2023 EIS], https://www.boem.gov/sites/default/files/documents/oil-gas-energy/leasing/2024-2029NatOCSEISOilGasLeasing FinalPEISVol1 0.pdf (439) Management and Protection of the National Petroleum Reserve in Alaska, 88 Fed. Reg. 62,025, 62,030 (Sept. 8, 2023) (emphasis added). (440) E.g., U.S. Env'tl. Protection Agency, Methane and Black Carbon Impacts on the Arctic: Communicating the Science 2 (Jan. 19, 2016) [hereinafter Methane and Black Carbon], https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/arctic-methane-blackcarbon communicating-the-science.pdf ("Climate change has distinct and significant impacts on the Arctic." (emphasis added)); U.S. Env'tl. Protection Agency, Climate Change Indicators: Permafrost, https://www.epa.gov/climate-indicators/climate-change-indicators-permafrost (last visited October 7, 2023) (finding that warming of permafrost was "statistically significant" in several locations); Nat'l Oceanic and Atmospheric Admin., U.S. Dep't of Commerce, Climate change impacts, https://www.noaa.gov/education/resource-collections/climate/climate-change-impacts (last visited October 7, 2023) ("Climate change will continue to have a significant impact on ecosystems and organisms, though they are not impacted equally. The Arctic is one of the ecosystems most vulnerable to the effects of climate change, as it is warming at least twice the rate of the global average and melting land ice sheets and glaciers contribute dramatically to sea level rise around the globe." (emphasis added)). (441) DSEIS at 3-269 to 3-270.	Appendix B (Affected Environment), Section B.2.1, discusses impacts of climate change in the Arctic. Requiring mitigation measures in any alternative is decided at the time of the ROD by the DOI decision-maker.
Brisson	Brook	Trustees for Alaska	80131	96	Although the draft SEIS offers several comparisons to contextualize GHG emissions the Leasing Program would cause, it fails to accurately evaluate and disclose the impacts on achieving the steep emissions reductions necessary based on climate science.	A carbon budget analysis has been added to the Cumulative Impacts analysis of Section 3.2.1, Climate and Meteorology of the Final SEIS using data from the 2022 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends. This analysis outlines the impact of total US federal oil and gas emissions on the remaining global carbon budget under 1.5°C and 2.0°C. The GHG emissions from the program area have been discussed in the context of the carbon budget in Section 3.2.1 of the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	97	This analysis in the draft SEIS, however, insufficiently contextualizes projected leasing program GHG emissions and, ultimately, is misleading. The agencies must place emissions and climate damages "in the context of relevant climate action goals and commitments, . . . summarizing and citing to available scientific literature to help explain real world effects."(442) As such, BLM and FWS must discuss emissions in the context of research showing that already leased fossil fuel reserves are projected to exceed necessary climate targets. (442) National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, 88 Fed. Reg. 1196, 1206 (Jan. 9, 2023).	Section 3.2.1, Climate and Meteorology, of the Draft SEIS puts the GHG emissions under each action alternative into context through comparison to US climate targets and also includes a discussion of observed and projected climate effects in the Arctic, Alaska, and North Slope from recent scientific literature.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	98	Numerous recent analyses conclude that to meet either commonly cited emissions targets - such as the United States's commitment to achieving net zero GHG emissions by 2050 - or to keep global temperature increases below a 1.5°C threshold in order to avoid likely catastrophic climate damages,(443) including to the Coastal Plain, new fossil fuel infrastructure and development must immediately cease, while ongoing production must decrease at a consistent rate over the coming decades.(444) The draft SEIS should include research showing that the production horizons for already leased federal fossil fuel resources will exceed U.S. climate commitments if current emission levels continue. For example, federal crude oil already leased will continue producing for 34 years beyond the 1.5°C threshold and 19 years beyond the 2°C threshold, and federal natural gas already leased will continue producing 23 years beyond the 1.5°C threshold and 8 years beyond the 2°C threshold.(445) In 2017, the U.S. Global Change Research Program - comprised of the nation's top climate scientists - published a final report "designed to be an authoritative assessment of the science of climate change, with a focus on the United States, to serve as the foundation for efforts to assess climate-related risks and inform decision-making about responses."(446) The report's findings help demonstrate that expanded fossil fuel development would seriously hinder the United States's ability to meet climate commitments and avoid significant adverse effects on the Arctic.(447) (443) Intergovernmental Panel on Climate Change, Global Warming of 1.5°C, an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (Oct. 6, 2018), http://www.ipcc.ch/report/sr15/. (444) See, e.g., Stéphanie Bouckaert et al., Net Zero by 2050: A Roadmap for the Global Energy Sector at 21, Int'l Energy Agency (Oct. 2021) (App. Ex. 18), https://iea.blob.core.windows.net/asSEIS/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroBy2050-ARoadmapfortheGlobalEnergySector CORR.pdf; Dan Welsby et al., Unextractable fossil fuels in a 1.5 °C world, 597 Nature 230, 234 (2021) (App. Ex. 16), https://www.nature.com/articles/s41586-021-03821-8; Oil Change International, The Sky's Limit: Why the Paris Climate Goals Require a Managed Decline of Fossil Fuel Production (September 2016), http://priceofoil.org/2016/09/22/the-skys-limit-report/; Oil Change International, Drilling Toward Disaster: Why U.S. Oil and Gas Expansion Is Incompatible with Climate Limits (January 2019), available at: http://priceofoil.org/drilling-towards-disaster; M. Pathak et al., IPCC: Climate Change 2022: Mitigation of Climate Change Technical Summary at 90 (2022) (App. Ex. 17), https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_TechnicalSummary.pdf; Intergovernmental Panel on Climate Change (IPCC), Climate Change 2021: The Physical Science Basis: Summary for Policymakers SPM-36 n.43 (Valérie Masson-Delmotte et al. eds., 2021) [hereinafter IPCC AR6] ("The term carbon budget refers to the maximum amount of cumulative net global anthropogenic CO2 emissions that would result in limiting global warming to a given level with a given probability, taking into account the effect of other anthropogenic climate forcings. . . . The remaining carbon budget indicates how much CO2 could still be emitted while keeping warming below a specific temperature level."). IPCC AR6 estimates the remaining carbon budget starting in 2020 for a 67% probability of limiting warming to 1.5°C at 400 GtCO2, depending on variations in reductions of non-CO2 emissions (such as methane). At the current emissions rate of 42 GtCO2 per year, this carbon budget would be expended in less than ten years. See IPCC AR6 at SPM-38, Table SPM.2. (445) Dustin Mulvaney, et al. Over-Leased: How Production Horizons of Already Leased Federal Fossil Fuels Outlast Global Carbon Budgets (2016), https://1bps6437gg8c169i0y1drtgz-wpengine.netdna-ssl.com/wp-content/uploads/wpallimport/files/archive/Over_Leased_Report_EcoShift.pdf. (446) U.S. Global Change Research Program, Climate Science Special Report 1 (Nov. 4, 2017). (447) Id. at 28-29, 31-32, 195, 307-08, 316-19.	A carbon budget analysis has been added to the Cumulative Impacts analysis of Section 3.2.1, Climate and Meteorology of the Final SEIS using data from the 2022 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends. This analysis outlines the impact of total US federal oil and gas emissions on the remaining global carbon budget under 1.5°C and 2.0°C. The GHG emissions from the program area have been discussed in the context of the carbon budget in Section 3.2.1 of the Final SEIS. The IPCC (2018) Special Report, Global Warming of 1.5°C, was reviewed and a discussion on global GHG emissions target of "decline by about 45% from 2010 levels by 2030 . . . , reaching net zero around 2050" has been added in Section 3.2.1 Affected Environment, Baseline Greenhouse Gas Emissions of the Final SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	99	In light of this research, while the draft SEIS briefly mentioned the United States's near-term climate commitment, the comparison of first year emissions and peak annual emissions to the 2030 reductions target obscures the impact of production that would result from Coastal Plain leasing. As BLM and FWS explain, oil production would not begin in the program area until 2032, with peak emissions not starting until after 2050 and continuing for decades. The draft SEIS acknowledges the U.S. commitment to achieving net-zero emissions by 2050. But the discussion of GHG emissions in context of this commitment states merely that "fossil fuels are likely to continue to play a role in the U.S.'s energy portfolio" and that, under certain scenarios for achieving the goal, "oil and gas consumption would continue beyond 2050."(448) This cursory analysis does not sufficiently explain how considerable emissions from Coastal Plain oil production continuing far beyond 2050 squares with scientific research showing the need for steep emissions reductions in the near-term and substantially deeper cuts by 2050. Comparing the peak emissions to the 2030 target without addressing the impacts on achieving net zero by 2050 is misleading and creates the impression that the magnitude of the harmful impacts of the action alternatives are less significant than they actually are. (448) DSEIS App. R. at R-25. BLM and FWS must include more in-depth analysis in the final SEIS and address the reality that decades of estimated peak emissions from production well beyond 2050 conflicts with achieving U.S. climate commitments.	In Section 3.2.1, Climate and Meteorology, Local and Global Direct and Indirect Impacts of the Draft SEIS, first year (2032) production emissions were compared to the 2030 target because that is the year closest to the target. The peak year emissions were also presented to put them in the context of U.S. climate targets. A carbon budget analysis has been added to the Cumulative Impacts analysis of Section 3.2.1, Climate and Meteorology of the Final SEIS using data from the 2022 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends. This analysis outlines the impact of total US federal oil and gas emissions on the remaining global carbon budget under 1.5°C and 2.0°C. The GHG emissions from the program area have been discussed in the context of the carbon budget in Section 3.2.1 of the Final SEIS. The IPCC (2018) Special Report, Global Warming of 1.5°C, was reviewed and a discussion on global GHG emissions target of "decline by about 45% from 2010 levels by 2030 . . . , reaching net zero around 2050" has been added in Section 3.2.1 Affected Environment, Baseline Greenhouse Gas Emissions of the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	100	The draft SEIS acknowledges that total production from the Leasing Program is estimated to range from 1.5 to 10 BBO under the action alternatives.(449) Yet, the estimates of annual emissions under each alternative are single values that appear to stem from an undisclosed production estimate rather than a range of values associated with a range of potential production. Based on the presented emissions estimates in the draft SEIS, the agencies appear to have used a production estimate for Alternative B that is very close to the low end of the stated range for anticipated production.(450) Problematically, the draft SEIS does not disclose the production estimates actually used in the emissions analysis, nor does it provide an explanation of the basis for using those estimates in the emissions analysis rather than providing a range of emissions based on the range for potential production under each alternative.(451) This omission is a failure to take a hard look at the impacts of the alternatives. It also potentially skews the comparison of alternatives by underestimating the potential emissions associated with the least constrained action alternative (Alternative B). (449) DSEIS at 3-111. (450) Multiplying the annual downstream emissions for Alternative B by an emission factor of 0.43 tCO2e/barrel of crude oil, we estimate that BLM assumed around 1.75 billion barrels of oil would be produced across the 69-year assumed lifespan of Alternative B. (451) See supra Section V.A. We urge BLM and FWS to correct this issue by disclosing the production assumptions underlying the emissions analyses for each alternative. If those production assumptions indeed underestimate or fail to consider the full range of emissions, BLM and FWS should analyze and disclose that full range based on the range of potential production under each alternative.	Emissions estimates for each alternative provided in the Draft SEIS were derived from annual production forecasts for each alternative that were based on the Alternatives in the RDF. These forecasts have been added to the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	101	BLM admits that there is uncertainty in its energy substitution modeling due to possible changes in laws, policies, and market dynamics based on lower fossil fuel demand. Nonetheless, the draft SEIS assumes ongoing high demand for petroleum products and conducts no sensitivity analysis that assumes lower demand due to existing climate pledges, much less the amount of climate action that needs to happen for the United States to meet climate commitments. Given the need to rapidly transition away from fossil fuels for a chance to avoid global temperatures rising more than 1.5°C and to avoid the worst impacts of a changing climate, we urge BLM and FWS to simulate (or at least to qualitatively address) the expected prospects for drilling in the Coastal Plain under a scenario consistent with meeting climate targets, or, at minimum, a scenario assuming demand in-line with existing decarbonization pledges.	Additional discussion related to a future lower-carbon energy market and its implications for emissions have been included in the Final SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	102	As the U.S. and the global economy transition to a low-emissions energy future, the demand for oil (especially from areas not yet leased that have a long lead time) are likely to decline considerably. Global demand for oil is around 100 million barrels/day. Climate scenarios compatible with keeping temperatures from rising more than 1.5°C or 2°C project that global oil demand will decline by between 40 to 70 million barrels/day by 2040 and decline between 60 to 90 million barrels/day by 2050.(452) Even scenarios that simply assume policies and technologies develop according to recent trends, and do not assume what is needed to avoid a 1.5°C or 2°C rise, still project that global oil demand will decline by between 10 to 40 million barrels/day by 2040 and by between 30 to 50 million barrels/day by 2050.(453) To put things in perspective, the unconstrained scenario projects that at its peak, a field in the Coastal Plain region could result in between 0.1 to 0.2 million barrels/day.(454) Global demand for oil will likely be reduced by much more than this high-end assumption of peak production from the Coastal Plain of 0.2 million barrels/day. BLM and FWS need to consider this in modeling. Moreover, analyzing lower production scenarios would reveal even more starkly that constructing infrastructure enabling extraction from undeveloped reserves in the Arctic will increase fiscal risk to firms in the long run as they fail to recover investments from stranded asSEIS. (452) Resources for the Future. 2023. Global Energy Outlook. https://www.rff.org/publications/reports/global-energy-outlook-2023/ [hereinafter, RFF 2023]. Scenarios compatible with keeping global temperatures from rising below 2C by 2100 is BP Accel and from rising below 1.5C include: BNEF NZS, BP Net Zero, Equinor Bridges, and IEA NZE. The Reference scenarios include: Exxon-Mobil, IEEJ Reference, and OPEC Reference. Figure 8. World Oil Demand shows the reference scenarios ranging from 100 to 110 mb/d, scenarios compatible with 2C reach 60 mb/d in 2040 and 40 mb/d in 2050. Scenarios compatible with 1C reach 50 to 40 mb/d in 2040 and 20 to 25 mb/d in 2050. (100-60=40 to 110-40=70 mb/d decline in 2040 and 100-40=60 to 110-20=90 mb/d decline in 2050). (453) RFF 2023, Figure 8 shows that for evolving policy scenarios (including Equinor Walls, BP New Momentum, BNEF ETS, IEEJ Advanced Technology, and IEA APS) oil demand falls to between 90 and 70 mb/d in 2040 (10 to 40 mb/d below the reference scenarios in 2040) and falls to between 80 and around 58 mb/d in 2050 (for 20 to 52 mb/d below the reference scenarios in 2050). (454) DSEIS App. B. at B-10. To be conservative, assuming that both anchor fields that BLM assumes would begin production before 2050 could come online and reach peak production at the same time means that peak production for the entire program area could result in around 0.2 mb/d. BLM states that it assumes two fields would come online by 2050 : "The assumption is that the second anchor field would be discovered and developed several years after the first anchor field and would have four smaller satellite fields that would be developed by 2050 and tie into its CPF." DSEIS at 3-422	Additional discussion related to a future lower-carbon energy market and its implications for emissions have been included in the Final SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	103	The agencies analysis in the draft SEIS in this regard stands in contrast to DOI's recent analysis for the National Outer Continental Shelf Oil and Gas Leasing Proposed Final Program (OCS Final Program). In the draft SEIS's substitution analysis, BLM assumes "that current regulations and consumption patterns will not change over the long term."(455) But in the OCS Final Program analysis, while likewise running scenarios based on 2023 AEO projections, DOI also recognizes that "meeting U.S. climate goals will require significant changes to national and worldwide economies beyond those projected by the 2023 AEO" and therefore conducted a "sensitivity analysis on the impacts of net-zero emissions pathways."(456) (455) DSEIS App. R at R-25. (456) Bureau of Ocean Energy Mgmt., 2024-2029 National Outer Continental Shelf Oil and Gas Leasing Program: Proposed Final Program 5-17 (Sept. 2023); id. at 6 ("BOEM's analysis shows that, in a future where the U.S. makes significant progress towards its net- zero emissions goals, a reduction in reliance on OCS oil and gas production would occur. This reduction will result in greater energy substitution from renewable sources and a greater reduction in consumption than is currently projected using baseline data from the EIA."); Bureau of Ocean Energy Mgmt., Final Economic Analysis Methodology for the 2024-2029 National Outer Continental Shelf Oil and Gas Leasing Program 4-7 to 4-20 (Sept. 2023); OCS 2023 EIS at 34. In contrast, the draft SEIS admits of likely changes to energy demand patterns, but instead of conducting additional sensitivity analysis, merely states: The EnergySub modeling for the CPSEIS does not account for structural changes that would have to occur within energy markets to meet climate commitments and achieve net-zero emission goals. As the U.S. works towards achieving net-zero, energy production and consumption patterns will change. Energy markets may become increasingly electrified through greater deployment of renewable energy sources, enabling sectors that have historically been heavily reliant on fossil fuels to reduce their demand and consumption of carbon intensive energy sources. Technological innovation will also play a significant role in transforming how energy will be produced and consumed, though its implications for specific fuel sources and uses is not known at this time since many of the technologies have yet to be developed or economically scaled for widespread adoption. Even in a low carbon future, fossil fuels are likely to continue to play a role in the U.S.'s energy portfolio. Princeton's Net-Zero America Project has been developing pathways to achieve net-zero emissions by 2050 using existing technologies. Four of their five pathways projected that oil and gas consumption would continue beyond 2050, and that carbon capture and sequestration technology would play an important role in offsetting emissions. Under their fifth scenario, oil and gas are phased out by 2050 but oil continues to account for more than 20% of the energy fuel mix until the late 2030's (Larson et al. 2020). Researchers and industry experts are continuing to explore potential pathways for decarbonization and the role of fossil fuels and other energy sources in a low carbon economy is still uncertain. Specific data on how the energy transition will affect demand for fossil fuels and alternative energy sources is not yet available. DSEIS App. R. at R-25 to R-26.BLM should, as DOI has done in the OCS Final Program analysis, conduct a sensitivity analysis based on a lower-carbon future. Therefore, we strongly urge BLM and FWS to simulate (or at least qualitatively address) development in the Coastal Plain under a scenario that assumes global oil demand is consistent with meeting climate targets, such as net-zero pathways, or, at minimum, a reduced carbon-demand future. BLM and FWS should include the subsequent estimated economic impacts of development under this scenario as well in its economic impact analysis. We also recommend that the draft SEIS discuss the existing known barriers to development in the Arctic compared to elsewhere that, at the least, will extend the hypothetical development timeline.(457) (457) See infra Section VI.V.3.	Additional discussion related to a future lower-carbon energy market and its implications for emissions have been included in the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	104	The draft SEIS briefly mentions that black carbon emissions can increase snow and ice melt, exacerbating climate change effects,(458) and that black carbon emissions are projected to be lower under Alternative D.(459) But the draft SEIS fails to discuss in greater depth what the additional warming impacts would be of black carbon emitted from sources in the Arctic. Nor does the draft SEIS explicitly acknowledge that black carbon has a greater impact when emitted in the Arctic than in warmer climates. We urge BLM and FWS to address these deficiencies in the final SEIS. (458) DSEIS at 3-2 to 3-3. (459) Id. at 3-11, 3-13, 3-14.	Additional discussion on the warming impacts of black carbon in the Arctic has been added in Section 3.2.1, Local and Global Direct and Indirect Impacts of the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	105	The SEIS should discuss the greater adverse impact on the Coastal Plain of black carbon emitted from oil development and production occurring in the Arctic itself. In contrast to the draft SEIS's cursory discussion of black carbon, the OCS Final Program documents address this issue directly. There, DOI explains that "black carbon emitted in the Arctic has a greater impact than black carbon emitted in warmer climates."(461) The SEIS should likewise reflect the latest scientific research on black carbon. (461) OCS 2023 EIS at 27.	Additional discussion on the warming impacts of black carbon in the Arctic has been added in Section 3.2.1, Local and Global Direct and Indirect Impacts of the Final SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	106	The draft SEIS asserts that sequestration of "GHGs from land use, land-use change, and forestry from lands in the state has been significantly higher than the state's total anthropogenic GHG emissions since 1990," citing Alaska Dep't of Env'tl. Conservation Division of Air Quality, Alaska Greenhouse Gas Emissions Inventory: 1990-2020 (May 25, 2023) [hereinafter ADEC 2023], https://dec.alaska.gov/air/anpms/projects-reports/greenhouse-gas-inventory .(462) While this statement appears to be accurate based on ADEC 2023, it omits an important consideration. Future GHG emissions (especially CH4), and therefore climate warming, are projected to have a profound impact on permafrost thaw. Some of the soil carbon in the arctic is 20,000 years old and represents massive stores of potential GHG emissions. ADEC 2023 admits of this uncertainty for future emissions in the Arctic, noting: (462) DSEIS at 3-7. These calculations do not include carbon flux from natural sources. Such sources include Permafrost Carbon Feedback (PCF), which is still being estimated and refined by government and academic research programs. Once a more accurate estimate of PCF is determined in terms of GHG tonnage per year, DEC will investigate using these calculations in the SIT to better estimate total statewide GHG emissions.(463) (463) ADEC 2023 at 63.	The referenced text in Draft SEIS refers to historical carbon sequestration. A discussion of the uncertainty in the ADEC inventory around carbon flux from natural sources has been added to the Final SEIS. Future emissions from permafrost thawing are discussed in Section 3.2.1, Projected Climate Trends and Impacts in the Arctic, Alaska, and North Slope. Additional information from the USGS (Zhu and McGuire 2016) on permafrost and carbon flux emissions in Alaska has been added to Section 3.2.1 of the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	107	Explaining this potential release of emissions from permafrost thaw aligns with the agencies' analysis in the draft SEIS. It describes how such thaw releases GHGs, including increased emissions of N2O.(464) BLM explained this in even starker terms in the Willow Master Development Plan final SEIS: "Recent studies (Voigt, Marushchak et al. 2017) suggest that thawing permafrost could also lead to the release of significant amounts of N2O, which is typically the third largest contributor to net radiative forcing by long-lived GHGs. Permafrost thaw releases nitrogen from the previously frozen soil, enabling chemical transformations by microbes from nitrogen to N2O (Butterbach-Bahl, Baggs et al. 2013; Voigt, Marushchak et al. 2017)."(465) BLM and FWS should include this research in the final SEIS and connect these studies' conclusions to projections regarding the ratio of emissions to sequestration in Alaska. (464) DSEIS at 3-5. (465) BLM, Willow Master Development Plan: Final Supplemental Environmental Impact Statement 37 (Jan. 2023). If this issue goes unaddressed, the draft SEIS risks conveying the misleading conclusion that all future GHG emissions in Alaska will be offset by sequestration. We recommend that, in the SEIS, BLM and FWS address this uncertainty regarding the relationship between GHG emissions and sequestration in Alaska.	Section 3.2.1 of the Final SEIS has been revised to include the referenced studies and to note that future net sequestration will be impacted by GHG emissions resulting from permafrost thaw.
Brisson	Brook	Trustees for Alaska	80131	108	The draft SEIS discusses various measures, including stipulations and required operating procedures, to mitigate adverse impacts to the Coastal Plain from oil development and production. However, the agencies provide no mitigation of GHG emissions that would stem from oil development and production (except for monitoring and reporting). It is critical for BLM and FWS to do so in the final SEIS. BLM must analyze reasonable alternatives, "including those that would reduce GHG emissions relative to baseline conditions, and identify available mitigation measures to avoid, minimize, or compensate for climate effects."(466) Thus, in the SEIS, the agencies should analyze and require measures to mitigate GHG emissions that contribute to climate change impacts. (466) 88 Fed. Reg. at 1200-02.	Requiring mitigation measures in any alternative is decided at the time of the ROD by the DOI decision-maker.
Brisson	Brook	Trustees for Alaska	80131	109	In the Arctic specifically, for example, the "decreasing extent and duration of sea ice due to warming has dramatic consequences for Arctic species and subsistence communities that live and hunt on the sea ice," with the disappearance of sea ice "expected to continue."(472) This example shows that mitigating GHG emissions stemming from sources in the Arctic directly correlates to reducing adverse impacts to BLM-managed resources. Research demonstrates an "observed linear relationship" of about 3m2 of sea-ice loss per metric ton of CO2 emissions.(473) As such, "any measure taken to mitigate CO2 emissions will directly slow the ongoing loss of Arctic summer sea ice."(474) Even more recent scientific evidence shows that "[b]y quantifying the relationship between anthropogenic GHG emissions and polar bear recruitment, . . . sensitivities to cumulative anthropogenic emissions explain observed population trends, allow estimation of demographic impacts from new emissions sources, and enable [Endangered Species Act (JESA)] procedures to assess global warming impacts of proposed actions-along with impacts on the ground."(475) As detailed in the discussion of the impacts of the oil and gas program on polar bears, the SEIS should utilize these studies to evaluate, disclose, and contextualize the impacts. The SEIS should also provide measures to mitigate impacts such as these resulting from GHG emissions.(476) (472) OCS 2023 EIS at 41, 74. (473) Dirk Notz & Julianne Stroeve, Observed Arctic Sea-Ice Loss Directly Follows Anthropogenic CO2 Emission, 354 SCIENCE 747, 748 (Nov. 11, 2016). (474) Id. at 750. (475) Steven C. Amstrup and Cecilia M. Bitz, Unlock the Endangered Species Act to address GHG emissions, 381 Science 949, 949 (Aug. 31, 2023). (476) See infra Section VI.K.2.f	Requiring mitigation measures in any alternative is decided at the time of the ROD by the DOI decision-maker.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	110	Accordingly, we strongly urge BLM and FWS to discuss and require measures to mitigate GHG emissions and the resulting contribution to climate change impacts, including those that would "align BLM decision making with the goal of achieving net-zero emissions by 2050."(477) There are several mitigation measures the agencies could require under Alternative D. The standard oil and gas lease gives BLM the right to specify rates of development and production in the public interest. For many years, the agency has interpreted this authority to allow it to limit production to protect environmental or wildlife values.(478) BLM also has authority to require lessees to enter into unit agreements if necessary for proper development and operation of a field. Using these authorities, BLM could include a stipulation that a lease is subject to BLM's discretion to impose a rate of production in order to reduce GHG emissions stemming from production on drilling operations on the leasehold. (477) Bureau of Land Mngt., 2021 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends 92 (2022) [hereinafter Specialist Report]. (478) See National Wildlife Federation, 169 IBLA 146, 164 (2006).	Requiring mitigation measures in any alternative is decided at the time of the ROD by the DOI decision-maker.
Brisson	Brook	Trustees for Alaska	80131	111	To avoid or delay GHG emissions, BLM should consider including a stipulation that specifies BLM reserves the discretion to delay permitting of development and production activities on a lease - and allow for lease suspension during the delay period - based on U.S. climate commitments. Additionally, as set forth in the Specialist Report, BLM has other mitigation tools it should consider, as a last resort, to offset GHG emissions. The agency could impose measures to require the leaseholder to sequester an amount of carbon equivalent to estimated upstream, midstream, and downstream GHG emissions by year from production. Such sequestration could be achieved, for example, by offsite commitments. Another measure BLM should consider is requiring compensatory mitigation in the form of monetary payments equivalent to the social cost of lifecycle greenhouse gas estimates for projected well production.(479) (479) Specialist Report at 91-95. We strongly urge BLM and FWS to impose one or more of these mitigation measures on leases in the SEIS, prioritizing those that would avoid GHG emissions stemming from oil development and production.	The BLM and FWS recognize the importance of accounting for adverse impacts from GHG emissions that could result from activities conducted pursuant to the leasing program. The feasibility of using low-GHG emission vehicles and equipment and other emissions reduction methods will be assessed for each proposal when submitted. As illustrated in Table 31, the contribution of GHG emissions from exploration, development, and production activities themselves would be small in comparison to the contribution of GHG emissions from downstream combustion of produced oil and associated market effects. As explained in Appendix C.6., there are many uncertainties with projecting future petroleum activities, such as the timing of oil field discoveries and associated development and the amount of economically recoverable oil. What is known, however, is that even in an optimistic scenario, it takes a number of years to progress from leasing to exploration to development to production, transport, and downstream consumption. Thus, there is a significant time lapse between the leasing phase and the manifestation of GHG emissions from downstream consumption and associated market effects. Meanwhile, the Department of the Interior currently lacks an established and widely applicable program for offsetting GHG emissions that directly or indirectly result from oil and gas leasing, or standards establishing which party in the long causal chain between leasing, exploration, development and production, transportation, and consumption should be responsible for offsetting such emissions. In the absence of such a program or at least generally acceptable standards of how one would be implemented, it is infeasible to impose such a requirement at the leasing stage of an oil and gas program, especially one in which actual production is highly uncertain and likely in the distant future. A more prudent and effective approach is to refrain from prescribing a potentially problematic standard now, and to instead revisit potential mitigation strategies when reviewing specific proposals in the future, when project GHG emissions inventories are available and more effective and standardized mitigation and offset strategies are likely to exist.
Hudson	Andrew	-	80161	1	Our organization feels that the SEIS doesn't go far enough. We are commenting to ask you to perform an honest scientific review of the climate impacts of any leasing for oil or gas in this special, fragile place. The Arctic is warming four times faster than the rest of the United States, and what happens there manifests itself across the North American continent in the form of climate disasters. Please perform a robust assessment of the climate impacts of leasing and its compatibility with U.S. climate goals.	A detailed climate analysis was performed in Section 3.2.1 of the Draft SEIS. The Affected Environment section of the Draft SEIS includes an assessment of trends in warming and other climate indicators in the Arctic, Alaska, and North Slope as well as evaluation of GHG emissions in the North Slope, Alaska, US and across the globe. The Local and Global Direct and Indirect Impacts section provides emissions from projected oil development and production activities in the program area as well as the downstream transportation, processing, and combustion of produced oil under each action alternative. The global climate change impacts of the total net GHG emissions under each alternative were estimated using social cost of GHG metrics which are monetary estimates of global impacts of climate-related damages. In addition to the discussion on the effects of climate change in Section 3.2.1 of the Draft SEIS, the impact of climate change on multiple resources in the program area is assessed in the individual resource sections.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Baran	Eleanor	-	80165	3	In the Leasing SEIS, the BLM used the EPA's GHG Equivalencies Calculator to estimate GHG equivalencies for predicted GHG emissions from oil and gas operations on the Coastal Plain. The agency only included GHG emissions from the start of the development (in 2026) in its calculations of equivalencies, while in Table 3-4 in the Leasing SEIS, BLM calculates the total net GHG emissions from the project's timeline of 2023 to 2053.	The GHG equivalencies were reported in Section 3.2.1 of the Draft SEIS for annual average gross GHG emissions from 2026 to 2053 under each action alternative as 2026 is the year that development is projected to start. There are no emissions prior to development (i.e., 2023 to 2025) and so these years were not included in the average annual emissions used in the GHG equivalencies in the Draft SEIS. The title of Table 3-4 in Section 3.2.1 of the Final SEIS has been revised to clarify this.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Councill	80190	175	NEPA requires the agencies to take a hard look at the direct, indirect, and cumulative impacts of a Coastal Plain oil and gas leasing program on climate and meteorology, both locally and globally. NEPA also requires the agencies to analyze the cascading effects of climate impacts on other resources and uses such as subsistence, human health, fish and wildlife populations, cultural resources, travel routes (e.g., trees and bushes moving northward), and water resources. In doing so, the agencies must utilize traditional Gwich'in Knowledge about the existing and historical local climate as well as about the threats posed by changes to that climate over time. As described in Attachment A, Gwich'in Knowledge describes historical climate and environmental catastrophes that caused great hardship for their people and describe how the proposed oil and gas leasing in the Program Area may cause the same hardships, including descriptions of environmental changes observed during individual's lifetimes and some of the consequences on their subsistence practices. Gwich'in Cultural Experts also describe weather patterns and climactic conditions as tied to animal behaviors and important to subsistence activities.	A detailed climate analysis was performed in Section 3.2.1 of the Draft SEIS. The Affected Environment section of the Draft SEIS includes an assessment of trends in warming and other climate indicators in the Arctic, Alaska, and North Slope as well as evaluation of GHG emissions in the North Slope, Alaska, US and across the globe. The Local and Global Direct and Indirect Impacts section provides emissions from projected oil development and production activities in the program area as well as the downstream transportation, processing, and combustion of produced oil under each action alternative. The climate change impacts of the total net GHG emissions under each alternative were estimated using social cost of GHG metrics which are monetary estimates of global impacts of climate-related damages. In addition to the discussion on the effects of climate change in Section 3.2.1 of the Draft SEIS, the impact of climate change on multiple resources in the program area is assessed in the individual resource sections.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Councill	80190	176	By incorporating Traditional Knowledge into the final SEIS analyses of direct, indirect, and cumulative impacts to climate, the agencies can ensure they are meeting NEPA's requirement of taking a hard look at the potential climate impacts on other resources and uses such as subsistence, human health, fish and wildlife populations, cultural resources, and water resources as well as measures to mitigate those impacts.	The Final SEIS has been updated to incorporate additional Traditional Knowledge from existing data sources as well as new information provided during the public comment period.
Adoko	Ashlee	State Of Alaska	80221	21	The State's input on discussions of downstream greenhouse gas emissions. Speculative Downstream Effects Throughout the Leasing SEIS there are discussions of downstream greenhouse gas emissions from the combustion of petroleum-based fuels by end users, such as government, business, and private citizens. The implication of these discussions is that these greenhouse gas emissions are directly attributable to the development of oil and gas on the coastal plain located on the North Slope of Alaska. See page E-6, Chapter 3, pages 3-8 through 3-9, pages 3-11 through 3-16, pages 3-26 through 3-27, and Appendix Q, pages 49-63. This implication has no basis in logic or in the NEPA analysis process. According to 40 C.F.R. 1508.1(g), effects are defined as: "changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and include the following: (1) Direct effects, which are caused by the action and occur at the same time and place. (2) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."(57) (57) https://www.ecfr.gov/current/title-40/chapter-V/subchapter-A/part-1508 . There is no clear and direct causal chain between a barrel of oil produced on the Coastal Plain and the end user consumer's greenhouse gas emissions. NEPA has long been understood to only require analysis of effects that are "reasonably foreseeable."(58) A barrel of oil from the Coastal Plain travels to Prudhoe Bay, Alaska, where it is mixed with crude oil from oil and gas facilities located on the North Slope. The crude oil is then transported through TAPS to Valdez where it is transported by oil tanker to a refinery located in Washington, California, or Asia. At that point, the crude oil would be placed into inventory, with no clear timeline as to when it would be refined and shipped to the end user. We do know that China has a history of stockpiling crude oil.(59) This means that the mixed crude may not be refined and combusted for months or even years. (58) See City of Davis v. Coleman, 521 F.2d 661 (9th Cir. 1974). (59) https://www.cnn.com/2020/04/08/business/oil-prices-china-imports/index.html . Given this information and the lack of a causal chain,(60) downstream greenhouse gas emissions from combustion of petroleum-based fuels cannot be attributed to an oil and gas project located on the Coastal Plain, since NEPA regulations at 40 C.F.R. Sec. 1508.1(g) requires "a reasonably close causal relationship to the proposed action or alternatives." These downstream greenhouse gas emissions are, at most, remote and speculative impacts. Please remove references to downstream greenhouse gas emissions from the Executive Summary, Chapter 3 including numerous tables, as well as Appendix Q. (60) See Sierra Club v. U.S. Forest Service, 46 F.3d 835 (8th Cir. 1995).	The climate analysis reported in Section 3.2.1 of the Draft SEIS follows the 2023 CEQ NEPA Guidance which recommends estimation of downstream combustion GHG emissions.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	13	There is no question that federal, tribal, state, and local governments all play a role in protecting public health. We understand that addressing the impacts of climate change is an important piece of the federal government's public health responsibilities. However, it is disingenuous for the Agencies to suggest that authorizing production from the Coastal Plain does anything more than introduce a new reliable, domestic source of oil; because oil is a fungible commodity, new production in one location does not necessarily drive increased production overall. Indeed, it is possible that new production may have the opposite effect; by putting downward pressure on the price of the commodity, domestic development in the Coastal Plain may result in other projects becoming economically infeasible. It is particularly frustrating to see the Agencies raise concerns about the climate change impacts of domestic protection, thereby threatening to deny the benefits of oil and gas development to the people of the North Slope. while, at the same time, the Administration is calling on the Organization of the Petroleum Exporting Countries and its allies-which include countries with lower environmental standards than the United States and troubling human rights records-to increase oil production for import into the United States.(20) (20) Trevor Hunnicutt and Jeff Mason, U.S. calls. on OPEC and its allies to pump more oil, REUTERS, (Aug. 11, 2021), https://www.reuters.com/world/middle-eastius-call-opec-its-allies-increase-oil-production-cnbc-2021-08-11 .	The Economy section of the SEIS focuses on the potential economic effects of oil production in the Coastal Plain at the local, regional, and statewide level. The impacts were quantified based on a hypothetical oil development scenario (described in Appendix G). The potential impacts on the national and global economies however are very difficult to project and quantify given that oil prices and production volumes are subject to external supply and demand factors, including geopolitical conditions in oil producing regions. Oil is a global commodity and an increase in oil production in the Coastal Plain alone will not impact the market price of oil and will not impact production levels in other oil producing regions. The impacts of climate change are also global and difficult to ascertain. The estimates of the social cost of carbon presented in this SEIS (Appendix G, Table G-1) provide a wide range of potential impacts acknowledging the uncertainties; and these estimates only consider potential emissions from hypothetical oil production volumes in the Coastal Plain (excluding emissions from other sources).
Von Seggern	Dan	Washington State Attorney General's Office	80273	6	The DSEIS models GHG emissions for the period of 2023-2053, due to limitations of the EnergySub model.(76) Over that 30-year period, the Lease Program would result in a total net increase in GHG emissions of 92.56 - 235.80 million metric tons ("MMT"), depending on the alternative chosen.(77) To put these figures in context, the increased 2023-2053 emissions are equal to 1.55 - 3.9% of the total US CO2e emissions in 2020.(78) The increased production from the Lease Program would also have significant effects on international demand for oil. Approximately half of the projected increase in emissions represents increased foreign demand for oil due to the Lease Program's effect on global oil prices. (76) It should be noted that these figures may be artificially low for two reasons. First, the MarketSub analysis covered the 30-year period from 2023-2053, but oil and gas production would be expected to continue for decades after 2053. The DSEIS predicted that production would continue at some level to 2091, 2085, and 2073 under alternatives B, C, or D, and the total lifetime gross GHGe emissions estimated for the Lease Program are 909 MMT, 679 MMT, and 223 MMT for alternatives B, C, and D respectively. See DSEIS at 3-10 to 3-14. Second, the Reasonably Foreseeable Development Scenario used in developing the DSEIS does not account for sale of gas produced from the Coastal Plain, which is estimated to contain up to 7 trillion cubic feet of gas. The DSEIS assumes that gas produced would (at least initially) be re-injected into the ground rather than sold for combustion. See DSEIS App. B-R at B-21. If this were eventually developed and combusted, a large increase in GHG production from the Leasing Program would result. (77) 2023 DSEIS at 3-10 to 3-14; Id. at Table 3-4. (78) Total U.S. emissions in 2020 were 5,981.4 MMT. 2023 DSEIS at 3-7. See table in comment letter. The increased emissions that would result from the Lease Program are unacceptable because major GHG reductions, not increases, are required in order to avoid the worst effects of climate change. The remaining global carbon budget (that is, the total of all CO2e that can be emitted going forward) to remain within 1.5 oC of warming is 500 billion metric tons ("GT").(79) The increased emissions projected as a result of the Lease Program (92.6 - 235.8 MMT) represent between .019% and .047% of this total. New oil production from the Arctic Refuge under any alternative thus is simply incompatible with efforts to limit climate change. (79) IPCC 2023 at 20.	Regarding the 1.55 - 3.9% comment, the commentor is inappropriately comparing a multi-year total to an annual number (i.e., the total direct and indirect emissions from the program area through 2053 to the annual U.S. emissions in 2020). The Draft SEIS (Appendix B) disclosed that any co-occurring gas produced with oil before a gas pipeline is available would be reinjected to maintain reservoir or would be used to manufacture natural gas liquids to blend and transport with the oil. The connection of any gas fields in the Coastal Plain to a future pipeline (and subsequent combustion) is highly uncertain and no annual estimates of natural gas production are available for natural gas production in the program area. The Draft SEIS notes that if the Coastal Plain is connected to a future natural gas pipeline and gas development occurs, then this would result in additional GHG emissions that would contribute to climate change and the types of impacts discussed in the Affected Environment and Local and Global Direct and Indirect Impacts of the Draft SEIS. Any future development and combustion of natural gas, if and when that occurs, would require its own permitting and GHG/climate analysis. A carbon budget analysis has been added to the Cumulative Impacts analysis of Section 3.2.1 of the Final SEIS using data from the 2022 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends. This analysis outlines the impact of total US federal oil and gas emissions on the remaining global carbon budget under 1.5°C and 2.0°C. The GHG emissions from the program area have been discussed in the context of the carbon budget in Section 3.2.1 of the Final SEIS.
Von Seggern	Dan	Washington State Attorney General's Office	80273	14	According to the 2023 IPCC report, the best estimate of the remaining carbon budget (that is, the total amount of additional CO2e that could be emitted) to limit global warming to 1.5 oC was 500 GT as of 2020.(88) As of 2020, global emissions were approximately 60 GT/annually.(89) Unfortunately, estimates of future CO2 emissions from existing fossil fuel infrastructure without additional abatement(90) already exceed the remaining 500 GT carbon budget. Any actions, such as increases in fossil fuel supply, that significantly increase GHG emissions are incompatible with limiting climate change to a level that avoids massive consequences to people and the environment. For this reason, too, the States ask the Agencies to select the no-action alternative. (88) See IPCC 2023 at 19. (89) Id. at 22. (90) Id. at 20. Abatement here refers to human interventions that reduce the amount of greenhouse gases that are released from fossil fuel infrastructure to the atmosphere.	A carbon budget analysis has been added to the Cumulative Impacts analysis of Section 3.2.1, Climate and Meteorology of the Final SEIS using data from the 2022 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends. This analysis outlines the impact of total US federal oil and gas emissions on the remaining global carbon budget under 1.5°C and 2.0°C. The GHG emissions from the program area have been discussed in the context of the carbon budget in Section 3.2.1 of the Final SEIS.
Peter	Enei Begaye	-	80363	4	And so the climate change is severely impacting subsistence way of life, severely impacting the way in which the waters flow now here, the waterfowls that many community members have talked about, the low salmon runs, the nonexistent -- the nonability to fish for salmon what Chief James said is going on five years now. As well as the decrease in moose population. So again, climate change is a subsistence issue and this has not been adequately addressed within the Draft Supplemental EIS.	Impacts from climate change is considered on a resource by resource basis in Chapter 3, as both a separate section within the impacts analysis and cumulatively. See Section 3.4.3, Subsistence, and 3.4.4, Sociocultural Systems.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Dewitt	Meda	-	80370	2	Not only that, looking through this process of EIS, it doesn't discuss what we have to address in the next hundred years. You'll hear talking points saying that we have the highest and best standards for the industry in Alaska, but that's for the last hundred years. That is not looking forward to the next hundred years. These next few years in front of us that we are responsible for, they will determine our success as human beings in surviving climate change. If we add more carbon to the atmosphere we are betting against ourself. And that carbon, not only has it affected globally, but locally we have persistent pollutants cover the landscape. Those get into the food systems for the birds, for the caribou, for the plants that the people eat, and that are necessary.	The estimated monetary value of the global climate change impacts of the total net GHG emissions under each alternative was estimated using social cost of GHG (SC-GHG) metrics. The SC-GHG accounts for global climate impacts (including those in the North Slope and Alaska) from impacts such as property damage from increased flooding and other climate-related hazards, disruption of energy systems, risk of conflict, environmental migration, human health effects, net agricultural productivity, and the value of ecosystem services.
Sullivan	Emily	-	80384	2	Additional concerns for the Arctic stem from our current climate crisis, which will of course be exasperated by any and all oil and gas development, and has left the Arctic exceedingly vulnerable. Considering the growing awareness surrounding the urgency of the climate crisis, it's clear that drilling in the Arctic Refuge has become undesirable and largely unwanted. The effects of the climate crisis has disproportionate impacts on Arctic lands and communities, which of thus get the forefront of your considerations in the SEIS process.	Observed and projected trends in warming and other climate impacts in the Arctic, Arctic Alaska, and Alaska North Slope containing the program area were discussed in Section 3.2.1, Climate and Meteorology, Affected Environment of the Draft SEIS.
Marsh	Ryan	-	80395	3	I've seen rivers and creeks turning red and becoming highly acidic just over the last few years up there, and we still don't understand why. Climate change is clearly involved and it's related to melting permafrost that's happening already with water quality changing before our very eyes. How can we assure that this extraction won't further impact this resource that you are charged with protecting?	No extraction is being authorized by this SEIS. There are studies of the acidification and tinting of rivers in Western Alaska (please see Koch, J. C., Poulin, B. A., O'Donnell, J. A., Carey, M. P. and Evinger, T., 2023, Chemistry of orange and reference streams in northwestern Alaska: U.S. Geological Survey data release, https://doi.org/10.5066/P9DZSQ43), but the authors do not know of any evidence or studies of red streams within the 1002 area. Two hypotheses for the increase in observations of red rivers in Western Alaska are that meltwaters from rapidly thawing permafrost may be contacting bedrock and leaching minerals or that surface runoff could be mobilizing iron and carbon from thawing wetlands.
Stickman	Danielle	-	80457	3	Science now tells us the Arctic is warming up to 4 times faster than the rest of the planet. Coastal villages are eroding into the sea. Food caches are melting, and melting permafrost is damaging homes and other infrastructure. The construction of drill pads, roads and pipelines, resulting air pollution oil spills, and burning of extracted oil would be devastating for the Arctic climate, communities, and the global ecosystem. Recognizing the scale and urgency of our climate crisis, even industry is turning away from Arctic drilling. Not a single major oil company entered bids in the January 2021 lease sale. America's sixth largest banks, and Canada's 5 largest have announced policies against financing development in the Arctic Refuge. 20 insurance companies now have policies against ensuring drilling in the Arctic Refuge, and more are moving in that direction every year. They recognize that drilling on sacred land and worsening with climate crisis is bad business.	A detailed climate analysis was performed in Section 3.2.1. In particular, the estimated monetary value of the global climate change impacts of the total net GHG emissions under each alternative was estimated using social cost of GHG (SC-GHG) metrics. The SC-GHG accounts for global climate impacts (including those in the North Slope and Alaska) from impacts such as property damage from increased flooding and other climate-related hazards, disruption of energy systems, risk of conflict, environmental migration, human health effects, net agricultural productivity, and the value of ecosystem services.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoenhut	Karimah	Sierra Club	79130	36	Second, BLM's assertion that "managing climate change" by addressing the incremental impacts of emissions caused by its leasing decisions is beyond its ability is both ludicrous and in conflict with Executive Orders requiring a whole of government approach to addressing climate change. Even for leasing pursuant to the Tax Act, BLM plainly has authority to avoid and reduce the direct and indirect emissions that will result from the indirect effects of leasing. BLM has chosen to ignore that authority. BLM failed to consider any alternative that would defer emissions from leasing by deferring production on leases until certain environmental conditions were met. BLM also failed to consider any alternative that would impose requirements on lessees to offset the emissions-related environmental consequences from the down-stream emissions associated with oil or gas that they produce.	In response to public input requesting additional protections, the BLM and USFWS have developed Alternative D2, a sub-alternative of D, which provides increased protections for key resources in the Coastal Plain. The BLM and USFWS recognize the importance of accounting for adverse impacts from GHG emissions that could result from activities conducted pursuant to the leasing program. The feasibility of using low-GHG emission vehicles and equipment and other emissions reduction methods will be assessed for each proposal when submitted. As illustrated in Table 3-1, the contribution of GHG emissions from exploration, development, and production activities themselves would be small in comparison to the contribution of GHG emissions from downstream combustion of produced oil and associated market effects. As explained in Appendix C.6., there are many uncertainties with projecting future petroleum activities, such as the timing of oil field discoveries and associated development and the amount of economically recoverable oil. What is known, however, is that even in an optimistic scenario, it takes a number of years to progress from leasing to exploration to development to production, transport, and downstream consumption. Thus, there is a significant time lapse between the leasing phase and the manifestation of GHG emissions from downstream consumption and associated market effects. Meanwhile, the Department of the Interior currently lacks an established and widely applicable program for offsetting GHG emissions that directly or indirectly result from oil and gas leasing, or standards establishing which party in the long causal chain between leasing, exploration, development and production, transportation, and consumption should be responsible for offsetting such emissions. In the absence of such a program or at least generally acceptable standards of how one would be implemented, it is infeasible to impose such a requirement at the leasing stage of an oil and gas program, especially one in which actual production is highly uncertain and likely in the distant future. A more prudent and effective approach is to refrain from prescribing a potentially problematic standard now, and to instead revisit potential mitigation strategies when reviewing specific proposals in the future, when project GHG emissions inventories are available and more effective and standardized mitigation and offset strategies are likely to exist.

U.3.10 Comment Period Extension Requests

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Adoko	Ashlee	State Of Alaska	30026	1	The State of Alaska ("State") respectfully requests a 90-day extension of the period for the public to review and comment on the September 8, 2023 Draft Coastal Plain Oil and Gas Leasing Program Supplemental Environmental Impact Statement ("Leasing SEIS") jointly issued by BLM and FWS (collectively, the "Lead Agencies"). The State appreciates the Lead Agencies' recent 15-day extension of the public comment deadline from October 23, 2023 to November 7, 2023; however, this extension is inadequate. This timeframe does not afford the State, as a Cooperating Agency on the Leasing SEIS, with adequate opportunity to substantively participate in the development of the Leasing SEIS consistent with the Council on Environmental Quality's (CEQ) regulations that implement the National Environmental Policy Act (NEPA) at 40 C.F.R. parts 1500 through 1508. To date, the Lead Agencies have not offered the State meaningful opportunity to participate in the development of the Leasing SEIS, despite the CEQ's requirement that Cooperating Agencies "shall . . . [p]articipate in the NEPA process at the earliest practicable time." 40 C.F.R. § 1501.8(b)(1). Throughout development of the Leasing SEIS, the Lead Agencies did not offer the State the chance to review and comment on material components of the Leasing SEIS until the Lead Agencies distributed the Preliminary Draft SEIS: -In April 2022, May 2022, and subsequent meetings, the Lead Agencies said that they would provide the lease stipulations and required operating procedures (ROPs) that resulted from the numerous Cooperating Agency and resource group meetings in the preceding weeks. The Lead Agencies did not provide the lease stipulations and ROPs until they distributed the Preliminary Draft SEIS in June 2023. -In the April 2022 meetings, the Lead Agencies said that they would provide their interpretation of the statutory 2000-acre limitation by May 6, 2022. The Lead Agencies did not do so. In the absence of any information, the State volunteered input on the 2000-acre limitation on October 31, 2022. The Lead Agencies did not distribute their interpretation of the statutory 2000-acre limitation until they distributed the Preliminary Draft SEIS in June 2023. -The Lead Agencies said on March 14, 2023, and again on March 16, 2023, that they would provide Chapter 3 for cooperator review by April 17, 2023. The Lead Agencies did not distribute Chapter 3 until they distributed the Preliminary Draft SEIS in June 2023. - The State specifically asked in the May 3, 2023, meeting to see the lease stipulations, ROPs, and Chapter 3, and the determination of legality for BLM and FWS serving as co-leads, since these documents were described as being complete. The Lead Agencies did not provide this information until they distributed the Preliminary Draft SEIS in June 2023. -The Lead Agencies said repeatedly that they would provide the Preliminary Draft SEIS in the first quarter of 2023 but did not provide it until the second quarter of 2023. When the Lead Agencies finally distributed the Preliminary Draft SEIS to the Cooperating Agencies, the Lead Agencies afforded the State and other cooperators a mere 10 business days to review, and prepare comments on, the Preliminary Draft SEIS. Despite the State's request, the Lead Agencies declined to extend this deadline.	The comment period for the Draft SEIS was extended 15 days and ended on November 7, 2023.
Adoko	Ashlee	State Of Alaska	30026	2	Finally, the Lead Agencies did not respond to the State's comments on the Preliminary Draft SEIS until October 4, 2023-nearly a month into the public comment period on the Draft SEIS, and despite indications from the Lead Agencies that these responses would be received weeks prior. And, the Lead Agencies' initial responses to the State's comments were incomplete. Given that the State has been denied the opportunity to meaningfully participate as a Cooperating Agency throughout this process, an additional 90-day extension is necessary to allow the State adequate time to review and comment on the Leasing SEIS. For these reasons, the State respectfully requests that the Lead Agencies extend the public comment period on the Leasing SEIS by an additional 90 days.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Wolfe	Ron	-	34102	1	BLM should extend the comment period beyond November 7. We need more time to review the Draft SEIS 1,400 pages.?o What will it take for BLM to further extend the comment period? What is the criteria for?the decision maker? This comment period timing is during key hunting season and when key stakeholders are unavailable. Kaktovik is the only native village within the 1002 area. Their input is being minimized and ultimately dismissed	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Flanagan	Taylor	-	45928	1	The undersigned students of the Fall 2023 University of Colorado Environmental Decision-Making Course in the Masters of the Environment program respectfully request a comment period extension of at least 30 days on Bureau of Land Management's ("BLM's") Supplemental Environmental Impact Statement (SEIS) for the Coastal Plain Oil and Gas Leasing Program. The MENV program at the University of Colorado Boulder is an innovative, interdisciplinary professional master's degree curriculum designed to equip students with the knowledge, skills, and experience necessary to address the complex environmental challenges of the 21st century. The goal of this two-year, immersive, cohort-based graduate program is to build students into leaders in a wide range of careers in conservation, consulting, energy, natural resources, planning, policy, and sustainability. We have undergraduate degrees in environmental science, public policy, political science, agricultural science, international relations, engineering, and other areas of expertise that may provide useful perspective and comments for consideration by the BLM. However, the scope and complexity of the leasing program requires additional time for the undersigned and, we believe, for the public at large, to fully study the program and provide the type of substantive informed public comment that will assist the BLM in reaching its final decision. Also please note that classes at CU did not begin until late August 2023 which means that we, like much of academia, were not in position to begin working on the SEIS as a class when it was published in early September. Additional time would enable us to provide much more meaningful comments on the SEIS. Although the Administrative Procedure Act (APA; 5 U.S.C. §§ 551-559) does not specify a minimum period for solicitation of comments, the duration of a comment period often varies with the complexity of proposed rules and federal agencies have allowed additional time for rules of this complexity and importance. See e.g., Update to the Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 83 FR 32071, where in response to public requests for an extension of the comment period on the Trump Administration NEPA regulations CEQ extended the comment period 31 days; and Addressing PFAS in the Environment; Extension of Comment Period, 88 FR 37841, where in response to requests for additional time to develop and submit comments the EPA extended the comment period an additional 60 days. We therefore request a comparable extension here, to enable the undersigned and the public at large to provide the most useful and comprehensive comments possible. An additional 30 days would not only give the public more time to develop substantive written comments on the SEIS, but it would also enable the BLM to hold additional public hearings to adequately assess the implications of the leasing program on agency resources and the impacts on the environment.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Nore	Kari	Alaska Chamber	62624	1	The Alaska Chamber writes to request an extension on the comment period for the Coastal Plain Draft Supplemental Environmental Impact Statement and to oppose the unlawful cancellation of oil and gas leases in the Arctic National Wildlife Refuge (ANWR). The Alaska Chamber was founded in 1953, and our mission is to advocate for a healthy business environment in Alaska. The Chamber has more than 700 members and represents businesses of all sizes and industries from across the state. The recently released Coastal Plain Draft Supplemental Environmental Impact Statement (SEIS) is 1,400 pages. Given such a sizeable document the Bureau of Land Management (BLM) should extend the comment period beyond November 7th to provide ample time for thorough review. The comment period timing also falls during important subsistence hunting seasons and key stakeholders are likely unavailable or unable to participate in the comment process.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Emmert	Amy Emmert	American Petroleum Institute	68624	1	The American Petroleum Institute ("API") and the Alaska Oil & Gas Association ("AOGA") echo the Alaska Congressional Delegation and respectfully request that the Bureau of Land Management ("BLM") and US Fish and Wildlife Service ("USFWS") ("Agencies") extend the comment period for the Coastal Plain Oil and Gas Leasing Program amended Draft Supplemental Environmental Impact Statement ("Draft SEIS") by an additional ninety days.(1) The comment period ending on November 7, 2023 does not provide adequate time for stakeholders to fully evaluate the Draft SEIS and to provide constructive comments on this important matter. (1) 88 Fed. Reg. 62,104 (Sept. 8, 2023) ("BLM Notice of Availability"). From a substantive perspective, reviewing the science, economics, technical data, operational parameters and assumptions, and legal issues associated with this amended three-volume Draft SEIS will require extensive analysis by our subject matter experts with additional time needed to develop substantive comments. As the Alaska Congressional Delegation noted, this is especially true when weighed against the fact that comments are also due on BLM's Proposed Rule on Management and Protection of the National Petroleum Reserve in Alaska shortly after, with an even shorter 30-day timeframe for the related information collection request.(2) Certainly, without an extension request, the stakeholders' ability to comment substantively on both matters will be taxed severely with these coinciding comment periods within the same agency on similar Alaskan oil and gas leasing matters.(3) (2) 88 Fed. Reg. 62,025 (Sept. 8, 2023) ("Proposed Rule"). (3) Id. We understand that the BLM has clarified that the changes in the proposed rule relating to the NPR-A has no effect on the oil and gas leasing in the Coastal Plain of ANWR which is not a part of NPR-A and is managed separately.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Emmert	Amy Emmert	American Petroleum Institute	68624	2	As background, the 2019 Final Environmental Impact Statement and now the amended Draft SEIS were both developed to implement an oil and gas leasing program in the Coastal Plain of the Arctic National Wildlife Refuge ("ANWR") and while the 2021 lease sales have been cancelled by the Secretary of the Interior Deb Haaland, key provisions of the law directs BLM to hold two lease sales by December 22, 2024.(4) Thus we recognize that this matter is time sensitive but given that a Final SEIS and Record of Decision will inform the types of land that would be up for leasing in the Coastal Plain as well as the management of wide-ranging post-lease activities such as seismic surveys, exploratory drilling and oil and gas development; it is especially important for all stakeholders to be able to have reasonable time to provide constructive comments. Many of our members have operated in the Alaska region for decades and their unique operations experience can provide useful feedback on the Draft SEIS' analysis of environmental impacts of various leasing alternatives and indirect impacts that could result from hypothetical development. (4) Tax Cuts and Jobs Act of 2017, P.L. 115-97, Section 20001. The BLM's Notice of Availability also provide guidance on the types of comments it seeks including "useful comments" that are specific and address one or more four areas that the Agencies enumerate including identification of new information that would have a bearing on the analysis; inaccuracies or discrepancies in information or any errors in our portrayal of the resources and uses of the program area; suggestions for improving implementation of an oil and gas leasing program on the Coastal Plain, consistent with the purposes of the ANWR; and identification of new impacts, alternatives, or potential mitigation measures (and benefits it would provide).5 In order for these types of useful comments to be developed within the parameters set by the Agencies and with necessary specificity, the comment period on a three-volume amended Draft SEIS is clearly not sufficient or reasonable - particularly when other contemporaneous activities are considered. There is certainly good cause to allow for an extension. (5) BLM Notice of Availability at 62,105.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Prax	Glenn	-	78162	1	The public comment period should be extended for another 60 days in order to give local indigenous groups and other interested stakeholders adequate time to review and analyze these proposed changes.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Klein-Enright	Chere	-	79228	1	First I ask for additional time for comments. The people most impacted by these decisions should be allowed adequate time to review, not to have to choose whether to subsist or review a 1,400-page agency document.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Baran	Eleanor	-	80165	1	The Students, in coordination with other students in the Environmental Decision Making course at the University of Colorado Boulder, requested a comment period extension for the Leasing SEIS. While grateful for the BLM's initial extension of the comment period to November 7th, the Students requested more time to provide thoughtful and detailed comments on the Leasing SEIS, given the national importance, complexity, and implications of the Leasing Program. While the second request has yet to be granted, the Students wish to submit part of their comments by the November 7th deadline to have the comments considered by the BLM. The following document consists of only part of our comments, but the Students will submit their final and complete comments to the BLM by December 8, 2023. The Students hope their final comments submitted in December will be considered in full by the BLM.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Killo	Harrison	-	80166	1	We requested an extension of the comment period on November 1st, however, we have not heard whether it was granted and therefore are submitting these preliminary comments to comply with the current due date. We plan to submit longer, more detailed comments and authorities as a supplement to these on or before December 9, 2023.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Wilson	Josie	-	80212	1	BLM should extend the comment period beyond November 7. More need more time to review the Draft SEIS 1,400 pages.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	3	The Current Comment Period Was Insufficient to Allow Meaningful Review of the Draft SEIS by North Slope Communities. As a threshold matter, the Agencies' ill-timed comment period precludes meaningful input on the Draft SEIS from North Slope communities. Our residents are focused on essential subsistence activities during this time, and there are a number of other federal actions that impact our region and demand our concurrent attention. The Agencies should have further extended this comment period, as requested, to allow adequate time for review, analysis, and comment from the local people. BLM issued its Notice of Availability of the Draft SEIS on September 8, 2023, opening a 45-day comment period. As those who are familiar with the North Slope and Iriupiat culture know, a significant amount of this comment period spans fall whaling season, participation in which is vital to the health and survival of the Iriupiat people who depend on the bowhead whale for cultural and physical survival. Additionally, the Borough's mayoral election (as well as the elections of other North Slope entities) fall squarely in the middle of this comment period, and the Borough is now enmeshed in an administration transition. New leaders are working hard to organize staff and set administrative priorities but will have limited time to articulate policy positions and prepare thorough comments on the Draft SEIS. Citing these points and others, numerous entities submitted requests for an extension of this 45-day comment period. Instead of providing a reasonable period, BLM extended the deadline by a mere 15 days. North Slope organizations have worked diligently to prepare comments on the Draft SEIS during this brief and ill-timed comment period, but our ability to weigh in to the fullest extent possible has been compromised. The Agencies cannot claim meaningful engagement with local communities while ignoring local circumstances.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Rich	Sadie	-	80243	1	We requested an extension of the comment period on October 27, 2023, however, we have not heard whether it was granted and therefore are submitting these preliminary comments to comply with the current due date. We plan to submit supplemental comments and authorities to these on or before December 9, 2023. Thank you in advance for your consideration.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	42	AIDEA on September 28, 2023 sent a letter to the Director of BLM requesting an extension of time for the public comment on the SEIS. A copy is attached as Exhibit D. AIDEA incorporates the AIDEA letter into these AIDEA comments on the SEIS. On September 6, 2023, BLM cancelled the leases it issued to AIDEA in January, 2021 after BLM completed an extensive Final EIS and issued an ROD. On September 8, 2023, BLM published notice of availability of the Draft SEIS in the Federal Register, 88 Fed. Reg. 62,104. That publication started a 45-day public comment period set to expire on October 23, 2023. See 88 Fed. Reg. 62,078. AIDEA asked for a very conservative extension of 45 days for the public comment. AIDEA also acknowledges and supports others who requested a longer period of time especially in light of the complexity and length of the SEIS. In response to numerous requests, BLM extended the public comment period a mere two weeks until November 7, 2023. The Alaska Congressional Delegation on November 1, 2023 sent a letter to Sec. Haaland requesting an extension of at least 80 days and in the letter recited several problems and issues with the solicitation of public comment and consultations with Alaska Natives and Alaska Tribes. A copy of the Delegation letter is attached as Exhibit E and is hereby incorporated into AIDEA's comments. AIDEA must presume the Alaska Congressional Delegation request, if it was considered, was not granted. The current November 7 deadline is made even more illogical given the schedule just announced for public meetings on the SEIS. The new public meeting schedule goes beyond the current SEIS public comment deadline. Given the complexity of the SEIS, it is hard to envision how the public could be adequately prepared to comment or respond to the SEIS. This violates the Administrative Procedures Act because it is an arbitrary and unfounded agency action contrary to the intent of public involvement with the NEPA process.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Calderon	Bianca	-	80319	1	We requested an extension of the comment period on October 27, 2023; however, we have not heard whether it was granted and therefore are submitting these preliminary comments to comply with the current due date. We plan to submit longer, more detailed comments and authorities as a supplement to these on or before December 9, 2023. Thank you in advance for your consideration.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Flanagan	Taylor	-	80320	1	We requested an extension of the comment period on October 27, 2023; however, we have not heard whether it was granted and therefore are submitting these preliminary comments to comply with the current due date. We plan to submit longer more detailed comments and authorities as a supplement to these preliminary comments on or before December 9, 2023. Thank you in advance for your consideration.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	1	As a starting point, we reiterate our profound disappointment that the Department of the Interior (DOI) has refused to extend the public comment period for 180 additional days as we requested. Alaskans have not had enough time to read the 1,430-page SEIS, participate in public meetings, and provide thoughtful comments on the many shortcomings and deficiencies in the SEIS. These comments are accordingly rushed, incomplete, and submitted today based solely on the artificially short timeline the Department has refused to adjust.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Kimbrell	Leila	Resource Development Council for Alaska	80347	1	The Resource Development Council for Alaska, Inc. (RDC) submits the following comments to the Bureau of Land Management's (BLM) Coastal Plain Oil and Gas Leasing Program Supplemental EIS (Leasing SEIS), NEPA document number DOI-BLM-AK-0000-2021-0006-EIS. For the reasons set forth below, RDC requests that 1. that the public comment period be extended an additional 120 days to allow for more meaningful review, including consultation with entities the department failed to properly consult with during the current comment period, and 2. in the absence of an extension to the public comment period, consideration to adopt Alternative B as the preferred alternative under the Leasing SEIS.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Kimbrell	Leila	Resource Development Council for Alaska	80347	3	The comment period should be extended 180 days to allow for full participation of all Alaskans, in particular, the communities of the North Slope who are most impacted by this leasing program. The Leasing SEIS was issued on September 8, 2023 - a time when Alaska Native communities on the North Slope are engaged in fall subsistence hunting and whaling seasons. This is a critical time The original comment deadline was a brief 45 days. We appreciate the current extension of time through November 7th; however, this still is not enough sufficient time for meaningful review and analysis of a 1,430 page document.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Lampe	Charles	Kaktovik Iñupiat Corporation	80350	1	Kaktovik Iñupiat Corporation (KIC) is writing this letter to request a 180-day extension to the public comment period for the Coastal Plain Oil and Gas Leasing Program Draft Supplemental Environmental Impact Statement (DSEIS). We also support the letter submitted by Native Village of Kaktovik. While we represent two different organizations, we are the same people; KIC shareholders are also tribal members and vice versa. You cannot really separate the two of us.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Lampe	Charles	Kaktovik Iñupiat Corporation	80350	2	The timing of the release of the DSEIS to the public could not have been at a worse time for our community - September 6, 2023 was the first day of whaling for our community, it was also the day that we landed our first whale. Also on September 6, 2023, Secretary Haaland cancelled the only leases within the Coastal Plain - KIC was in discussions with the operator, the Alaska Industrial Development and Authority, to act as a contractor on their leases. We are very perplexed by this action because this goes entirely against the Biden Administrations intentions of Advancing Racial Equity and Supporting Underserved Communities under Executive Order 13985.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Lampe	Charles	Kaktovik Iñupiat Corporation	80350	9	After a high-level review of the DSEIS it is our view that the only Alternative that meets the intent of Congress under the 2017 Tax Cuts and Jobs Act legislation is Alternative B, which for the most part is the same Alternative B as in the 2020 FEIS and the Preferred Alternative in the 2020 ROD. We want to be on record that we continue to support Alternative B, however there are many areas of the DSEIS that need to be addressed and amended. We are asking for this extension to allow us the time to heal and cool off over the abhorrent manner you have treated us and our lands through your incorporation of unverifiable, so-called "indigenous knowledge" into the DSEIS after our meetings to discuss this very issue in late January when we expressed concern over an action exactly like this.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Aullaqsruaq Patkotak	Josiah	North Slope Borough	80351	1	Recognizing that BLM has extended the original 45-day comment period on the Draft SEIS by an additional 15 days, I must renew the request that you direct BLM to extend the comment deadline by an additional 105 days, as has been requested by multiple North Slope stakeholders.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Aullaqsruaq Patkotak	Josiah	North Slope Borough	80351	4	Recognizing that BLM has extended the original 60-day comment period by an additional 10 days, I must renew the request that you direct BLM to extend the comment deadline by at least an additional 80 days, as has been requested by multiple North Slope stakeholders as well as Alaska's congressional delegation. As those who are familiar with the North Slope and Iriupiat culture know, the original comment period spanned our fall whaling season, participation in which is vital to the health and survival of the Iriupiat people who depend on the bowhead whale for cultural and physical survival. Additionally, the Borough's mayoral election (as well as the elections of other North Slope entities) fell squarely in the middle of this comment period, and the Borough is now enmeshed in an administration transition. New leaders, including myself, are working hard to organize staff and set administrative priorities but will have limited time to articulate policy positions and prepare thorough comments on this Proposed Rule. Additionally, BLM has so far been unable to meaningfully engage our individual communities through public meetings on the Proposed Rule.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Ferguson	Elizabeth	NANA	80352	1	On behalf of NANA Regional Corporation, Inc. (NANA), I am writing to request that you extend the comment period for the Bureau of Land Management's (BLM) proposed rule "Management and Protection of the National Petroleum Reserve in Alaska" (proposed rule) which currently closes on November 17, 2023.	Comment Acknowledged.
Ferguson	Elizabeth	NANA	80352	3	In support of our neighboring Iñupiat communities on the North Slope, we ask that you extend the comment period on the proposed rule by an additional 90 days, as requested by North Slope stakeholders, in order to ensure that BLM meets its legal obligations and to ensure that the North Slope communities are able provide meaningful input.	Comment Acknowledged.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Rexford, Sr.	Edward	Native Village of Kaktovik	80353	1	The Native Village of Kaktovik (NVK) is requesting an extension of 180 days of the comment period for the Bureau of Land Management (BLM) and U.S. Fish and Wildlife Service (FWS) for the Draft Supplemental Environmental Impact Statement (DSEIS) for the Coastal Plain Oil and Gas Leasing Program. NVK must have more time to address and formulate its comments from a tribal perspective.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Brower	Pearl	Ukpeagvik Inupiat Corporation	80354	1	Ukpeagvik Inupiat Corporation does not believe that the BLM has met its obligations to provide for adequate or meaningful consultation for North Slope communities and has not provided sufficient time for the affected parties to properly digest or consider the full implications of the U.S. Bureau of Land Management (BLM)'s Proposed Rule for the Management and Protection of the National Petroleum Reserve in Alaska (NPR-A). We write to request a minimum 90-day extension of the deadline for comments on the Proposed Rule, in addition to the 10-day extension that was just announced. We are also formally requesting in-person consultation with the decision makers on the Proposed Rule.	An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the Coastal Plain Oil and Gas Program SEIS comment period from October 23, 2023 to November 7, 2023.
Wilson	Josie	-	80385	1	I would ask first of all that BLM extend the comment period beyond November 7th to give us more time to be able to process all the information in the over 1,400 pages, and to continue to provide opportunity for public comment.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Anderson	Bridget	-	80403	6	to echo what others have said, due to all of the issues outlined by the others here in the room, we're requesting an extension of the comment period, and we'll be in touch as an Alaska Native corporation regarding consultation that works for us.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Jones	Craig	-	80405	1	I want to say that I believe that we should extend the comment period. I don't believe that enough people have been notified of this particular issue or the comment period, so I'd like to say I'd like to have the comment period extended.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Lemen	Morrie	-	80407	2	ICAS would like to see that you formally extend the comment period on this so that we do have time to go over the documents and to talk with the people up here in the Arctic. So I'd like to put that to record.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.

U.3.11 Consultation

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Allen	Mark	Government of Canada	79200	16	On the topic of discretionary authority of the Bureau of Land Management Authorized Officer, Canada understands that the authority generally rests with the Arctic District Office manager. Review of the draft SEIS Alternative D appears to indicate that development options would likely require discretionary authority to grant the Rights-of-Way (ROWS) required for pipelines and/or lines from the sea water treatment plant, among other potential waivers, exceptions, or modifications. Given the heightened sensitivity of the Coastal Plain, Canada recommends that the authority for the final review / decision on non-routine matters be elevated to Director-level with consultation with the Fish and Wildlife Service at the same level. Given the unfavorable assessment of waiver documentation in report GAO-17-307, additional detail on how the rationales are documented in writing (noted on p. 2-5) should be explained in the Final SEIS.	Section 20001(a)(1) of PL 115-97 explicitly directs that the Coastal Plain oil and gas program be managed by the Secretary of the Interior, acting through the BLM. Therefore, that authority cannot be delegated to USFWS. However, stipulations and ROPs have been updated to reflect that the BLM Authorized Officer will coordinate with the USFWS. Waivers, exceptions, and modifications are discussed in Chapter 2, Section 2.3.5.
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	16	As reflected in our letter requesting a comment period extension, we are deeply frustrated by the Department's selective application of its consultation policies, and its contention that consultation has occurred with affected Tribes and Alaska Native Corporations (ANCs). During subsequent conversations with our staff, however, BLM admitted the obvious truth: no consultation took place during the development of the draft SEIS, because the Department did not believe there was anything to consult about. In addition, the Regional Alaska Native Corporation for the area, the Arctic Slope Regional Corporation (ASRC), has been denied the opportunity to consult or even meet on the draft SEIS on at least seven occasions. Further, an initial public meeting went forward in Utqiagvik despite just four days' of public notice because a reporter from a French publication was present. KIC was only recently given a chance for a meeting, but no responsible officials were present. The State of Alaska, with the exception of the State Historic Preservation Office (SHPO), has not been consulted regarding the draft SEIS. Nor have the vacated leaseholders or the Alaska Congressional Delegation, despite our leadership in crafting the governing law for and overseeing the administration of the Program. DOI, BLM, and FWS have not met their obligations for consultation or their own standards of conduct- lending further evidence to the notion that the draft SEIS is a fait accompli, and the fulfillment of a political campaign pledge rather than an attempt to comply with federal law.	During the development of the SEIS, the joint lead agencies conducted consultation with Tribes and Native corporations, including the Native Village of Kaktovik, ICAS, Kaktovik Inupiat Corporation, ASRC and others, and involved the State of Alaska as a cooperating agency (see Tables 4-2 and 4-3 in Chapter 4).

U.3.12 Cultural Resources

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	146	Historically Alaska has presented problems in gathering accurate locations, including a near total lack of survey monuments and other cultural features, holes in the coverage of large-scale maps, and terrain that is nearly featureless or covered with dense forest. The availability of inexpensive hand-held global positioning system receivers shows considerable promise for collecting accurate site locations in Alaska. (263) (263) Howard Smith Alaska Journal of Anthropology (2007), at 23. In 2003, Richard Reanier(264) in an archaeological survey of the of the Trans-Alaska Pipeline System (TAPS), described the location error of sites in the area recorded in the 1970s this way: (264) Reanier, Richard E. 2003. Cultural Resource Reconnaissance Along the Trans Alaska Pipeline System for Right-of-Way Renewal. Report prepared by Reanier & Associates, Inc., for the Trans Alaska Pipeline System Owners. Document on file at OHA, Anchorage. More than 30 years after the beginning of TAPS cultural resources studies, GPS technology has allowed an unprecedented degree of accuracy in locating archaeological sites. A comparison of the results of this project with the existing site locations in the AHRS [Alaska Heritage Resources Survey] database reveals that the average error in the AHRS locations was in excess of 200 m and the greatest error for a single site exceeded 2 km.(265) (265) Reanier 2003:139 Edwin Hall relied upon the same scale U.S. Geological Survey topographic maps for ancestral site documentation in the 1002 Area in 1982(266) that archaeologists for the TAPS project used to document ancestral sites. It's reasonable to conclude the sites in the program area that Hall documented in 1982 have similar location error rates. (266) Hall, Edwin S. 1982. Preliminary Archaeological and Historic Resource Reconnaissance of the Coastal Plain Area of the Arctic National Wildlife Refuge, Alaska. Prepared for U.S. Fish and Wildlife Service. Document on file at OHA, Anchorage. The SEIS needs to clarify that most of the ancestral sites in the program area have poor location data that is likely on average off 200 m and may exceed 2 km. The poor quality of site location data makes the use of them in assessing impacts by leasing alternative essentially meaningless. BLM and USFWS need to add strongly worded caveats to their direct and indirect impacts analysis stating that site counts are of poor quality, rather than using certainty language in the impacts discussion.	The SEIS has been updated to include text that notes issues related to the accuracy of previously documented AHRS sites.
Brisson	Brook	Trustees for Alaska	80131	431	Extractive resource activities, such as mining and drilling, can impact cultural sites causing significant landscape alterations, which can directly affect the physical integrity of archeological sites. This is particularly concerning for Indigenous communities for whom these sites are culturally and spiritually significant. For example, the Gwich'in of Alaska and Canada "would experience cultural and spiritual impacts resulting from any development of the program area".(1186) Along with impacting sacred landscapes, extractive activities can lead to the destruction of sacred sites and artifacts, effectively erasing tangible records of cultural heritage. This loss erodes cultural diversity and hampers our understanding of human history and evolution. In addition to the direct physical impacts, extractive industries can induce indirect effects on cultural sites through environmental changes. For instance, the pollution from these activities can contaminate local ecosystems, affecting the flora and fauna integral to the Indigenous peoples' ways of life and cultural practices. Similarly, the noise and light pollution associated with these industries can disrupt traditional ways of life, further contributing to cultural erosion (1186) DSEIS at 3-358.	Comment noted, these impacts have been addressed in the SEIS, particularly in Impacts Common to All Action Alternatives starting in Section 3.4.2. In addition, possible impacts from potential future projects will be analyzed if and when they are proposed.
Brisson	Brook	Trustees for Alaska	80131	433	It is also important to recognize that archeological and cultural preservation in the Arctic extends beyond just safeguarding artifacts or sites. It is an essential commitment to honoring Indigenous Peoples' past, respecting their diverse cultural heritage, and ensuring the enduring presence of their traditions and knowledge despite the challenges posed by resource extraction and climate change. By prioritizing the protection of archeological and cultural resources, we can contribute to the resilience and cultural sustainability of the Iñupiat, Inuvialuit, and Gwich'in people and foster a deeper understanding and appreciation of their unique cultural identities for generations to come.	Comment noted, these impacts have been addressed in the SEIS, particularly in Impacts Common to All Action Alternatives starting in Section 3.4.2. In addition, possible impacts from potential future projects will be analyzed if and when they are proposed.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	434	We recognize that BLM and FWS included more information on the cultural use of the Coastal Plain for the Iñupiat, Gwich'in, and Inuvialuit and are glad to see the agencies including this knowledge and information in describing the existing cultural resources.(1187) However, Groups previously raised the lack of baseline information necessary to comply with these mandates.(1188) Groups remain concerned that the draft SEIS still does not provide the information necessary to accurately describe and analyze the impacts to cultural and archaeological resources in a meaningful way. Currently the draft SEIS explains that "vast inland areas of the program area have received little to no systematic investigation for cultural resources"(1189) and that the absence of Iñupiat and Gwich'in cultural resources "can be attributed to lack of research and documentation rather than that they do not exist."(1190) As the agencies cannot protect unknown sites or analyze the impacts to those sites based on the projected oil and gas activities for each alternative, we incorporate our previous comments here and urge the agencies to complete a full, comprehensive study of the Coastal Plain's cultural archeological and historic resources. This is especially important given that lease stipulations designed to protect areas where cultural resource sites are most likely to occur, contain exceptions allowing for development on a case-by-case basis.(1191) In pursuing comprehensive surveys, the agencies should seek NHPA consultation with all Gwich'in communities along the historic migration path of the Porcupine Caribou Herd and all impacted Iñupiat and Inuvialuit communities as well.(1192) (1187) Id. at 3-279 to 3-283, 3-289. (1188) 2019 DEIS Comment Letter at 330-32; 2021 Scoping Comment Letter at 184-86. (1189) DSEIS at 3-276. (1190) Id. at 3-286. (1191) Id. at 3-287; Id. at 2-7-13. (1192) 36 C.F.R. § 800.8(c)(3).	This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require an additional NEPA analysis. At that time, the BLM and USFWS will determine which baseline studies may be necessary.
Brisson	Brook	Trustees for Alaska	80131	435	The NHPA also requires agencies to ensure that properties listed or eligible to be listed on the National Historic Register are preserved to maintain their historic, archaeological, architectural, and cultural values.(1193) The Sacred Place Where Life Begins is a traditional cultural landscape eligible for the National Register of Historic Places that must be considered in the Section 106 process. (1193) 54 U.S.C. § 306102(b)(2).	Comment noted, all eligible properties are considered in Section 106 process
Heslep	Alison	-	80164	25	#11 Ch/Sec/Sub-sec 3.4.2 Title Impacts Common to All Action Alternatives Comment(s) The final paragraph on page no. "3-286/3-287" could use some detail. Right now, it does not state where the ROP and lease stipulations required to achieve "adequate investigation, such as surveys, consultation, and interviews..." are present in the text. Recommendation(s) The BLM should specify the relevant ROPs and stipulations in this section, and how they will ensure that "no potential adverse effects" will occur. These include ROP 29 (p. 2-61), ROP 36 (p. 2-69), and ROP 40 (p. 2-74). A second bracket should be added to the end of sentence 1 of the paragraph: (See ROP 29, ROP 36, and ROP 40) Also, add a new paragraph underneath the final paragraph on p. 3-286 to discuss how the ROPs would ensure there are no adverse effects.	Relevant ROP and lease stipulations are discussed in the following paragraph, including ROP 29 and 40. ROP 36 is addressed in the Section 3.4.3 Subsistence. The ROPs alone would not ensure there are no adverse effects but additional avoidance, minimization, and mitigation measures may be needed as discussed in the sentence regarding Section 106 process.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	142	BLM and USFWS must include Traditional Knowledge in this section. Beginning this section with a summary of Indigenous oral histories concerning the ancestral use of the Coastal Plain would be a logical introduction as a majority of the Coastal Plain cultural resources are Indigenous. Instead, BLM and USFWS chose a Eurocentric view of culture focused on archaeology. BLM and USFWS refer readers to "Section 3.4.4 Sociocultural Systems, [which] also provides a [Euro-centric] cultural overview of the Iñupiat and Gwich'in that is relevant to this section."(255) (255) Draft SEIS at 3-275. It is not clear why BLM/USFWS are unwilling to include an Indigenous view of Coastal Plain heritage. Emphatically, the agencies need to include an Indigenous voice in the cultural resources section and throughout each of the Social Systems sections. Over the past three years, the Tribes have presented BLM and USFWS with substantial information on cultural resources and guidance on where to find more information on the Indigenous heritage of the Coastal Plain. BLM and USFWS must better incorporate and respond to the information and concerns presented by the Tribes regarding cultural resources.	The Final SEIS has been updated to incorporate additional Indigenous Knowledge from existing data sources as well as new information provided during the public comment period.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	147	In assessing impacts to previously documented sites, BLM and USFWS limited their assessment of these sites to the idea that they are discrete entities and not part of a larger whole. This misguided concept has resulted in an incomplete analysis because it is likely many of the sites are contributing features to archaeological and historic districts and cultural landscapes. BLM and USFWS must correct their faulty reasoning in this draft SEIS and analyze the previously documented sites as contributing features to districts and landscapes.	This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require an additional NEPA analysis. At that time, the BLM and USFWS will determine which baseline studies may be necessary.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	148	The Tribes are providing two more Gwich'in names and a correction for another one relevant to the program area: 1) Chuu Choh Vee' Taii "Shore of Big Water Trail" (Hulahula River) 2) Ch'ùhnjik "Charcoal Creek" (Kongakut River) 3) Vyàhk'it Gwinjik "Camping Areas Trail" (Canning River) Gwich'in Elders and Cultural Experts provided these place names at the February 27-March 3, 2023 Gwich'in Knowledge Workshop in Fairbanks, Alaska. At this workshop, Gwich'in clarified that "Snare Place River" is a mistranslation of Vyàhk'it Gwinjik for the Canning River. At this workshop, Gwich'in Elders and Cultural Experts explained that these three rivers were important traditional travel routes to the coast and ancestral sites were all along them.	Map 3-44 and SEIS text updated to include additional Hulahula River place name and corrected place name for Canning River. Place name for Kongakut River was not added as it was beyond the 5-mile cut off.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	149	There is a documented sacred site that extends into the program area and BLM and USFWS need to update the Ethnographic Resources subsection. The Tribes identified a sacred site under Executive Order 13007. BLM and USFWS need to include any identified sacred site in the draft SEIS analysis along with how the agencies intend to avoid adversely affecting its physical integrity, as required by EO 13007 Section 1(a)2. The draft SEIS states, "During the original Draft EIS public comment period, the Native Village of Venetie Tribal Government, a cooperating agency, identified preliminary landscape characteristics they believe [emphasis added] are associated with the Iizhik Gwats'an Gwandaii Goodlit."(267) The word choice of "believe" is condescending and dismissive of the knowledge of Gwich'in Elders and Cultural Experts. A better word choice would be "know." (267) Draft SEIS at 3-282.	Use of the word "believe" has been removed. Text has been revised to read: "... preliminary landscape characteristics associated with..." High level information regarding the sacred site has been incorporated into the Ethnographic Resources subsection.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	150	The Tribes have provided the following information to BLM and USFWS concerning the Iizhik Gwats'an Gwandaii Goodlit, but restate it here because it is important for BLM, USFWS, and their contractor(s) to understand that the Gwich'in know Iizhik Gwats'an Gwandaii Goodlit is significant under the following National Register of Historic Places Criteria and retains integrity based on the following rationale: Significance. The Gwich'in view the Iizhik Gwats'an Gwandaii Goodlit as being significant at the local level under Criteria A, B, C, and D for the National Register of Historic Places. The Gwich'in associate the Iizhik Gwats'an Gwandaii Goodlit with the "events [of caribou calving, waterfowl nesting, and ancestral trade] that have made a significant contribution to the broad patterns of our history."(268) "Our history" refers to the Gwich'in's history. Criterion A is an associative criterion. This means the origins of significance are with the Gwich'in who value and identify with this place. The caribou calving, waterfowl nesting, and ancestral trade are significant at the local level. (268) 36 CFR § 60.4(a). The Gwich'in associate the Iizhik Gwats'an Gwandaii Goodlit with the lives of ancestral cultural leaders like Ch'eeghwalti' who are significant in their past for making lasting peace with the Iñupiat.(269) Criterion B is an associative criterion. The association with peace-making ancestral Gwich'in leaders is significant at the local level. (269) See Id. § 60.4(b) (Criteria B for association with "lives of persons significant in our past").	The Section 106 process for the Coastal Plain SEIS has been finalized through the development of the PA. Consideration of NRHP eligibility may occur in the future during implementation of the PA or in consideration of site-specific projects and subsequent NEPA analysis.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	151	If BLM, USFWS, and their contractor(s) document the Iizhik Gwats'an Gwandaii Goodlit as a district, they will need to evaluate the place under Criterion C as part of it applies to districts. National Register Bulletin No. 15 states, the portion of Criteria C that includes an "entity whose components may lack individual distinction"(270) "refers to districts."(271) The bulletin further clarifies the relationship between Criterion C and districts stating, "districts that are significant will usually meet the last portion of Criterion C plus Criterion A, Criterion B, other portions of Criterion C, or Criterion D."(272) To reiterate the regulatory language for Criterion C, National Register Bulletin No. 15 affirms: "A district can comprise both features that lack individual distinction and individually distinctive features that serve as focal points. It may even be considered eligible if all of the components lack individual distinction, provided that the grouping achieves significance as a whole within its historic context."(273) (270) See Id. § 60.4(c). (271) National Park Service, National Register Bulletin No. 15 How to Apply the National Register Criteria for Evaluation 20 (1997), https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf . (272) Id. at 5. (273) Id.	A PA for Section 106 compliance was developed for the 2020 ROD and remains in effect. Consideration of NRHP eligibility may occur in the future during implementation of the PA or in consideration of site-specific projects and subsequent NEPA analysis.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	152	Based on archaeological evidence, oral histories, and ethnographic data, ancestral sites along traditional Gwich'in travel routes to the coast and in proximity to traditional trade fair locations are significant because they "have yielded, or may be likely to yield, information important in prehistory or history [of the Gwich'in]." (274) Criterion D is informational. The Tribes' heritage is more than a research topic for archaeologists. It is their way of life through millennia, something they continue to teach to younger and future generations. National Register Bulletin No. 15 explains Criteria D's two requirements, both of which must be met for National Register eligibility: "[1] The property must have, or have had, information to contribute to our understanding of human history or prehistory, and [2] The information must be considered important."(275) (274) 36 CFR § 60.4(d). (275) National Register Bulletin No. 15 at 21. "Our" in these requirements and in the other National Register Criteria refer to the group of people who perceive the property as important. At the local level of significance, this means places important to the Gwich'in. The Iizhik Gwats'an Gwandaii Goodlit is significant to the Gwich'in because the place has information that contributes to the Gwich'in's understanding of their history. When evaluating places under Criterion D, BLM, USFWS, and their contractor(s) need to assess the significance of information of these places as they yield information important to the Gwich'in and their history. It is the Gwich'in's history that contextualizes these places. While a place may not be significant to archaeological research, it may be significant to the Gwich'in's understanding of their history. Note, the first requirement states, "contribute to our understanding of human history."(276) (276) Id. (emphasis added).	A PA for Section 106 compliance was developed for the 2020 ROD and remains in effect. Consideration of NRHP eligibility may occur in the future during implementation of the PA or in consideration of site-specific projects and subsequent NEPA analysis.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	153	Additional Levels of Significance. Being a cultural landscape or traditional cultural place (TCP) adds another level of significance to a historic property. The Iizhik Gwats'an Gwandaii Goodlit (The Sacred Place Where Life Begins) is a traditional/ethnographic cultural landscape and has aspects of a TCP: 1) The Sacred Place Where Life Begins is "a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or that exhibit other cultural or aesthetic values" as defined by the National Park Service's 1998 Guide to Cultural Landscape Reports.(277) (277) National Park Service, Guide to Cultural Landscape Reports (1998), https://www.nps.gov/parkhistory/online_books/nps/cl_reports.pdf . 2) The Sacred Place Where Life Begins has the following landscape characteristics: "natural systems and features, land use, cultural traditions, circulation, topography, vegetation, views and vistas, and archaeological sites" as defined by the National Park Service's 1998 Guide to Cultural Landscape Reports.(278) BLM, USFWS, and their contractor(s) can refer to the Tribes' comments on the cultural resources section they submitted for the draft EIS for BLM's Coastal Plain Leasing Program for reasoning behind these characteristics. (278) Id. 3) The Gwich'in are a "living community" that associate The Sacred Place Where Life Begins as a traditional cultural place with their cultural practices and beliefs that are rooted in their history and are important in maintaining their continuing cultural identity in accordance with the National Park Service's National Register Bulletin No. 38 Guidelines for Evaluating and Documenting Traditional Cultural Properties.(279) (279) National Park Service, National Register Bulletin No. 38 Guidelines for Evaluating and Documenting Traditional Cultural Properties, https://www.nps.gov/subjects/nationalregister/upload/NRB38-Completenessweb.pdf .	A PA for Section 106 compliance was developed for the 2020 ROD and remains in effect. Additional consideration of cultural landscapes or TCPs may occur in the future during implementation of the PA or in consideration of site-specific projects and subsequent NEPA analysis. Specific development and documentation of landscapes characteristics will also be addressed later in the PA implementation process.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	154	Integrity. BLM, USFWS, and their contractor(s) must recognize and include the Gwich'in's expertise in assessing the integrity of the Iizhik Gwats'an Gwandaii Goodlit. As the ones who attach meaning to this place, the Gwich'in know Iizhik Gwats'an Gwandaii Goodlit retains the following aspects of integrity, which convey its significance: 1) Location: The Sacred Place Where Life Begins is still in the same place as it has always been; 2) Setting: The Sacred Place Where Life Begins exists in the same environmental and physiographic conditions as it always has; 3) Feeling: The Gwich'in feel the same way about The Sacred Place Where Life Begins as they always have; 4) Association: The Gwich'in continue to associate with The Sacred Place Where Life Begins as their traditions dictate. They avoid the place except for ancestral annual travel to the coast for trade; and 5) Relationship: The Gwich'in have the same relationship with The Sacred Place Where Life Begins as they always have. (280) (280) Id. at 11.	A PA for Section 106 compliance was developed for the 2020 ROD and remains in effect. Consideration of NRHP eligibility may occur in the future during implementation of the PA or in consideration of site-specific projects and subsequent NEPA analysis.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	155	Contributing Elements. The Gwich'in view Iizhik Gwats'an Gwandaii Goodlit as potentially having the following contributing elements: 1) Caribou calving grounds, 2) Waterfowl nesting areas, 3) Vegetation the wildlife rely upon, 4) Rivers and their adjacent lands as ancestral travel routes and the lands along them as individuals traveling to trade had to rely on these lands as they made their way to the coast, 5) Ancestral sites along the travel routes, 6) Gwich'in named places, and 7) Traditional use areas. This should be enough information for BLM and USFWS to understand that the Gwich'in know the Iizhik Gwats'an Gwandaii Goodlit cultural landscape and do not just believe in it. 7. Draft SEIS Word Choices Minimize Indigenous Knowledge	A PA for Section 106 compliance was developed for the 2020 ROD and remains in effect. Consideration of NRHP eligibility may occur in the future during implementation of the PA or in consideration of site-specific projects and subsequent NEPA analysis.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	156	BLM and USFWS trivializes Gwich'in knowledge of effects to their cultural heritage, through the use of "believe" throughout the draft SEIS. For example, the draft SEIS states: Particularly for the Gwich'in, who hold the program area as sacred ground to their culture and as Iizhik Gwats'an Gwandaii Goodlit (Gwich'in Steering Committee 2004), the presence of development in the program area would constitute a cultural impact on the Gwich'in. This is because they believe that development in the program area would harm the caribou and other migratory resources (such as waterfowl) that migrate to the Coastal Plain to give birth.(281) (281) Draft SEIS at 3-286 (emphasis added). The phrase "[t]his is because they believe..." is an egregious example of implicit bias. None of the western science predictions for effects are prefaced in the draft SEIS with "scientists believe...." In the western science tradition, "knowledge" implies information that has been vetted by experience (or experiment), and "belief" implies convictions founded only on emotion. That the caribou will be affected by development in their calving grounds is not a "belief," it is "knowledge" based on thousands of years of observation. BLM and USFWS's word choice here is troubling. The words "belief" and "believe" appear seventy times in the Social Systems sections all in reference to Indigenous knowledge while "belief" and "believe" appear just three times in the rest of the draft SEIS in reference to western science. BLM and USFWS need to reevaluate their word choices throughout the SEIS for their biases in minimizing Indigenous knowledge. Lastly, BLM and USFWS need to apply the cultural resources Lease Stipulations and Required Operating Procedures for Alternative D to all the Alternatives.	Use of the word "believe" has been removed.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Flanagan	Taylor	-	80320	4	The program area includes 93 sites identified in the Alaska Heritage Resources Survey (AHRS), 56 Traditional Land Use Inventory (TLUI) sites, 3 Revised Statute (RS) trails, and 126 Indigenous place names.(14) Of the AHRS sites, only a handful have been evaluated for NRHP eligibility.(15) Further surveys should be conducted to determine whether the remaining sites can be added to the national register. Additionally, the SEIS states that the vast majority of previously identified sites have been on the coast or near major waterways.(16) This is not because historical sites do not exist inland, but rather because prior surveys have focused primarily on these regions.(17) In fact, older, better-preserved sites are more likely to be found farther inland, where there is less erosion and the landscape is more stable.(18) More comprehensive surveying of the region is needed in order to determine whether or not further historic sites exist in the project area. Indeed, Section 106 of the NHPA requires such an additional study. (14) SEIS, Section 3.4.2. (15) SEIS, 3-277. (16) SEIS, 3-276. (17) SIES, 3-276. (18) SEIS, 3-279.	This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require an additional NEPA analysis. At that time, the BLM and USFWS will determine which baseline studies may be necessary.
Flanagan	Taylor	-	80320	7	The SEIS makes clear that both the Iñupiat and the Gwich'in understand the program area to be an ethnographic resource due to subsistence use, historic locations, natural features, cultural traditions, and the Gwich'in sense of self.(29) The very identity of these native people is tied to the land in its entirety. The agency concludes that "the presence of development in the program area would constitute a cultural impact on the Gwich'in."(30) In short, any development, regardless of restrictions or lease stipulations, would inherently damage a culturally significant resource - the project area itself. (26) SEIS, 3-286. (27) SEIS, 3-280. (28) SEIS, 3-280. (29) SEIS, 3-281-282. (30) SEIS, 3-286. But despite this conclusion, the agency does not offer any option to completely mitigate these effects. The agency does not seriously consider the option to offer no land for lease sale. They instead fall back to Section 106 PA, in which the Gwich'in directly asked to account for this cultural resource.(31) Again, the PA has yet to be finalized and published, but it is our hope that the Gwich'in's request is honored in full. Anything less than considering the project area as an ethnographic resource fails to acknowledge the lived experience of the people there. (31) SEIS, 3-286.	A PA for Section 106 compliance was developed for the 2020 ROD and remains in effect. Consideration of NRHP eligibility may occur in the future during implementation of the PA or in consideration of site-specific projects and subsequent NEPA analysis.
Itchoak	Karlin	-	80450	4	Listing of the Coastal Plain as a traditional cultural landscape on the National Register of Historical Places and complete mitigation of all climate impacts and meaningful Federal investment in a just transitio or Alaskan native communities to a clean energy economy. In the final SEIS, the agencies must fully incorporate and create space for traditional, indigenous knowledge, indigenous world views and future shared stewardship by indigenous peoples through inclusion and adoption of a maximally protective alternative.	The Final SEIS has been updated to incorporate additional Indigenous Knowledge from existing data sources as well as new information provided during the public comment period.

U.3.13 Cumulative Impacts

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Miller	Debbie	-	80286	1	While the SEIS addressed potential impacts and "indirect effects" that were "reasonably foreseeable", I found that the SEIS was particularly weak and abbreviated on the cumulative impacts. On Page 6-7 there are 14 potential impacts listed that you considered. Four important potential impacts were not included on that list and should be added: 1) Potential cumulative impacts from the anticipated development complex of permanent roads, pipelines, infrastructure, traffic, and noisy facilities on the wildlife and local residents; 2) Potential impacts on adjacent lands that are designated wilderness, and impacts on the de facto wilderness character of the coastal plain --- the wilderness value of the Arctic Refuge was a primary purpose when the Arctic Range was first set aside in 1960; 3) Potential cumulative impacts from oil and hazardous waste spills on the coastal plain and the water quality of the rivers, ponds, and wetlands; 4) Potential impacts and legal ramifications of breaking treaty obligations with Canada and other nations, concerning polar bears, caribou and migratory birds.	Appendix G, Table G-1 details the past, present, and reasonably foreseeable future actions considered in the cumulative analysis, including transportation projects. Chapter 3 has been updated to ensure consideration of potential cumulative impacts.
Schoen	John	-	45576	1	In 2017, Congress, through the budget reconciliation process, included oil and gas development as a new purpose. It is my professional opinion that it would be very difficult, and likely impossible, to achieve the original purposes for which the Arctic Refuge was established and also allow a major oil and gas development program within the coastal plain of the Arctic Refuge. This is also the assessment of many scientists that have experience on Alaska's North Slope, and similar concerns have been raised by The Wildlife Society as well as the National Research Council (NRC) during their 2003 study of the Cumulative Effects of Oil and Gas Activities on Alaska's North Slope.	All action alternatives are designed to meet the purpose and need, and to account for all purposes of the Arctic National Wildlife Refuge.
Schoen	John	-	45576	2	Cumulative environmental effects of oil and gas development: Alaska is the only state in the nation that encompasses an arctic ecosystem. Terrestrial and marine arctic ecosystems and the fish and wildlife associated with them represent an important part of our nation's biodiversity. Over the last four decades, there has been unprecedented industrial development in Alaska's arctic. How are these changes being monitored so that we can respond with intelligent and responsible resource management and appropriate mitigation? To be responsive to this rapid change and meet our resource stewardship and socio-economic responsibilities, we need a clear plan of action based on a foundation of science.	Appendix G, Table G-1 details the past, present, and reasonably foreseeable future actions considered in the cumulative analysis, including transportation projects.
Schoen	John	-	45576	3	Petroleum exploration and development across Alaska's North Slope has changed the ecosystem significantly. Future exploration and development will continue to impact natural ecological processes and also impact many populations of fish and wildlife and the people who depend on those resources. In 2003, the National Research Council (NRC) of the National Academies published their report on the cumulative effects of oil and gas activities on Alaska's North Slope. This comprehensive report documented many accumulated effects to date. Excerpts from this report regarding key environmental effects follows. - Nearly all the roads, pads, pipelines and other infrastructure ever built are still in place. The environmental effects of this infrastructure not only include the actual physical footprint but also have impact at varying distances from the structures. - Roads have had far-reaching and complex effects on the North Slope including direct effect on tundra and indirect effects caused by dust, roadside flooding, thawing of permafrost, and roadside snow accumulation. Roads and activity on them alter animal habitat and behavior and wildland values and increase human access. - Surface erosion, water flow and tundra vegetation have been altered by extensive off-road travel. Some of that damage has persisted for decades. - Cumulative impacts of oil and gas activities have had an influence on animal populations on the North Slope. Garbage and food have resulted in higher densities of predators, including foxes, ravens, and glaucous gulls. These predators prey on the eggs, nestlings, and fledglings of birds increasing mortality on some species such as black brant, snow geese, eiders, and shorebirds. - The combined effects of industrial activity and infrastructure and the stress imposed by insects in some summers reduced calf production in the Central Arctic caribou herd and may have contributed to the reduction of herd size from 1992 through 1995...the spread of industrial activity into other areas caribou use for calving and insect relief, especially to the east where the coastal plain is narrower, would likely affect reproductive success... - If recent warming trends in climate continue, as many projections indicate, the effects will accumulate over the next century to alter the extent and timing of sea ice, affect the distribution and abundance of marine and terrestrial plants and animals, and affect permafrost as well as the usefulness of current oil-field technologies and how they affect the environment. - The Gwich'in Indians of northeast Alaska and northwest Canada have a centuries-old nutritional and cultural relationship with the Porcupine Caribou Herd. Most Gwich'in oppose any oil development that would threaten the herd, especially on the calving ground, which they consider sacred, and thereby threaten their cultural survival. - Many activities associated with oil development have compromised wildland and scenic values over large areas.	Information from the 2003 NRC report is incorporated into the analysis of direct, indirect, and cumulative impacts sections resources, as appropriate. See Chapter 3.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoen	John	-	45576	4	One of the major concerns about the proposed oil and gas activities in the coastal plain of the Arctic refuge is the concept that development will be restricted to 2,000 acres. This is a highly misleading concept. The NRC described that the cumulative effects of oil infrastructure are not limited to the gravel footprint. The NRC determined that extent of development on the North Slope has affected 1,000 square miles but the gravel footprint only covers 10,000 acres. This discrepancy needs to be explicitly addressed in the EIS process. For example, scientists have determined that caribou (particularly large groups of cows and calves) are displaced by pipelines in combination with roads in the Prudhoe Bay development area. Thus, the area of impact is far greater than the immediate infrastructure.	The cumulative impacts area of analysis varies by resource and is defined to account for potential impacts surface disturbing activities (see Appendix G).
Schoen	John	-	45576	5	A detailed analysis of various development alternatives be undertaken so as to accurately assess and predict cumulative effects of development activities and infrastructure on wildlife (including birds, mammals and fish), vegetation communities, hydrology, and other ecosystem processes. The indirect influence of pads, airstrips, roads, pipelines, and aircraft and vehicular traffic have significant impacts on animal behavior, displacement, and stress. These stressors must be accounted for and a robust program of research and monitoring should be established so as to develop an adaptive management strategy to reduce impacts to the natural resources of the coastal plain.	At this programmatic scale, it is unknown where development might occur and at what levels, and therefore direct and indirect impacts cannot be analyzed on a site-specific basis within the SEIS. They are analyzed for the program area based on the hypothetical development scenario. Cumulative impacts are analyzed at the programmatic level and disclose potential impacts (see Appendix G).
Schoen	John	-	45576	21	The need for a comprehensive cumulative effects analysis and whole arctic conservation strategy: The 2003 NRC report on cumulative effects of oil and gas activities on Alaska' North Slope states that: "To date, decisions have generally been made without a comprehensive slope-wide plan and regulatory strategy that identify the scope, intensity, direction and consequences of industrial activities judged acceptable." This is a major concern. The coastal plain of the Arctic Refuge represents only 5 percent of the North Slope coastal plain. Nearly 90 percent of the Arctic coastal plain in Alaska is not permanently protected and remains available for development. Not only does the Arctic Refuge coastal plain provide an important scientific control area for long-term research and monitoring, it is the only such area available in our nation's only arctic ecosystem. Managing the Arctic Refuge for its wildlife and ecosystem values and as a baseline for monitoring climate change will be important for increasing our scientific understanding of Arctic ecology and achieving balance between conservation and development across America's Arctic.	At the programmatic level, the SEIS considers the effects of climate change and discloses the impacts on relevant resource topics, see Chapter 3 and Appendix G. Information from the NRC 2003 study are incorporated into cumulative effects analysis as appropriate throughout Chapter 3.
Schoen	John	-	45576	24	Based on my experience and understanding of the cumulative effects of oil and gas exploration and development on Alaska's North Slope, I do not believe these impacts have been adequately considered for the Arctic Refuge. Without an adequate scientific understanding of the cumulative effects of development, it is unlikely that mitigation of impacts to this complex ecosystem will be effective. Conserving the Arctic Refuge is not simply an issue of attempting to mitigate impacts to caribou. Safeguarding the ecological integrity of the refuge is far more complex. Despite improved drilling technology, there is the significant probability that industrial development would change the coastal plain of the refuge from a wild, naturally functioning ecosystem to a human-dominated, industrial complex. The consequences of such an action are clearly not compatible with the original purposes for which the refuge was established.	At this programmatic scale, qualitative analysis is not appropriate as it is unknown where development might occur and at what levels, therefore, the cumulative impacts analysis can only disclose potential impacts.
McCulley	Alice	Tr'ondëk Hwëch'in	80073	5	Give full and meaningful consideration for indirect impacts to all subsistence users throughout the range of the PCH, including Canadian subsistence harvesters. To be comprehensive and credible, cumulative impact assessments within the SEIS need to include impacts to all Indigenous people who rely on the PCH. However, acknowledging use and potential impacts, is not adequate. Proposed mitigations must be linked to the impact they are trying to address, backed by evidence of their efficacy. This requires an understanding and respect for all Indigenous cultures and knowledge with connections to the land and wildlife under consideration and a commitment by BLM and USFWS to meaningful participation by all Indigenous organizations with a (direct or indirect) connection to the area. Canadian Indigenous governments, including Monde* Hwech'in, have consistently provided lengthy submissions outlining socio-cultural connections with the PCH. These submissions have not been referenced in the SEIS and, at a minimum, should be included in cumulative impact assessments for the SEIS as well as in Environmental Assessments (EAs) for future development activities.	The SEIS includes an analysis of transboundary impacts in Chapter 3, where applicable. At the programmatic level, a quantitative analysis is not possible, but qualitative impacts, including cumulative are considered within transboundary impacts.
Brisson	Brook	Trustees for Alaska	80131	24	Overall, and as explained in greater detail below for specific resources, the cumulative impacts analysis does not contain sufficient "quantified or detailed information." It still largely consists of general statements regarding potential effects and contains very little substantive information. In large part, the draft SEIS's presentation of past, present, and reasonably foreseeable future actions consists of a table generally describing categories of activities and actions and a bulleted list of reasonably foreseeable future projects.(202) It also includes a list of identified projects, but again with an inadequate analysis of the actual cumulative impacts from the identified project and an oil and gas program on the Coastal Plain.(203) However, there is very little discussion with any level of specificity of the past, present, and reasonably foreseeable future actions.(204) (202) DSEIS App. F at F-7 to F-8. (203) Id. at F-8 to F-11. (204) Id. at F-7 to F-11.	At this programmatic scale, quantitative analysis is not appropriate as it is unknown where development might occur and at what levels. Cumulative impacts are analyzed at the programmatic level and disclose potential impacts from past, present, and reasonably foreseeable future actions (see Appendix G). Specific projects are referenced within the Cumulative Impacts analysis in Chapter 3 where appropriate.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	25	In the resource sections, the agencies at times avoid discussing the cumulative impacts associated with reasonably foreseeable post-lease oil and gas activity by suggesting those would be discussed in later NEPA analysis or indicating there is not sufficient information to analyze the impacts.(205) In others, it avoids the discussion by making mere conclusory statements about the cumulative impacts. These statements acknowledge the potential for cumulative impacts, but fail to provide any explanation or analysis of what they would be.(206) At most, in many of the resource sections, the cumulative impacts analysis consists of pointing out that alternatives allowing the most land development would have the most cumulative impacts, which fails to meaningfully explain any cumulative impacts. As discussed in other sections of these comments, the agencies also fail throughout the draft SEIS to analyze how climate change will have cumulative impacts on various resources in their cumulative impacts sections. At times, the draft SEIS points to other analyses (e.g., the GMT2 decision in the Reserve) without further explaining impacts or provides conclusory statements that climate change will exacerbate any cumulative impacts.(207) That is not a sufficient analysis of those cumulative impacts and also ignores that there may be differences based specifically on the unique conditions on the Coastal Plain versus the NPRA. Overall, this approach is insufficient to satisfy NEPA and fails to acknowledge and account for the considerable cumulative impacts of oil and gas activities.(208) The agencies must identify and describe, with specificity, the projects and impacts. (205) See, e.g., DSEIS at 1-3. (206) See, e.g., id. at 3-50 (stating potential cumulative impacts on the acoustic environment "would affect the community of Kaktovik and individuals throughout the program area, as well as noise-sensitive resources along aircraft flight paths outside of the program area," but providing no explanation of how); 3-82 (acknowledging that previous seismic exploration has affected surface vegetation and permafrost and that future additional seismic exploration would have similar impacts, but fails to analyze how the future actions would have a synergistic effect on vegetation and permafrost); 3-111 (recognizing past spills and potential future spills would have cumulative impacts, but instead of explaining what those would be, merely stating that spills are cleaned up according to regulations). (207) See, e.g., id. at 3-79 to -80; Id. App. F at F-11. (208) See Nat'l Res. Council of the Nat'l Academies, Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope, Committee on Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope 10, 156 (2003).	At this programmatic scale, quantitative analysis is not appropriate as it is unknown where development might occur and at what levels. Cumulative impacts are analyzed at the programmatic level and disclose potential impacts from past, present, and reasonably foreseeable future actions (see Appendix G). Project-specific cumulative impacts that take into account site specific conditions and would occur during NEPA analysis of proposed on-the-ground oil and gas activities. Site-specific analysis lends itself to quantitative forecasts for noted concerns and synergistic impacts.
Brisson	Brook	Trustees for Alaska	80131	26	The draft SEIS defines the geographic scope of the cumulative impacts analysis as the program areas and the North Slope of Alaska, but notes that for some resources the impacts areas is broader. (209) But in setting out the agency's approach to impacts analysis, it is clear that the agencies are limiting the impacts analysis improperly in places to the program area, i.e., the Coastal Plain.(210) BLM and FWS must properly define the geographic scope of its impacts analysis by resource issues, taking into consideration geographic formations, habitat and resources uses, migrations, and landscapes. (209) DSEIS App. F at F-6. (210) See, e.g., id. App. F at F-18 (limiting consideration of impacts to soils even though there could be changes to soils, permafrost, and drainage to adjacent areas); F-19 (limiting consideration of impacts to sand and gravel to the program area even though gravel could come from outside the program area for oil and gas activities); F-23 (limiting consideration of the impacts to water resources to the program area even though there could be impacts to nearshore marine waters and adjacent hydrology); F-27 (limiting consideration of impacts to wetlands and vegetation even though there could be impacts to adjacent wetlands and the vegetation systems they support); F-32 (limiting consideration of the impacts to birds to the North Slope west to the NPRA's eastern boundary and east to Canada even though many of the birds that use the Coastal Plain are migratory and use other areas of the Arctic Refuge and Alaska); F-34 (only considering the ranges of the Porcupine and Central Arctic Caribou herds and not discussing the geographic area for other species); F-41 (limiting the sociocultural systems and environmental justice impacts to only four identified communities); F-43 & F-45 (limiting the recreation and visual impacts to the program area despite the impacts that could occur to people recreating on adjacent areas, including the Wilderness); F-46 (limiting transportation impacts to the program area despite the impacts the developing roads could have on lands outside of the Coastal Plain, particular to the west).	The cumulative impacts area of analysis varies by resource to incorporate potential impacts that specific to that resource (see Appendix G). The cumulative impacts area of analysis can be bounded geographically and temporally, and can exceed the boundaries of the Proposed Action if that is necessary to account for potential impacts to specific resources. The cumulative effects area for each resource as defined in Appendix F takes into account the larger landscape where determined necessary by subject matter experts.
Brisson	Brook	Trustees for Alaska	80131	27	BLM and FWS defined the temporal scope of the cumulative impacts analysis as from the 1970s through realization of the hypothetical development scenario, which it estimated at 50 years.(211) This is an insufficient temporal scope as it does not necessarily account for full reclamation, including ongoing monitoring, of oil and gas development on the Coastal Plain. It is also inconsistent with the development scenario that BLM and FWS put forth. The draft SEIS indicates it could be as many as 85 years after the ROD is signed before abandonment and reclamation could occur.(212) The temporal scope of the cumulative impacts should be at least as long as the timeline the agency identifies could follow its implementation of an oil and gas program. (211) Id. App. F at F-6. (212) Id. App. B at B-9.	Timeframes are based on the duration of the direct and indirect effects of the proposed action and alternatives, rather than the duration of the action itself. NEPA requires that cumulative impacts consider all past, present and reasonably foreseeable actions.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	28	BLM and FWS also improperly exclude oil and gas activities on non-federal lands, including State of Alaska lands adjacent to the Coastal Plain and private lands within the boundaries of the Coastal Plain, asserting that it is not reasonably foreseeable and will be considered once project proposals are available.(213) These both should be analyzed to the extent practicable. (213) Id. App. F at F-11 to F-12.	Appendix G, Section G.3.3 has been revised to remove the exclusion language related to oil and gas activities on non-federal lands. While there are no current proposals for oil and gas activities on Native corporation lands within the Coastal Plain or State of Alaska lands adjoining the Coastal Plain, the cumulative analysis addresses the general possibility of future exploration and development on these lands.
Brisson	Brook	Trustees for Alaska	80131	29	It is unclear from the description whether the agencies are excluding consideration of projects on State lands or only inholdings owned by Alaska Native Corporations. There are continuing plans for oil and gas activities to occur on adjacent State lands and the agencies must analyze them. Additionally, excluding oil and gas activities and development on inholdings held by Kaktovik Inupiat Corp. and Arctic Slope Regional Corp. is unreasonable. BLM, FWS, and DOI are well aware that ASRC has advocated for years to be able to develop these lands, and were a leading voice in advocating for passage of the Tax Act.(214) It is therefore reasonably foreseeable that the corporations will push for development on their lands. We also note that provisions of the Chandler Lake Agreement grant ASRC extensive rights to develop and sell sand and gravel from their lands. BLM and FWS must analyze the likely impacts from the exercise of those rights as currently written.(215) Because facilities to support a Coastal Plain oil and gas program could be located on these lands (such as gravel mines, pipelines, road, central processing facilities), BLM and FWS must analyze that at the very least as part of the reasonably foreseeable development scenario.(216) Related to this point, the agencies seem to acknowledge that uses of these lands related to and oil and gas program will increase.(217) The agencies' conclusions and assumptions are, therefore, inconsistent. (214) Written Testimony of Richard K. Glenn, Executive Vice President for Lands and Natural Resources, Arctic Slope Regional Corporation (Nov. 2, 2017). (215) See Chandler Lake Land Exchange Agreement, Appendix 2. C., pp. 29-32 (1983); see also supra Section V.D & VI.M (216) Groups question whether location or development of these lands is permitted. See supra Section V.D & VI.M. If BLM's position is that it is, BLM cannot skirt its obligations to consider the impacts of development of the lands to support BLM's proposal. (217) DSEIS App. F at F-36 (assuming that "[d]emand for ancillary uses and permits . . . will increase in conjunction with oil and gas development").	Appendix G, Section G.3.3 has been revised to remove the exclusion language related to oil and gas activities on non-federal lands. While there are no current proposals for oil and gas activities on Native corporation lands within the Coastal Plain or State of Alaska lands adjoining the Coastal Plain, the cumulative analysis addresses the general possibility of future exploration and development on these lands.
Brisson	Brook	Trustees for Alaska	80131	30	Finally, the draft SEIS states that the permitting requirements of other agencies would reduce cumulative impacts.(218) BLM and FWS make the assertion without any analysis, citation, or support. Unless BLM and FWS actually analyze the impacts resulting from various agencies permitting requirements, they cannot make this conclusion. They must explain the basis for this conclusion, including conducting the necessary analysis to support it. (218) Id. App. F at F-4.	This statement has been revised in Appendix G.3.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Baran	Eleanor	-	80165	4	The impacts from the proposed Leasing Program would not be concentrated in the Affected Environment, or the Coastal Plain, as GHG emissions "disperse relatively quickly and evenly over time scales." As such, transboundary impacts of the exploration, development, and production of fossil fuels from the Leasing Program must be considered. In the Leasing SEIS, oil and gas production from the Coastal Plain is estimated to peak at 100,000 barrels per day from each field after three years of the initial output. The project will commit the US to more oil and gas development over the next 35 years, which includes emitting GHGs throughout the timeline of the project. When considering the destructive impacts of climate change, the US (and the planet as a whole) should refrain from committing to expanding the development of fossil fuels in any future timeframe. The SEIS should mention or explain how the extracted fossil fuels from the Coastal Plain will enter the broader market and supply chain, or exactly where the extracted oil, gas, and liquid natural gas (LNG) will be shipped to for further refinery and production. The Leasing SEIS considers projected government revenue and assumes all oil and gas revenue will go toward federal and state reserves. , Therefore, all extracted oil and gas from the Coastal Plain will have impact outside the Affected Environment and may contribute to adverse state, regional, national, and transboundary impacts. The Coastal Plain contains an estimated 6.687 BBO, 7.041 TCF of gas, and 0.225 billion barrels of LNG. The cumulative impacts of mining these resources include the "production, subsequent consumption of petroleum resources that would contribute to climate change." To provide further context for the harmful implications of consuming petroleum resources at this scale, the Students again turn to the EPA's GHG Equivalencies Tool to put the estimated GHG equivalencies of oil into perspective. To begin, there are 42 gallons of crude oil within one barrel, meaning 6.687 BBO would produce 280,854,000,000 gallons of crude oil. According to the Energy Information Administration (EIA), one 42-gallon barrel of crude oil equates to 19-20 gallons of motor gasoline after refining. Therefore, roughly 130,396,500 gallons of motor gasoline (if we average 19.5 gallons of motor gasoline per barrel of crude oil) lay in the Coastal Plain reserves. The EPA's GHG Equivalencies Tool calculates this amount of motor gasoline to have 1,158,833,969 metric tons of CO2 equivalent, which further equates to: i. The GHG emissions of 247,875,585 gasoline-powered passenger vehicles driven for one year. ii. 225,479,560 homes' electricity use for one year. iii. 310 natural gas-fired power plants in one year (EPA GHG). With 335 million people in the U.S. today, all the fossil fuel reserves in the Coastal Plain (if extracted today) could power roughly 67% of homes' electricity for a year. While the Students recognize that these calculated emissions would not be released all at once, they do contain significant environmental consequences over the 35-year timescale of the Leasing Program. Further, the Students did not calculate the GHG equivalencies of the estimated natural gas and LNG reserves in the Coastal Plain, as it is outside the scope of this comment. However, the students strongly encourage the BLM to consider the GHG equivalencies of the natural gas and LNG reserves from the Coastal Plain in the Leasing SEIS, to provide a full analysis of the harmful impacts of burning fossil fuels on the global climate.	Comment regarding market and revenue effects should be considered by the Socioeconomic specialist. A detailed climate analysis was performed in Section 3.2.1 of the Draft SEIS. Emissions of GHGS were quantified for oil development and production activities as well as the downstream transportation, processing, and combustion of produced oil under each action alternative. Additionally, emissions from the change in foreign oil consumption due to oil production in the program area were estimated relative to the No Action Alternative. The estimated monetary value of the global climate change impacts of the total net GHG emissions under each alternative was estimated using social cost of GHG metrics. The SC-GHG estimates represent the monetary/economic value of global climate change impacts including but not limited to changes in property damage from increased flood risk from natural disasters, disruption of energy systems, risk of conflict, environmental migration, human health effects, net agricultural productivity, and the value of ecosystem services. Moreover, the annual net emissions under each alternative were put in context through comparison to other emission sources that the public can more readily comprehend (e.g., number of homes' energy use for one year, gallons of gasoline consumed).
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	129	The impacts of seismic surveys conducted during the winter must be analyzed as part of considering the impacts of an oil and gas development program for the Coastal Plain. Seismic surveys taking place during the winter would industrialize the Coastal Plain. Source and receiver lines typically would be placed just a few hundred feet apart. Some of the significant adverse impacts from seismic activities include: vibration, noise, destruction of habitat for ground nesting birds, and other impacts on wildlife including denning polar bears, damage to the tundra by moving heavy equipment including a camp, operating a mobile camp with hundreds of people including use of large amounts of water for camp operations in a water-limited region, and effects on wildlife energetics and activities by performing seismic work during and beyond the short winter season. Seismic impacts on leases awarded through any Coastal Plain lease sales are a reasonably foreseeable impact that must be fully analyzed under NEPA. BLM/USFWS has access to specific information about seismic impacts and industry's seismic plans through the applications for seismic activities submitted to BLM in 2018 and 2020. Specifically, the agencies must include in the SEIS an analysis of cumulative impacts from seismic exploration such as the Marsh Creek East Seismic Exploration program proposed by Kaktovik Iñupiat Corporation ("KIC").	Appendix C details the different types of seismic exploration that are analyzed in the SEIS. The area in which seismic exploration would be allowed varies by alternative, and is analyzed accordingly in Chapter 3. Table G-2 has been revised to note the potential for geological and geophysical surveys, to include seismic exploration. The SEIS has been updated to include additional discussion of seismic exploration, where appropriate.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Councill	80190	130	KIC proposed to conduct intensive 3D seismic exploration during the 2020-2021 winter season on approximately 848 square miles of land, including 450,000 acres of the Coastal Plain within the Arctic Refuge. KIC proposed to conduct seismic exploration using approximately 3,237 miles of source lines spaced 1,320 feet apart with sampling taking place every 27.5 feet along each line, and the data would be gathered along 6,459 miles of receiver lines spaced 660 feet apart and placed perpendicular to the source lines. Twelve 90,000-pound tracked vibrator vehicles would have operated at the same time. Each of the lines would have been traveled multiple times by crews for placement and retrieval of the lines and nodes, and the work would have been conducted around the clock with two 12-hour personnel shifts per day. In order to carry out these activities, KIC proposed to drag 40 to 50 trailers 136.5 miles across the tundra from Deadhorse to Kaktovik or, as a less preferred alternative, along a shorter sea ice route. This massive mobilization would have required camp facilities for a workforce of up to 180 workers, along with fuel tanks, incinerators, tracked vehicles, trucks, and other industrial equipment. The camp would not be set up in just one location. It was proposed to be moved 1 to 2 miles every 5 to 7 days throughout the winter season. Thousands of gallons of water would have been obtained through snow melting and/or water withdrawals from nearby lakes. Temporary airstrips would need to be constructed on lakes and/or tundra for resupplies and personnel transport. Numerous airplane takeoffs and landings would occur throughout the winter season. In addition, about 450 to 600 helicopter takeoffs and landings would occur during a 15-day summer debris cleanup operation. BLM published a draft Environmental Assessment ("EA") for KIC's proposal. The Tribes submitted many concerns with KIC's proposal and the agency's analysis of impacts. The large-scale and intensive seismic exploration activities proposed as part of the KIC Seismic Program are likely to cause severe harm to Gwich'in Tribes, subsistence, caribou, migratory birds, vegetation, soils, historic properties, tribal cultural and archaeological resources, and other important resources and values of the Coastal Plain. The impacts from KIC's seismic proposal are not speculative and should be used by BLM to analyze the cumulative impacts of the leasing program. As discussed in the Tribes' litigation against BLM, in the 2019 Final EIS, the agency improperly segmented its review for the leasing program from the NEPA review for pre-leasing seismic activities. Failure of the agencies to integrate and analyze the known and reasonably foreseeable impacts from seismic activities in the SEIS would constitute a continued violation of NEPA.	Appendix C details the different types of seismic exploration that are analyzed in the SEIS. The area in which seismic exploration would be allowed varies by alternative, and is analyzed accordingly in Chapter 3. The specifics of where and what seismic exploration would occur are unknown at the programmatic level and therefore, analysis of detailed activities from other proposed projects would be speculative.
Wood	Ruth	-	80254	3	I am concerned that the compound impacts of development and climate change will damage the tundra to an extent where it cannot be reclaimed or repaired. How do you reclaim vegetation in such a fragile environment where the environment has evolved over thousands of years? What will BLM and USF&WS do as the climate keeps warming, as water levels rise, as permafrost melts?	At the programmatic level, the SEIS considers the effects of climate change and discloses the impacts on relevant resource topics, including vegetation and permafrost. See Chapter 3 and Appendix G.
Wardlow	Cyndi	The Wildlife Society- Alaska Chapter	80261	8	The draft SEIS must conduct a thorough, quantitative, cumulative effects analysis of oil and gas exploration and development on the coastal plain of the Arctic Refuge. The Arctic Refuge is one of the wildest, most ecologically intact, and important protected areas in the world. The draft SEIS fails to thoroughly assess cumulative effects of a leasing program and subsequent development in the context of oil and gas activity, as well as a changing climate, across Arctic Alaska and the circumpolar Arctic. The draft SEIS provides only a cursory analysis of individual industrial and climate impacts and does not explicitly assess how these impacts are additive and interactive across the Arctic landscape and beyond. For example, there is an inadequate cumulative effects analysis for caribou and polar bear populations that use the coastal plain of the Refuge. Resident Southern Beaufort Sea Polar bears-listed as "threatened" under the Endangered Species Act-are already struggling with deteriorating sea ice and increasingly are forced to den on land on the eastern Beaufort Sea coast, including the coastal plain of the Arctic Refuge. In fact, three-fourths of the Refuge coastal plain is designated as critical habitat for polar bears, which are highly vulnerable to disturbance due to oil and gas activities.	Site-specific and quantifiable analyses are not possible at the programmatic level. While Section 20001(c)(1) of PL 115-97, a lease does grant the lessee certain rights to drill for and extract oil and gas subject to further environmental review and reasonable regulation, including applicable laws, terms, conditions, and stipulations of the lease. Future site specific analysis conducted under these regulations would include an analysis of impacts from climate change on resources.
Jorgenson	Janet	-	80336	8	CUMULATIVE IMPACTS SECTION Page 3-129 says that the maximum development scenario, Alternative B, would impact only 1% of the project area and the rest remains 'wilderness'. This is not true due to fragmentation.	The analysis area for cumulative impacts is not restricted to the maximum development scenario. The boundaries for cumulative impacts analysis varies by resource as described in Appendix G.
Peter	Enei Begaye	-	80387	4	And the impacts of the cumulative contribution to climate change that drilling -- any amount of drilling in the North Slope will have, new drilling in particular. We are seeing the impacts of climate change here in Fairbanks and along the Yukon River as communities are suffering from lack of salmon. These impacts, too, of climate change and the impacts beyond the Coastal Plain have not been adequately addressed within the supplemental EIS.	At the programmatic level, the SEIS considers the effects of climate change and discloses the impacts on relevant resource topics. See Chapter 3 and Appendix G.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	520	The draft SEIS also fails to address relevant reasonably foreseeable future actions (RFFAs). Adequate analysis of impacts to the Gwich'in and other subsistence communities will require accounting for all RFFAs impacting the Porcupine Caribou Herd and Central Arctic Herd throughout their migratory ranges. But the agencies do not address RFFAs beyond the program area.(1420) In addition, the agencies fail to identify the annual snow road proposed by Kaktovik Inupiat Corporation as an RFFA that is relevant to the agencies' cumulative impact analysis. The proposed road would span from the western Coastal Plain boundary to the community of Kaktovik impacting subsistence resources such as polar bears, birds, fish, and caribou.(1421) In addition, as the application for the road indicates, Kaktovik Inupiat Corporation may seek to build a permanent gravel road; a potential permanent road is not analyzed. We also note that the agencies have not included analysis of the Point Thomson and Liberty developments in their analysis as addressed in our prior comments.(1422) (1420) Id. at E-19 (failing to address RFFAs south of the Brooks Range such as the Ambler Road or projects in Canada). (1421) Id. App. F at F-10. (1422) 2019 DEIS Comment Letter at 314.	The RFFAs described in Appendix G are not limited to the Coastal Plain and include both existing and proposed projects within the larger North Slope area. Point Thomson is included under the heading "Oil and Gas Exploration, Development, and Production." The Liberty Project has been added to Appendix F under this subheading. The snow trail proposed by Kaktovik is included in Appendix F under the subheading "Transportation." The current request for a ROW is for a snow trail, not a permanent gravel road, and therefore, consideration of a more permanent road would be speculative at this time. Projects south of the Brooks Range were considered and determined too distant to contribute to cumulative effects in the Coastal Plain. There are currently no known proposed projects in Canada that could be considered under cumulative effects.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	28	The draft SEIS also fails to address relevant reasonably foreseeable future actions (RFFAs) in the cumulative impacts analysis. Adequate analysis of impacts to the Gwich'in requires accounting for all RFFAs impacting the Porcupine Caribou Herd throughout their migratory ranges. But the agencies do not address RFFAs beyond the program area.(90) In addition, the agencies fail to identify the annual snow road proposed by Kaktovik Inupiat Corporation as an RFFA that is relevant to the agencies' cumulative impact analysis. The proposed road could impact caribou.(91) In addition, the application for the road indicates that Kaktovik Inupiat Corporation may seek to build a permanent gravel road; a potential permanent road is not analyzed. We also note that the agencies have not included analysis of the Point Thomson and Liberty developments in their analysis. These must be included in the analysis in the final SEIS. (90) DSEIS at E-19 (failing to address RFFAs south of the Brooks Range such as the Ambler Road or projects in Canada). (91) DSEIS App. F at F-10.	The RFFAs described in Appendix G are not limited to the Coastal Plain and include both existing and proposed projects within the larger North Slope area. Point Thomson is included under the heading "Oil and Gas Exploration, Development, and Production." The Liberty Project has been added to Appendix G under this subheading. The snow trail proposed by Kaktovik is included in Appendix F under the subheading "Transportation." The current request for a ROW is for a snow trail, not a permanent gravel road, and therefore, consideration of a more permanent road would be speculative at this time. Projects south of the Brooks Range were considered and determined too distant to contribute to cumulative effects in the Coastal Plain. There are currently no known proposed projects in Canada that could be considered under cumulative effects.
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U.3.14 Direct/Indirect Impacts

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	19723	1	Because the 2017 Tax Act did not override any of the laws that protect the coastal plain, it is imperative that the SEIS take into consideration ALL aspects of potential impacts to lands, water, wildlife, communities and climate from a leasing program in this sacred area. Although the draft SEIS has made some improvements to protect the Arctic Refuge, it is not enough.	Potential direct, indirect, and cumulative impacts are detailed for all resources in Chapter 3 of the SEIS.
Cecere	Doug	-	22126	1	Oil leasing and development would destroy the wild quality of both the coastal plain and adjacent designated Wilderness lands in the Arctic Refuge. The Draft SEIS fails to truthfully explain what would be lost by opening the Arctic Refuge to oil leasing and development.	Section 3.4.7 describes the impacts from the oil and gas program on special designations to include, wilderness characteristics, qualities, and values.
Dunson	Debra	-	32367	1	It is known that the industrialization of the Arctic Refuge by oil and gas companies will degrade and pollute essential habitat within the coastal plain and adjacent designated wilderness lands. I opine that the draft SEIS has failed to address this potential damage in a realistic manner and should include science-based projections that utilize information obtained from comparable projects in the Arctic.	Impacts to resources are detailed in Chapter 3 and are based on best-available science. Chapter 3 analyses were updated with new data and references received during the public comment period and best-available data.
Grannemann	Ken	-	62117	1	Observations on the original EIS and the draft Supplemental EIS: 1) Skewed nature of impact statements: Experience shows that EIS's generally downplay negative environmental impacts while benefits are generally overestimated. I believe this to be true of both the original EIS and its supplement. The documents have the tone of assuming that leasing and development must occur rather than looking at the full suite of trade-offs of various alternatives.	PL 115-97 direct the BLM to establish an oil and gas program on the Coastal Plain. The SEIS analyzes the potential impact of the oil and gas program, both beneficial and adverse.
La Point	Dr. Thomas	-	62522	1	The draft does not address the overall environmental or climate impacts of development and the NSO stipulations are far too undefined and allow for too much interpretation.	Section 3.2.1 describes potential impacts on climate from the proposed oil and gas program.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Warren	Greg	-	72931	17	Draft SEIS: The Draft SEIS does not address the affected environment and environmental consequences of proposed actions on natural diversity. Comment: The Draft SEIS fails to define and address impacts to natural diversity. Understanding the meaning of, "To conserve fish and wildlife populations and habitats in their natural diversity" is foundational to protecting Arctic National Wildlife Refuge biological values. The coastal plain is the biological heart of the entire refuge. Yet, the Draft SEIS fails to assess the effects of the proposed action and alternatives on natural diversity. Table 1-2 Section of Draft SEIS describing impacts associated with Arctic Refuge purposes suggests that impacts on natural diversity is found in each resource impacts discussion, but effects of oil development activities and facilities on the conservation of the natural interactions, dynamics, cycles, and processes within and between species is not addressed in the Draft SEIS. The Draft SEIS indirectly provides a sense of effects of development on natural diversity when discussing effects on Subsistence Uses and Resources. The Draft SEIS in Section 3.4.3-Subsistence Uses and Resources-describes additional impacts of development on fish and wildlife. The Draft SEIS describes impacts such as (1) noise and traffic associated with the leasing program could potentially affect the availability of resources, such as caribou, marine mammals, furbearers, and small land mammals, fish, and migratory birds; (2) potential impacts on caribou availability including displacement of caribou from areas of heavy oil and gas activity, diversion of caribou from their usual migratory routes, and skittish behavior, which results in reduced harvest opportunities; and, (3) in addition to large land mammals, furbearers, such as wolf and wolverine, may avoid areas of heavy traffic, drilling noise, seismic testing, and other activity. The described impacts indicate that oil and gas development would significantly degrade the fish and wildlife and their habitat natural diversity. The EIS must address conserving fish and wildlife populations and habitats in their natural diversity. The Draft SEIS effects statements do not demonstrate that the Draft SEIS took a hard look at impacts, including addressing interrelationships between physical and biological components. The BLM must disclose how development proposals affect predator-prey relationships, connectivity and habitat fragmentation, vegetation distribution, ecological integrity, and other ecosystem dynamics and change. One of the specific purposes of the Arctic National Wildlife Refuge as established in ANILCA is to ensure "water quality and necessary water quantity within the refuge" to conserve fish, wildlife and habitats. This purpose recognizes the protection of water resources is central to conservation of fish and wildlife and their encompassing ecological systems and processes. This purpose establishes an explicit, but unquantified, Federal reserved water right for surface waters and groundwater in the Refuge for fish and wildlife populations and habitats. Coastal Plain development as envisioned in the Coastal Plain Leasing Draft SEIS action alternatives would result in multiple seismic surveys, numerous rights-of-way being established, and at least one industrial scale oil and gas production facility. In addition, adjacent state lands and waters are also slated for similar developments. The direct, indirect, and cumulative effects of these developments on the Arctic National Wildlife Range Coastal Plain would be significant and materially interfere with or detract from Arctic National Wildlife Refuge purposes of conserving fish and wildlife populations and habitats in their natural diversity, including conserving the polar bear. The best approach to conserving the polar bear within the Arctic National Wildlife Refuge is by avoiding actions that may adversely affect the species. Coastal plain areas free of human disturbance for maternal den sites and unobstructed access between den sites and the coast are essential to conservation of the southern Beaufort Sea polar bear population. Preventing adverse modification of the Arctic Refuge's Coastal Plain, other North Slope Coastal Plain areas, barrier islands, river bank drainages, and coastal bluffs that occur at the interface of mainland and marine habitat is key to the species' survival and recovery because these habitats receive proportionally greater use for denning than other areas. Further, these terrestrial habitats are likely to become ever more important because the predicted, continued loss of arctic sea ice due to climate change is expected to result in an increase in the number of polar bears denning on land in northern Alaska. During recent years, the proportion of dens on land has already increased in relation to dens excavated out on sea ice. Polar bear use of terrestrial areas during the summer and early fall is also expected to increase as climate change causes the distance between the southern edge of the pack ice and coastal denning areas to increase during the summer. The purposes of the Endangered Species Act (ESA) of 1973 (16 U.S.C. § 1531 et seq.) are to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved." The ESA also established as a policy of Congress an affirmative responsibility that "all federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of this Act." Conserve is defined under the ESA to mean "the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary." Three-fourths of the refuge Coastal Plain is designated as critical habitat for polar bears, which is highly vulnerable to disturbance from oil and gas activities. The direct and indirect impacts of the Draft SEIS proposed action and alternatives if implemented would adversely affect polar bears that utilize the Arctic Refuge and Beaufort Sea. In general, oil and gas development on the Arctic Refuge is incompatible with conserving fish and wildlife populations and habitats in their natural diversity, including protecting polar bear critical habitat.	The SEIS addresses natural diversity in the analysis of natural and biological resources, to include description of the impacts noted by the commenter as appropriate for a programmatic-level analysis. More specific impacts would be addressed at the project-specific level.

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Robertson	C.K.	The Episcopal Church	79229	2	This comment period for the proposed Supplement Environmental Impact Statement (SEIS) is a key moment for the Biden administration to re-assess the environmental impacts of the Arctic Refuge oil and gas leasing program. It is crucial that the SEIS takes into consideration all aspects of the potential impact to lands, waters, wildlife, communities, and the broader climate.	Potential direct, indirect, and cumulative impacts are detailed for all resources in Chapter 3 of the SEIS.
Raynolds	Martha	-	79238	2	• Impacts are limited to 2,000 acres, but the SEIS only includes impacts from direct gravel placement on the tundra. Indirect impacts far outweigh the direct impacts of gravel (Raynolds et al. 2014), and should be considered in the calculations of impacted area. Raynolds, M. K., D. A. Walker, K. J. Ambrosius, J. Brown, K. R. Everett, M. Kanevskiy, G. P. Kofinas, V. E. Romanovsky, Y. Shur, and P. J. Webber. 2014. Cumulative geocological effects of 62 years of infrastructure and climate change in ice-rich permafrost landscapes, Prudhoe Bay Oilfield, Alaska. Global Change Biology 20:1211-1224.	Direct impacts are limited to areas of disturbance and gravel placement. Indirect and cumulative impacts are analyzed by resource in Chapter 3 of the SEIS. Raynolds et al. 2014 is incorporated throughout these analyses.
Pletnikoff	Karen	-	79850	1	The SEIS fails to fully consider the extent and range of global and local impacts of further oil and gas development, from which predictable and measurable additional costs will be imposed on American citizens that reside in rural and coastal Alaskan communities. Some examples of these costs are: the loss of subsistence and commercial hunting and fishing opportunities through more frequent and more powerful storms and other weather conditions that prevent travel and transportation and destroy vessels, ATVs, harbors, roads and trails and other property and infrastructure; sea level rise resulting in new and greater coastal and riverine erosion, more widespread and faster permafrost melt, and infrastructure protection and replacement costs; the de facto federal taking of ANCSA Village Corporation and private citizens lands and property that these climate impacts will cause. These and other anticipatable but unanalyzed harms that would all stem from this avoidable federal action are ignored completely or only mentioned.	The potential impacts of the oil and gas program on climate change are detailed in Section 3.2.1. These impacts of climate change on Alaskan communities are considered in multiple sections within Chapter 3, including Subsistence (Section 3.4.3) Sociocultural Systems (Section 3.4.4), and Environmental Justice (Section 3.4.5).
Pletnikoff	Karen	-	79850	2	Additional areas where insufficient information is considered includes: the impacts to distant users dependent on the threatened and endangered species whose habitat will be reduced by every but the No Action Alternative; the fact that failure to fully analyzed the exacerbated climate impacts prevent the responsible agencies from meeting their requirements to inform, consult with and mitigate impacts of their actions to all effected Tribes in the United States, including those Tribal members that rely on the highly migratory species that use these refuge lands but reside elsewhere in Alaska. These impacted Tribes include those that reside along the coasts in at the island passes where the vessels to develop these lease will pass by, without the benefit of understanding local sea lane and natural resource use.	The analysis is based on the best available science and information provided by Tribes during consultation and public involvement periods.
Freitas	Benjamin	World Wildlife Fund	79957	18	DOI must analyze the impacts of an oil and gas leasing program on Arctic Refuge resources and uses to "ensure[] that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast."(35) The agencies are required to take a hard look at the direct, indirect, and cumulative impacts of the entire oil and gas program, including at seismic in the leasing program SEIS. BLM's 2019 Final EIS failed to provide the requisite hard look required by NEPA at oil and gas leasing and foreseeable impacts of development to polar bears and polar bear habitat, shipping, economics, and climate change. While the agencies have made some improvements in the Draft SEIS, more must be done for the agencies to properly describe the baseline information and fully analyze direct, indirect, and cumulative impacts of an oil and gas leasing program. (35) Marsh v. Or. Nat. Res. Council, 490 U.S. 360, 371 (1989). WWF provides the agencies with the following comments to ensure that the analysis of impacts is robust, scientifically accurate, and fully considers all direct, indirect, and cumulative impacts of an oil and gas program in the Coastal Plain. Specifically, WWF recommends improvements to the Draft SEIS analysis with respect to polar bears and polar bear habitat, marine shipping, economics, and climate change. Full consideration and analysis of impacts should lead DOI to the conclusion that an oil and gas program for the Coastal Plain is improper.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Analysis in Chapter 3 has been revised in consideration of comments and new information and references received during the public comment period.
Carlson	Michaela	-	79993	1	The NEPA documentation needs to more thoroughly depict the potential impacts to the habitat itself, this part of NEPA is often over looked by both preparers and reviewers. The government has a duty to protect species and habitat. Additionally, this area is at extreme risk from climate change impacts and therefore should be considered a threatened landscape in itself. The connection between the future impacts on the landscape and the many species that depend on it have not been properly displayed or considered. Rather they have been looked at separately under a singular lens and not in whole consideration.	Habitat impacts are discussed in Chapter 3, both general changes to vegetation and wetlands, as well as where it pertains to specific resources.

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Durack	Ryan	-	80109	24	In general, and except as concerns the need to assess significance of impact for the limited purposes of s 810 of ANILCA, there is very little discussion of the significance of impact in the SDEIS.(2) Such discussion as there is generally relates to the relative impacts associated with the different leasing options or discussion of the relative impacts of leasing activities vs the impacts of climate change. As might be expected, the SDEIS generally confirms that Alternative A will have no impact on transboundary uses although users of transboundary or shared resources may continue to experience impacts from other sources. By the same token, the SDEIS recognizes that the leasing Alternatives that allow the opportunity to lease larger area of the program area (Alternatives B and C) will have greater impacts than Alternative D, especially where those alternatives offer access to leasing opportunities within the calving grounds of the PCH (see especially at 3- 321). Similarly, the DSEIS sometimes concludes that the risks posed by climate change will be more significant than that posed by leasing activities (see, for example at 3- 268 with respect to the SBS polar bear population and 3- 116 with respect to wetlands). A somewhat different point is that the SDEIS sometimes offers the observation that the implications of a particular leasing Alternative may or may not be expected to have population- level impacts.(3) It is unclear to us if the authors of the DSEIS consider this term to be a proxy for a measure of significant impact (at least in relation to biological resources). But while this relative ranking of the Alternatives is useful, the DSEIS still does not provide an assessment of significance of impact and thus provides no indication of whether or not each of the action Alternatives will trigger the legal thresholds referenced above. Similarly, the relative ranking of risks (eg as between leasing activities and climate change) may be useful but it does not tell us whether the cumulative effect of these impacts will be significant (or not), nor whether it will trigger the legal thresholds referred to above. In sum, we continue to request, as we have in previous submissions, that the revised SEIS reaches conclusions as to the significance of impact with respect to transboundary resources and uses. This is especially important with respect to species that are highly valued by Inuvialuit for cultural and subsistence purposes including but not limited to caribou, polar bear and aquatic species including the beluga whale and Dolly Varden (char). (2) One exception is this somewhat speculative comment with respect to activities within Canada that may cause significant impacts within the program area: Transboundary impacts in other locations (e.g., Canada) may significantly affect the abundance of birds in the program area. At 3- 191. (3) See, for example, the discussion of Arctic cisco (at 3- 148), birds (at 3- 170), pinnipeds (at 3- 253), polar bears (at 3- 257), a range of resources (at 3- 312), and PCH (at 3- 326). Such an assessment is necessary in order to ensure that the ultimate Record of Decision is fully informed by the implications of each leasing Alternative for the observance of the legal obligations of the United States.	Unlike an Environmental Assessment, an EIS need not support a determination of whether significant impacts would occur. EISs may use other terminology to assess the degree of reasonably foreseeable impacts.
Brisson	Brook	Trustees for Alaska	80131	1	Unfortunately, the draft SEIS remains deficient in key areas, including the range of alternatives, the descriptions of the baseline information about resources, the analysis of the impacts of an oil and gas program on Coastal Plain resources and users, and the mitigation measures proposed. These issues are described in detail below. As explained, the final SEIS, including the alternatives analyzed and the analysis of impacts, must be strengthened to ensure compliance with NEPA, ANILCA, the Arctic Refuge's purposes, and many other laws.	The Final SEIS range of alternatives has been updated based on public input requesting maximum protection for key resources and new updated information. Alternative D2, a sub-alternative of D, has been developed based on public input requesting maximum protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. The Final SEIS has been updated to include references and sources provided during the public comment period. The analyses are based on the best available information and appropriate for a programmatic analysis.
Brisson	Brook	Trustees for Alaska	80131	31	BLM and FWS should better analyze and quantify the potential impacts to resources on the Coastal Plain. The draft SEIS does not include impact criteria and overall rankings that show the level of impact by alternative for impacts to all resources. The draft SEIS provides no explanation for the absence of impact criteria or analysis of the level of impacts by alternative. Through its NPR-A planning and leasing efforts, BLM has developed specific impact criteria for nearly every resource present on the Coastal Plain. These criteria were well-vetted and subject to public comment in the GMT1 Final SEIS and GMT2 Draft SEIS.(219) There is seemingly no reason that BLM and FWS should refuse to use impact criteria in the SEIS for the Coastal Plain. (219) See Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth 1 Development Project: Final Supplemental Environmental Impact Statement, Vol. 1 219-220 (2014); see also Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth 2 Development Project: Draft Supplemental Environmental Impact Statement 235 (2018) ("A resource specific description of the impact criteria is included in each section of this chapter."). The absence of that information makes it difficult to compare impacts between alternatives or synthesize information in a manner that is easy for the public to understand. It is critical that BLM and FWS provide a meaningful analysis, conclusions for the levels of impacts, and a comparison between alternatives for all resources. BLM and FWS must fully inform the public of the level and nature of impacts anticipated for all resources; indeed, BLM has fully quantified these impacts in the past. BLM and FWS should not eliminate these determinations to avoid making findings of significance.	Impact indicators and associated resource impacts are discussed by resource in Appendix G, Approach to the Analysis.

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Brisson	Brook	Trustees for Alaska	80131	45	There are several areas in the draft SEIS where BLM and FWS do not analyze impacts on the basis that it will analyze those impacts at later stages. Examples where they defer analyzing impacts include the following: - BLM and FWS did not complete a health impact assessment at this stage or analyze the potential health impacts of the oil and gas program, and instead plan to conduct that analysis as part of its analysis of later development projects.(268) - BLM and FWS failed to conduct a visual resource impacts analysis and state they will do so in post-leasing NEPA processes.(269) - BLM and FWS inadequately considered the impacts of water withdrawals for oil and gas on water quantity despite there being much more information available to the agencies regarding water quantity on the Coastal Plain and wildlife and habitat needs related to stream flow and water quantity. - BLM and FWS largely deferred analyzing the foreseeable impacts of seismic exploration, despite having more information to analyze those impacts at this point based on recent proposals. - BLM and FWS failed to analyze the foreseeable impacts to air quality that would be likely to occur from oil and gas activities on the Coastal Plain. (268) DSEIS at 3-432. (269) DSEIS at 3-404. BLM and FWS should include an analysis of these impacts in the SEIS and not defer until a later phase.	Site-specific analyses will be performed at the time a project is proposed to determine actual impacts on resources. A Health Impact Assessment (HIA) may be conducted when specific projects are proposed after lease sales are conducted. While HIAs can aid NEPA analyses for certain types of actions, they are not required. Agencies have discretion as to how to analyze health impacts. The proposed action is for a lease action only, which has potential indirect impacts on visual resources from post-lease activities. Subsequent post-lease activities would require NEPA analysis before occurring. At that time, a detailed list of structures and developments would be available for a proposed activity. The BLM would identify the contrast between existing landscape conditions and proposed changes to the landscape with the aid of simulations, viewshed analyses, and artificial light at night studies, as appropriate. Appendix C explains the different types of seismic exploration that are analyzed in the SEIS. Seismic exploration can be done absent a lease (a lease is not required). Separate NEPA analyses would be completed for all seismic exploration applications, which would analyze the site-specific impacts. A determination of specific water withdrawals and impacts on water quantity cannot be made until site-specific development activities are proposed. Analysis of GHG emissions has been included in the SEIS.
Brisson	Brook	Trustees for Alaska	80131	48	Second, BLM and FWS inappropriately defer conducting a more robust analysis of seismic exploration. BLM and FWS claim they cannot determine the precise extent of effects for exploration and claims the impacts of exploration in general are unknown.(274) They assert that the impacts of seismic are speculative until the agency receives an actual application because too much is unknown about the location, scope, scale, and timing of that proposal.(275) In looking at the impacts of seismic, BLM and FWS claim they relied on assumptions based on the previous two-dimensional (2D) seismic exploration that occurred in the 1980s on the Coastal Plain.(276) (274) Id. at 1-2 to -3. (275) DSEIS at 3-1. (276) Id. at 3-1 to -2.	Site-specific analysis of seismic exploration is not possible at the programmatic level as the location(s) of proposed on-the-ground exploration are unknown. Potential impacts from seismic exploration are considered and analyzed in Chapter 3 based on the different types of seismic exploration detailed in Appendix C.
Brisson	Brook	Trustees for Alaska	80131	50	BLM and FWS's assertions ignore that there have already been recent proposals from SAExploration, Inc. (SAE) and other entities to conduct 3-dimensional (3D) seismic exploration across the Coastal Plain of the Arctic Refuge.	The SAExploration project was withdrawn in 2020. A Kaktovik Inupiat Corporation seismic project was paused until the SEIS process is complete.
Brisson	Brook	Trustees for Alaska	80131	51	While SAE's proposal might have covered a broader area than might be allowed under the new restrictions in Alternatives C and D, that proposal is still indicative of the likely proposal that would occur for the lands open to leasing and could be used to develop a hypothetical seismic exploration scenario for each alternative. The draft SEIS claims that the hypothetical development scenario looks at exploration, but the RFD scenario contains only a handful of very cursory references to a few components that might be part of a seismic exploration proposal.(282) There is no indication BLM and FWS took a hard look at any of the potential direct, indirect, and cumulative impacts of a likely seismic exploration proposal, as required by NEPA. The draft SEIS's reliance on the historical 2D seismic surveys to estimate impacts also ignores that the technology likely to be used would be 3D surveys, similar to SAE's proposal, which occur in much denser grid patterns than 2D surveys. Seismic surveys, whether before or after leasing, will stamp a grid on the entire Coastal Plain, directly affect hundreds of thousands of acres, altering or destroying vegetation, causing subsidence and erosion, and creating ponds and surface water channels whose effects can run far afield from vehicle tracks. As the draft SEIS acknowledges, some of these impacts are permanent. (283) BLM and FWS have far more information on which to base a more robust analysis of the likely impacts of seismic exploration than is included in the draft SEIS. BLM and FWS also do not take into consideration the fact that seismic exploration is often not a one-time operation. It is frequently repeated as companies move to subsequent oil and gas phases, with exploration in some areas occurring on a yearly basis. It also does not take into account the proprietary nature of seismic survey results, which can lead to different companies repeating seismic surveys across the same area to gather their own data. These seismic operations, particularly when considered cumulatively, have the potential to significantly degrade permafrost, destroy vegetation, and dramatically alter hydrologic systems. The analysis does not account for these combined impacts. Overall, because BLM and FWS did not engage in this analysis, their consideration of potential mitigation measures to mitigate the impacts of any seismic exploration - let alone repeated seismic exploration over the life of a field, which should also be limited - is lacking in the draft SEIS. The analysis in the final SEIS should be revised to include the analysis of the foreseeable impacts of seismic exploration under each alternative. (282) DSEIS App. B at B-12 to -13. (283) Id. at 3-55.	The SAExploration project was withdrawn in 2020. A Kaktovik Inupiat Corporation seismic project was paused until the SEIS process is complete. Detailed analyses are not possible at the programmatic level as the specifics of type and location of seismic exploration are unknown. Separate NEPA analyses would be completed for all seismic exploration applications and would analyze the site-specific impacts.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Baran	Eleanor	-	80165	2	In its decision-making process for the Leasing Program within ANWR's Coastal Plain, BLM must consider the direct, indirect, and cumulative impacts of climate change on the local area specifically, as studies have repeatedly shown that climate change resulting from GHG emissions from fossil fuels will have considerable implications for the Arctic. In their Assessment Report, the IPCC concluded that "it is virtually certain that the Arctic will continue to warm more than global surface temperature, with high confidence above two times the rate of global warming" and that Alaska "is projected to see an increase of 4-8 degrees Fahrenheit in the highest daily maximum temperature compared to the 1981-2000 average under high GHG scenarios." The Students recognize the difficulty in pinpointing the direct emissions that result in adverse impacts on a local scale. However, the international science community and the IPCC repeatedly state that GHG emissions from fossil fuels adversely impact the Arctic, and therefore, emissions and their associated impacts from any oil and gas development in the region must be considered by the BLM.While the issuance of oil and gas leases under the directives of Section 2000(c)(1) of PL 115-97 would have no direct impacts on the environment, as a lease itself has no environmental effects, and the granted rights to drill for and extract oil and gas remain subject to further environmental review and reasonable regulation as stated in the Leasing SEIS. Additionally, the impacts of future exploration and development activities that may occur because of the lease issuance need to be considered, and any decision made by the BLM to open areas within the Coastal Plain to a leasing program has significant consequences and potential impacts that must be considered. Direct, indirect, and cumulative effects of GHG emissions from oil and gas development, climate change, and other environmental impacts in the Arctic and Coastal Plain should be included in the assessment of the Leasing Program and each of the Alternatives included in the Leasing SEIS.	A detailed climate analysis was performed in Section 3.2.1 of the Draft SEIS. Emissions of GHGs were quantified for oil development and production activities as well as the downstream transportation, processing, and combustion of produced oil under each action alternative. Additionally, emissions from the change in foreign oil consumption due to oil production in the program area were estimated relative to the No Action Alternative. The estimated monetary value of the global climate change impacts of the total net GHG emissions under each alternative was estimated using social cost of GHG metrics. Moreover, the annual net emissions under each alternative were put in context through comparison to other emission sources that the public can more readily comprehend (e.g., number of homes' energy use for one year, gallons of gasoline consumed). A detailed quantitative analysis of potential hydrocarbons released was performed in both Section 3.2.1 and 3.2.2 of the Draft SEIS. Emissions of methane and other GHGs were presented in Section 3.2.1, Climate and Meteorology, Direct and Indirect Impacts. Emissions of GHGs were quantified for oil development, production, transportation, processing, and downstream combustion under each action alternative. Emissions of hydrocarbons that are from oil production are presented in Section 3.2.2, Air Quality, Direct and Indirect Impacts, namely volatile organic compounds and commonly emitted hazardous air pollutants. The specific types of infrastructure that would be constructed are currently unknown. Subsequent post-lease activities would require NEPA analysis before occurring. At that time, a detailed list of structures and developments would be available for a proposed activity. The most recent and relevant analysis for near-field air quality impacts of oil and gas developments on the North Slope is the Willow Master Development Plan Final SEIS and ROD. There is considerable uncertainty around the specific features of a future development project in the program area, the modeling is based on BLM's best judgment on the potential distribution of development and infrastructure as well as appropriate bounding analysis of the potential emissions from the program area. If and when specific individual projects are developed in the program area, they would go through their own NEPA assessment. In addition, as noted in ROP 6 (Chapter 2 of the Draft SEIS), project-specific terms and conditions required prior to authorizing any future oil and gas activity in the program area would be determined as part of site-specific NEPA analyses and would include one or more of the following: air modeling (of emissions and source parameters) to analyze direct, indirect, and cumulative impacts, monitoring, emissions reduction plan and control strategies, etc.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	131	The agencies must thoroughly analyze impacts associated with infrastructure under all development scenarios being considered, including providing estimates of surface acreage disturbance. Oil and gas exploratory drilling and production would have a variety of significant impacts associated with infrastructure. These include impacts associated with the physical footprint of the infrastructure, acquisition of materials such as gravel to build the infrastructure, and infrastructure operations. Under full development scenarios, exploratory and production-related drilling infrastructure could potentially sprawl over vast stretches of the Coastal Plain, greatly exceeding the 2,000 acres provided for in the 2017 Tax Cuts and Jobs Act. (231) (231) Pub. L. No. 115-97 § 20001(c)(3). As the Tribes expressed throughout the 2018-2020 NEPA process, the BLM's exclusion of pipeline infrastructure that does not touch the land surface resulted in an underestimation of the impacts of pipeline infrastructure on the Arctic Refuge. Even though the Tax Act excludes the acreage of pipelines (except for piers) to be counted in the 2,000-acre limitation, NEPA requires the agencies to calculate and disclose to the public the entire direct, indirect, and cumulative impacts associated with pipeline infrastructure. Pipelines located on support piers significantly impact the tundra below due to changes in snow accumulation depths, surface drainage characteristics, wind velocities, and sunlight penetration, resulting changes in habitat and wildlife access. In the SEIS, the agencies must analyze the impacts of elevated pipelines on caribou and their habitat.	Impacts from elevated pipeline are analyzed in Chapter 3 and take into account indirect impacts the may occur beyond the direct footprint of proposed elevated pipelines. In particular, see the biological resource sections in Chapter 3.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	132	The agencies must fully analyze the impacts of the development of road infrastructure and well pad construction. The construction and maintenance of permanent, ice, and snow roads, and snow fences, has significant and adverse impacts on wildlife, habitat, water resources, and subsistence that must be fully analyzed. Permanent road construction and maintenance requires gravel mining, sorting, and transport, with associated impacts on wildlife habitat. Snow fences, by design, significantly alter snow drifting which can affect snow cover and local hydrology. Stream crossings for roads require bridges or adequately sized and maintained culverts to ensure water flow and adequate fish passage and to prevent creation of flooded wetlands and ice jams. Temporary ice roads require significant water and ice withdrawals which can adversely impact over-wintering fish in lakes. Temporary, compacted snow roads can harm tundra growth, as the snow overlying those areas likely will require more time to melt during the very short growing season, and snow compaction can affect surface flows and microtopography. Roads fragment habitat, with associated avoidance behavior by caribou and other wildlife. Raised permanent roads built to protect permafrost make subsistence travel more difficult. Similarly, gravel well pad construction and operations will adversely affect wildlife habitat. Wildlife generally avoid pads because they are noisy areas with humans around. Pads also require significant quantities of mined gravel. All production operations produce air pollution through the use of generators, flares, pumps, vehicles, leaks, etc. During the 2018-2020 EIS process, the Tribes repeatedly identified the lack of information about the impacts from infrastructure. The Tribes raised this concern in comments on the Administrative Final EIS Review. In response to BLM's assertion that "[t]here is not enough information available to accurately predict development locations nor infrastructure at this time," the Tribes reiterated that "a depiction of the nature and scale of development infrastructure and its probable location is possible" and proceeded to provide the agency with a number of knowns about the program area that would allow the agency to give a specific picture of infrastructure development in the final EIS, so that the agency could properly analyze impacts from the proposed action on a variety of resources. BLM failed to remedy this gap in the 2019 Final EIS. For the SEIS, the agencies must thoroughly analyze impacts associated with infrastructure under all development scenarios being considered.	This level of specificity would be determined at the project-level authorization. Site-specific analyses, including those associated with infrastructure in support of oil and gas development, can more realistically be provided when the BLM receives an application to permit such infrastructure. The SEIS makes no decisions on such infrastructure, except to prohibit it in specified areas of particularly high value surface resources under some alternatives.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	134	The agencies must fully analyze all other impacts associated with oil development in the Coastal Plain, including, but not limited to: air and noise pollution, waste generation, surface water use, and restrictions on access for subsistence. Furthermore, the agencies cannot rely on directional drilling to claim that numerous significant impacts associated with development would be eliminated or mitigated. Directional or extended reach drilling for oil has the same air, water, and waste impacts as vertical well drilling.	Potential direct, indirect, and cumulative impacts are detailed for all resources in Chapter 3 of the SEIS. Impacts of oil and gas development are provided in these sections, including air, water, and waste, regardless of method of drilling. A separate NEPA analysis of impacts to these resources as a result of site-specific activities will be required for future proposed projects.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	177	Much of the draft SEIS's analysis of direct, indirect, and cumulative impacts, as well as analysis of mitigation measures is included in the appendices to the draft SEIS and relied on in the main body of the SEIS document. Many of the assumptions in the draft SEIS analysis rely on opaque modeling and data points contained in the appendices. The agencies should do more in these appendices to disclose their modeling and data points and how these are used to analyze direct, indirect, and cumulative impacts. The agencies also should create graphics and present data in charts whenever it would help public understanding.	Text and graphics throughout the SEIS have been edited as appropriate in response to comments.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Von Seggern	Dan	Washington State Attorney General's Office	80273	15	The Lease Program analyzed in the 2023 DSEIS would, for the first time, open the unspoiled Coastal Plain to oil and gas leasing, exploration, and development, resulting in severe, long-lasting environmental harm to the Coastal Plain's unique and sensitive Arctic ecosystem and contributing to global climate change, even as the climate crisis deepens. The Lease Program's impacts on climate change and migratory birds are of vital interest to the States. Although these comments on the 2023 DEIS focus on the impacts to climate change and migratory birds, oil and gas exploration and development in the Coastal Plain would have many other lasting, far-reaching, and devastating environmental and social impacts. Due to its harsh climate, environmental impacts in the Arctic Refuge tend to be long-lived. These include impacts to indigenous communities that rely on the Coastal Plain for subsistence and to wildlife including caribou and polar bears (listed in 2008 as threatened under the federal Endangered Species Act (ESA), in part due to habitat loss from climate change).	Direct, indirect, and cumulative impacts of the proposed oil and gas program are analyzed in Chapter 3 of the SEIS and include analysis of impacts to Climate overall (Section 3.2.1) as well as climate change and impacts to specific resources (see Biological Resources, Section 3.3). The temporal aspect of these impacts are also detailed. Subsistence impacts are detailed in Chapter 3, Section 3.4.3, as well as in Appendix F, which includes the ANILCA Section 810 evaluation of subsistence impacts.
Brouwer	Caroline	Friends of Alaska National Wildlife Refuges	80274	1	The Bureau of Land Management is not required by the Tax Act to allow for any specific level of fossil fuel exploration or development but to explore this activity. Because there are four superseding purposes for conservation, Friends argues that it is in fact BLM's responsibility to ensure that conservation be considered as a priority over the fossil fuel exploration and development goals of the Tax Act of 2017. After reviewing the SEIS, we see no way that the impacts of oil and gas development could be mitigated sufficiently given the types of projected irreversible environmental changes in the environment that will result.	The Section 20001(c)(1) of PL 115-97 requires the BLM to implement an oil and gas leasing program on the Coastal Plain. Section 20001(b)(2)(B) of PL 115-97 amended Section 303(2) of ANILCA by adding a fifth purpose to provide for an oil and gas program on the Coastal Plain, thus necessitating the consideration of all five purposes. Alternatives have been developed in consideration of these five purposes
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	28	There is a vast amount of information presented within the body of the document; at times the information seems to be extraneous and confusing, especially when considering the analysis is based on a hypothetical impact scenario rather than what is allowed under the express terms of the leases. This ultimately makes it confusing to understand the difference in impacts when comparing alternatives.	Authors endeavor to write content that is understandable to a broad audience. The programmatic nature of the analysis requires consideration of a broad potential impacts given the hypothetical development scenario
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	29	As a specific example of our above-related comment, throughout various resource impact analyses, particularly biological resources, there is little to no comparison of impacts between the alternatives. Analyses are often loaded with various assumptions and models to attempt to achieve a reasonable analysis of impacts for a hypothetical project which ends up resulting in numerous data outputs (acres available, species numbers, percent of populations, etc.) that are extremely onerous for the reader to comprehend. Once all of this information and data is presented, there is no clear comparison (in one location of the document) that gives the reader (or decisionmaker) an idea of what it all means. For example, the impact methodology and analyses to caribou are extremely complicated and detailed, but there is no conclusory statement for each alternative on what the impacts actually mean and how they compare between alternatives. There is no discussion on the caribou impacts in the context of the overall populations, except one area where a few models indicate the potential percent reduction in population. But again, there is no statement on what that actually means in the context of the ever-changing populations that have been observed over the years. Overall, perhaps the impacts have no notable implications on the species, and the differences between alternatives is not notable, either. But there is no discussion of this (what does it all mean??). In addition, the caribou is not a special status species by any state or federal agency or regulation. It is important for subsistence and that is acknowledged.	Per NEPA policy and guidance, resource authors compare potential impacts from action alternatives to the no action alternative, which provides the baseline for comparison. Impacts to caribou have been updated in the Final SEIS, as appropriate.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	55	Topic Affected Environment and Environmental Consequences Section # 3.1 Page # 3-1 SEIS Text The proposed leasing alternatives are a result of surface resource and management considerations and describe areas to offer for lease and the terms and conditions that would apply to post-lease exploration and development activities; they do not specifically propose development of oil and gas resources. For this reason, the analysis relies on a hypothetical development scenario consistent with those alternatives and PL 115-97 in a good faith effort to identify indirect effects of leasing that are not known at this time but nonetheless could be considered "reasonably foreseeable" (40 CFR Section 1508.8(b)) (see Appendix B). Comment A "good faith" effort might have involved "a more general programmatic approach" to the indirect impacts of oil and gas development. Instead, the SEIS' evaluation of Alternatives B, C, and D, goes into substantial detail on alternatives that are built on an erroneous purpose and need, which was based on a decision that is not ripe. More specifically, it analyzes the number of acres where ROPs for oil production would apply, the number of acres that would be subject to NSO stipulations to protect caribou calving habitat, fish and hydrologic resources, and subsistence activities adjacent to major rivers, the amount of acres subject to CSU, and the number of acres that would be subject to TLs.	The analyses in Chapter 3 is programmatic in nature with analyses taking into account the hypothetical development scenario as we as oil and gas land use designations such as NSO and CSU to better detail where impacts on specific resources could occur. Direct and indirect impacts on specific resources would be analyzed in subsequent project specific NEPA analyses.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	56	Topic Affected Environment and Environmental Consequences Section # 3.1 Page # 3-1 SEIS Text The regulations governing leasing and development provide for multiple decision stages prior to any ground-disturbing activities being authorized and require further compliance with applicable laws, including NEPA, during post-leasing decision stages. Until the BLM receives and evaluates an application for an exploration permit, permit to drill, or other authorization that includes site-specific information about a particular project, impacts of actual exploration and development that might follow lease issuance are speculative, as so much is unknown as to location, scope, scale, and timing of that exploration and development. At each decision stage, the BLM retains the authority to approve, deny, or reasonably condition any proposed ground-disturbing activity based on compliance with the terms and conditions of the lease and applicable laws and policies; therefore, the analysis of effects of exploration and development in this Leasing SEIS necessarily reflects a more general, programmatic approach than could occur at the post-lease project-specific stage. Comment Again, given the uncertainty over future development and the multiple decision stages that would require further NEPA reviews, there was no need for the SEIS to over-analyze the impacts in an attempt to bias the decision. To illustrate this point, a review of BLM oil and gas leasing statistics over the past decade in Alaska (found here: https://www.blm.gov/programs-energy-and-minerals-oil-and-gas-oil-and-gas-statistics) clearly shows that the issuance of a lease does not necessarily result in subsequent production. Between 2012 and 2022, 'leases in effect' in Alaska have generally increased with a peak of 336 leases, but the number of these leases that are producing has remained stable at about 30 per year. However, AIDEA based on USGS studies selected and leased those areas with a much high probability of finding oil in a quantity to produce. Even if BLM deems that the percent chance of a lease in ANWR getting to production is still reasonably foreseeable, BLM went beyond what was necessary in creating alternatives to restrict something that is at this point hypothetical. Without leasing and at least limited exploration that will not be known although AIDEA concludes is probable.	The analyses in Chapter 3 is programmatic in nature with analyses taking into account the hypothetical development scenario as we as oil and gas land use designations such as NSO and CSU to better detail where impacts on specific resources could occur. Detailing potential impacts on resources as a result of the proposed alternatives and in context of the hypothetical development scenario is appropriate for programmatic analyses.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	57	Topic Affected Environment and Environmental Consequences Section # 3.2 - 3.7 Page # N/A SEIS Text N/A Comment The CEQ regulations state, "Agencies should tier their environmental impact statements and environmental assessments when it would eliminate repetitive discussions of the same issues, focus on the actual issues ripe for decision, and exclude from consideration issues already decided or not yet ripe at each level of environmental review." 40 CFR § 1501.11(a) (emphasis added). Again, the SEIS went into exhaustive analysis of impacts from activities that are not yet and may never be ripe for decision.	The scale of the analysis is appropriate for a programmatic EIS. Future NEPA for site-specific activities may incorporate by reference information from the SEIS.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	58	Topic Affected Environment and Environmental Consequences Section # 3.2 - 3.7 Page # N/A SEIS Text Note: working on developing a comment addressing the SEIS's failure to consistently use consistent information across the difference analyses. Comment One example is the use of 100,000 barrels of oil as the peak output across alternatives but then coming up with different GHG emissions for each alternative.	The document states that 100,000 barrels of oil per day is the peak production from each field development. The emissions vary by alternative because multiple field developments are expected under some alternatives. Projected ultimate production from the project area under each Alternative has been added to the Final SEIS.
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	15	BLM also applied new standards in the draft SEIS that are inconsistent with a leasing program. For example, leases, and activity conducted pursuant to those leases, do not impact any of the resources that BLM cites in the draft SEIS. The activities that BLM cites would, however, need to be analyzed in a project-level environmental assessment or EIS for seismic activities or eventual development. A lease is nothing more than a paperwork exercise conducted at the State and Arctic District BLM offices, and BLM should not exaggerate its impacts.	BLM development of a leasing program, to include the identification of lands available for leasing, is considered a major federal action pursuant to NEPA (see 40 CFR 1508.1).
Ahmasuk	Austin	-	80447	1	I think there are absolutely potential impacts to caribou. I think there are absolutely potential impacts to subsistence resources. I also wonder about how these oil oil platforms and how the SEIS describes these hazards in infrastructure development. I don't. I'm not convinced that the permafrost degradation or impact of vegetation or impact of wetlands was fully captured from the impact that these, you know, sprawling industrial complexes can have on on these areas. I think that there are significant ramifications of the sprawling nature of the oil oil and gas infrastructure that isn't fully taken into consideration.	Potential indirect impacts take into account effects that extend beyond direct effects. The analysis area for indirect impacts varies by resource and is described in Chapter 3 and Appendix G.
Warren	Julianne	-	80458	3	I think that the other options, the acreages they sound small, but they don't take into account the context of rippling consequences, and of these ecological and human relationships.	Potential indirect impacts take into account effects that extend beyond direct effects. The analysis area for indirect impacts varies by resource and is described in Chapter 3 and Appendix G.

U.3.15 Economy

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Wald	Michael	-	20420	4	Additionally the economic analysis does not accurately or fully consider the effects of development on tourism in the area. Guided trips in the Refuge, air taxi operators, shuttle services, and others would be impacted by development on the coastal plain.	The Economy section focuses on evaluating potential impacts on the local, regional, and statewide economy with respect to jobs, income, and revenues. The evaluation of potential impacts on recreation and tourism are addressed in the Recreation Section of the SEIS (Section 3.4.6). Section 3.4.6 notes that there are a number of businesses (i.e., air travel operators and chartered polar bear viewing excursion operators) that could be affected by post-leasing activities. New oil and gas development following lease sales would potentially diminish the quality of the recreation setting and visitor experiences, displace visitors and subsistence users, and increase conflicts between users. The loss of income and job opportunities to wilderness guides and other businesses that depend on the recreational experience cannot be quantified without specific information on the magnitude of the reduction in recreational uses in the area. Section 3.4.6 provides a qualitative description of potential impacts on recreational resources.
Not Provided	Not Provided	Institute for Policy Integrity at NYU School of Law	69351	9	Relative to Its Estimate of Climate Cost, BLM's Estimates of Economic Benefit Are Inflated Because They Reflect Gross Rather than Net Figures In addition to monetizing climate damages from the lease sale, BLM also provides economic benefit estimates such as government revenues projected from leasing and potential future development and jobs created from future exploration, development, and production.(30) Yet unlike its presentation of greenhouse gas emissions and climate costs, BLM arrives at these economic-benefit projections using gross instead of net estimates. In net terms, BLM's economic projections overstate the economic benefits of this lease sale because those benefits will partially come at the expense of revenues and royalties that displaced production in other regions would have generated. In other words, because some of the benefits attributed to this lease sale would occur in other regions should the upcoming Coastal Plain lease sales not occur, the economic benefits provided in the EIS are not the complete picture. (30) Draft SEIS at B-27. To better assess the complete picture, BLM should consider its energy substitution analysis (ideally revised per the recommendations above) showing that the energy production resulting from the lease sales in Coastal Plain will displace other energy production (including both fossil fuels and renewables) elsewhere. Once more, BLM can look to its sister agency BOEM for guidance. In its recent five-year offshore leasing plan, BOEM recognized that displaced production would also generate domestic economic benefits and presented estimates of net economic benefits that account for this displacement effect.(31) Following BOEM's approach, BLM should also modify its analysis of economic benefits to account for the lost economic benefits from displaced projects. At a minimum, BLM should discuss this impact qualitatively and recognize that its economic-benefit projections are vast overestimates compared to its analysis of climate costs. (31) Bureau of Ocean Energy Mgmt., supra note 17, at 5-20 to 5-21 (calculating gross economic benefits of proposed sales, benefits from displaced production, and net economic benefits of proposed sales by subtracting the displaced benefits from the gross benefits).	See Appendix S for a discussion of substitution effects including estimates of alternative energy fuel sources likely to be consumed in place of forgone oil production from the Coastal Plains and net changes in the overall demand for electricity and energy fuel sources over the 30-year planning period. Acknowledged. The estimated potential economic impacts of the hypothetical petroleum development in the Coastal Plain area presented in this SEIS do not account for any countervailing or net economic effects on other regions, states, or countries and on other sectors of the global economy. Quantifying these net economic effects or "lost economic benefits from displaced projects" is not possible given all the possible future development scenarios that can occur elsewhere. Whether the benefits of development in the Coastal Plain would come at the expense of potential revenues and royalties to other regions would depend on a lot of external factors that are beyond the scope and consideration of this SEIS. The cumulative effects analysis did consider other petroleum development that would likely occur in the foreseeable future in the North Slope. The SEIS noted that development in the Coastal Plain would further increase oil production, economic activity, jobs, and revenues in the region but "there would be no additional economic effects under Alternative A since there would be no petroleum development without leasing."
Freitas	Benjamin	World Wildlife Fund	79957	3	WWF also utilizes data, modeling, and analysis from industry-respected oil and gas business consultancies to analyze the economics of energy development in projects across the globe. In a report published by WWF in October 2021 and submitted to BLM during the Draft SESIS scoping comment period, WWF economists worked with the oil industry's widely-recognized Rystad Energy database and modeling to produce an economic analysis of developing the leases awarded in the 2021 Arctic Refuge lease sale.(3) As the report concludes, the best available data for the future price of oil in a world where net zero emissions goals must be met, combined with WWF's analysis of modeling from industry-trusted Rystad Energy, demonstrates that oil and gas development from the 2021 Arctic Refuge lease sale is not economically viable. (3) WWF-US, The economics of oil development in the Arctic National Wildlife Refuge (October 12, 2021), also available at: https://www.worldwildlife.org/publications/the-economics-of-oil-development-in-the-arctic-national-wildlife-refuge .	The focus of an EIS is to address the potential environmental consequences of a proposed action. The economic viability of development in the Coastal Plain was not evaluated. Ultimately, future leaseholders will evaluate the economics of their proposed projects considering the prevailing market prices and costs of development. Any proposed activity on leases will also be subject to a NEPA analysis. The economic impact analysis in this SEIS assumes petroleum development will occur (see Appendix C for details regarding the hypothetical development scenario) and based on a possible development scenario quantifies the potential economic consequences. The analysis used the latest publicly available oil price projections (through year 2050) from the U.S. Energy Information Administration to estimate potential revenues to the impacted regional and state governments (see Section 3.4.10 for model assumptions). Note that there is considerable uncertainty regarding oil prices; future prices can be lower or it can be higher depending on regional and global supply and demand factors as well as geopolitical events.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	44	To comply with NEPA, the SEIS must analyze and fully disclose the economic impacts of potential oil development in the Arctic Refuge. This analysis must include an honest appraisal of the lease program's ability to displace oil imports, lower domestic gas prices, raise revenue to decrease the federal deficit, and create jobs. Much of the economic analysis in BLM's 2019 Final EIS was based on outdated or inaccurate information, faulty assumptions and a skewed economic perspective of the short- and long-term prices of oil. To provide the agencies with the best available data and updated and accurate information, WWF authored a report on the economics of oil development in the Arctic Refuge. See enclosed report, The economics of oil development in the Arctic National Wildlife Refuge (October 12, 2021).(83) (83) Also available at: https://www.worldwildlife.org/publications/the-economics-of-oil-development-in-the-arctic-national-wildlife-refuge . WWF's report utilizes recent data and modeling from Rystad Energy, an industry-leading energy research and analytics company, to examine the possibility of future oil developments inside the Arctic Refuge within the context of a global energy system that is changing due to the accelerating penetration of reduced-cost, low-carbon renewable energy, energy efficient technologies, and energy saving initiatives. As the world moves steadily towards a low-carbon energy future to meet the pressing CO2 emissions targets to ward off the worst effects from climate change, WWF's report shows that industry leaders and economists predict that, as demand for fossil fuels decreases, future global oil prices will likewise decrease over time. WWF's report demonstrates, using industry data and modeling, that the price at which oil development from the nine leases awarded in the Arctic Refuge in the 2021 lease sale would be economically viable to develop ranges from \$62.50 to \$83.60 per barrel. If the market for oil is below these price points, the Arctic Refuge leases would not be economically profitable to develop. WWF's report also shows that leading industry economists and analysts believe the future price of oil will likely be far below these "breakeven" prices for the Arctic Refuge leases - sitting somewhere between \$28 to \$50 per barrel in 2040, the approximate year at which the 2021 awarded leases might be developed. Such a profit loss would be unsustainable for any oil and gas company and would present a significant barrier to these leases ever being developed.	The focus of an EIS is to address the potential environmental consequences of a proposed action. The economic viability of development in the Coastal Plain was not evaluated. Ultimately, future leaseholders will evaluate the economics of their proposed projects considering the prevailing market prices and costs of development. Any proposed activity on leases will also be subject to a NEPA analysis. The economic impact analysis in this SEIS assumes petroleum development will occur (see Appendix C for details regarding the hypothetical development scenario) and based on a possible development scenario quantifies the potential economic consequences. The analysis used the latest publicly available oil price projections (through year 2050) from the U.S. Energy Information Administration to estimate potential revenues to the impacted regional and state governments (see Section 3.4.10 for model assumptions). Note that there is considerable uncertainty regarding oil prices; future prices can be lower or it can be higher depending on regional and global supply and demand factors as well as geopolitical events.
Freitas	Benjamin	World Wildlife Fund	79957	45	In addition, WWF's report shows that, based on the most recent data and modeling from Rystad Energy, the amount of economically recoverable oil for the 2021 awarded leases in the Arctic Refuge would yield only 1.64 million barrels of oil. At current U.S. consumption rates for oil, this is equivalent to a two-hour supply of the country's oil needs.(84) (84) 1.64 million barrels economically recoverable in the 9 leases / 6.63 billion barrels U.S. consumption per year * 365 days * 24 hours = 2.17 hours. Assuming the Arctic Refuge supply was the sole source of oil and consumed all at once. Thus, the best available data for the future price of oil, combined with our analysis of the modeling from industry-trusted Rystad Energy, demonstrates that oil production from the Arctic Refuge is unlikely to be economic. This conclusion is further supported by the paltry results of the first Arctic Refuge lease sale where only 9 of the 22 offered lease tracts were bid on and finalized, generating revenue of only \$14.4 million. This conclusion is further supported by recent behavior of the oil and gas, banking, and insurance industries. In the last few years, dozens of major banks across the world, including the six largest in the United States and five largest in Canada, have issued policies refusing to finance drilling in the Arctic Refuge(85) and twenty international insurance companies have followed suit.(86) Finally, in 2022, two of the three entities awarded leases in the 2021 Lease Sale voluntarily relinquished their leases.(87) (85) https://ourarcticrefuge.org/corporate-commitment-to-protect-the-arctic-refuge/ . (86) Id. (87) Alex DeMarban, Private Company Gives up Oil and Gas Lease in Arctic Refuge, Leaving Alaska Agency as Lone Leaseholder, ANCHORAGE DAILY NEWS, Aug, 22, 2022, available at https://www.adn.com/business-economy/energy/2022/08/22/private-company-gives-up-oil-and-gas-lease-in-arctic-refuge-leaving-alaska-agency-as-lone-leaseholder/ ; Alex DeMarban, Another Oil Company Backs out of Leases in Alaska's Arctic National Wildlife Refuge, ANCHORAGE DAILY NEWS, June 1, 2022, available at https://www.adn.com/business-economy/energy/2022/06/01/another-oil-company-backs-out-of-leases-in-alaskas-arctic-national-wildlife-refuge/ .	The focus of an EIS is to address the potential environmental consequences of a proposed action. The economic viability of development in the Coastal Plain was not evaluated. Ultimately, future leaseholders will evaluate the economics of their proposed projects considering prevailing market prices and costs of development. Any proposed activity on leases will also be subject to a NEPA analysis. The economic impact analysis in this SEIS assumes petroleum development will occur (see Appendix C for details regarding the hypothetical development scenario) and based on a possible development scenario quantifies the economic consequences. The analysis used the latest publicly available oil price projections (through year 2050) from the U.S. Energy Information Administration to estimate potential revenues to the impacted regional and state governments (see Section 3.4.10 for model assumptions). Note that there is considerable uncertainty regarding oil prices; future prices can be lower or it can be higher depending on regional and global supply and demand factors as well as geopolitical events.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	46	The best available data and industry behavior itself shows that the \$1 billion economic return to the United States on which Congress based its authorization for an Arctic Refuge oil and gas leasing program(88) is magnitudes off the true mark. In other words, tapping the Coastal Plain for oil and gas makes no sense for nature, for the U.S. treasury, and no sense for profit-seeking businesses. (88) Congressional Budget Office, Cost Estimate, A Legislative Proposal Related to the Arctic National Wildlife Refuge (Nov. 8, 2017), https://www.cbo.gov/system/files/115th-congress-2017-2018/costestimate/anwrreconciliation.pdf . The Draft SEIS includes assumptions about the economic nature of oil and gas leasing in the Coastal Plain, touting jobs and economic and tax contributions numbers that are unrealistically optimistic given the industry's response to the previous lease sale and the conclusion in WWF's report. Oil production from the Arctic Refuge is unlikely to be economic. BLM and USFWS must incorporate the latest economic data and analysis from WWF's report, as well as recent trends in industry behavior moving away from Arctic Refuge oil and gas development, in its Final SEIS so that the agencies utilize true and accurate information when analyzing the economic impacts from oil and gas leasing in the Arctic Refuge.	The focus of an EIS is to address the potential environmental consequences of a proposed action. The economic viability of development in the Coastal Plain was not evaluated. Ultimately, future leaseholders will evaluate the economics of their proposed projects considering prevailing market prices and costs of development. Any proposed activity on leases will also be subject to a NEPA analysis. The economic impact analysis in this SEIS assumes petroleum development will occur (see Appendix C for details regarding the hypothetical development scenario) and based on a possible development scenario quantifies the economic consequences. The analysis used the latest publicly available oil price projections (through year 2050) from the U.S. Energy Information Administration to estimate potential revenues to the impacted regional and state governments (see Section 3.4.10 for model assumptions). Note that there is considerable uncertainty regarding oil prices; future prices can be lower or it can be higher depending on regional and global supply and demand factors as well as geopolitical events.
Brisson	Brook	Trustees for Alaska	80131	479	As Groups pointed out at scoping, proponents of Arctic Refuge oil and gas development commonly make inaccurate and misleading claims around the economic benefits of development.(1302) Given the enormous risks to wildlife, ecosystems, and human welfare that development would impose, it is critical that the final SEIS closely, carefully, and critically examine those asserted benefits. The 2019 EIS entirely failed to do so, as explained in the detailed technical review prepared by Key-Log Economics.(1303) Unfortunately, the draft SEIS perpetuates many of these problems. The agencies' economic impact analysis is still incomplete, and the chosen methods and framing lead to misleading takeaways. Most significantly, the agencies should not include quantitative estimates in the economic impact analysis unless they include both the potential benefits and the costs to society of a given level of development. At a minimum, the final SEIS must explicitly acknowledge the issues detailed below and include clarifying language that reported economic benefits associated with the action alternatives represent high-end estimates and do not account for foreseeable economic costs to society. (1302) 2021 Scoping Comment Letter at 197-98. (1303) 2019 DEIS Comment Letter, App. C.	The Economy section focuses on evaluating potential impacts on the local, regional, and statewide economy with respect to jobs, income, and revenues. The evaluation of potential impacts on recreation and tourism are addressed in the Recreation Section of the SEIS (Section 3.4.6). Section 3.4.6 notes that there are a number of businesses (i.e., air travel operators and chartered polar bear viewing excursion operators) that could be affected by post-leasing activities. New oil and gas development following lease sales would potentially diminish the quality of the recreation setting and visitor experiences, displace visitors and subsistence users, and increase conflicts between users. The loss of income and job opportunities to wilderness guides and other businesses that depend on the recreational experience cannot be quantified without specific information on the magnitude of the reduction in recreational uses in the area. Section 3.4.6 provides a qualitative description of potential impacts on recreational resources.
Brisson	Brook	Trustees for Alaska	80131	480	In the draft SEIS economic impact analysis, the agencies only quantify jobs, income, and government revenues that may be associated directly or indirectly from a hypothetical unconstrained, high-development scenario. Because the analysis does not also quantify the corresponding environmental and social costs (e.g., harm to the physical environment, biological resources, cultural resources, subsistence, recreation, public health, climate, etc.) of that hypothetical level of development, the public may mistakenly conclude that the economic benefit of unconstrained development (closest to Alt. B) would make oil and gas leasing and development of the Coastal Plain cost-justified.	The Economy section focuses on evaluating potential impacts on the local, regional, and statewide economy with respect to jobs, income, and revenues. Quantifying or coming up with a value of the costs to society of potential environmental degradation that could result from the hypothetical development scenario is outside the scope of analysis. The evaluation of potential impacts on the physical environment, biological resources, wildlife, cultural resources, subsistence, recreation, visual resources, and public health, are discussed in other sections of the SEIS.
Brisson	Brook	Trustees for Alaska	80131	481	As Groups requested at scoping, the agencies should prepare a full quantitative analysis of the significant non-market ecosystem service values and other socio-economic benefits of the Coastal Plain to inform a true cost-benefit analysis. Absent such an analysis and at a minimum, the final SEIS must provide clear caveats to ensure its incomplete quantitative estimates of economic benefits are not misinterpreted. This should include a clarifying statement at the beginning of the economic impact analysis and next to any of the economic impact estimate summary tables(1304) such as: (1304) DSEIS Tables 3-56, 3-57, and 3-58; id. App. B, Tables B-6, B-7, and B-8. This SEIS fails to conduct a net benefits analysis and therefore should not be interpreted as demonstrating that the economic benefits of oil and gas development would necessarily exceed the costs to society. The final SEIS should also, at a minimum, identify the types of environmental and social costs that the agencies fail to quantitatively include in the analysis.	The Economy section focuses on evaluating potential impacts on the local, regional, and statewide economy with respect to jobs, income, and revenues. Quantifying or coming up with a value of the costs to society of potential environmental degradation that could result from the hypothetical development scenario is outside the scope of analysis. The evaluation of potential impacts on the physical environment, biological resources, wildlife, cultural resources, subsistence, recreation, visual resources, and public health, are discussed in other sections of the SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	482	In addition to omitting the economic costs associated with development, the draft SEIS uses misleading framing and problematic methodologies that further inflate the supposed economic benefits associated with development. First, the draft SEIS does not report estimated net changes in jobs, labor income, or government revenues from a hypothetical unconstrained development scenario; instead, it reports an estimated change in Coastal Plain oil and gas development activities' contribution to total U.S. jobs, labor income, and government revenues. This is a vitally important distinction. For example, the agencies state that "Future exploration, development, and production activities in the program area for the two anchor fields and their associated satellite fields are estimated to generate about 250 direct jobs per year during exploration activities, 2,260 direct jobs per year during the development phase, and 770 direct jobs per year during the production phase."(1305) In other words, the agencies frame the estimates as if such development activities would be creating additional jobs, income, and government revenue - not as an estimated net difference from the baseline of no development in the program area. (1305) DSEIS at 3-424 (emphasis added); see also id. App. B at B-27 ("Table B-6, below, estimates the number of direct and indirect jobs that would be created because of potential future exploration, development, and production in the Coastal Plain. Direct and indirect income projected to be created by potential future Coastal Plain development is shown in Table B-7... ." (emphasis added)).	The estimated potential economic impacts of the hypothetical petroleum development in the Coastal Plain area presented in this SEIS do not account for any countervailing or net effects on other regions, states, or countries and on other sectors of the global economy. Quantifying these net effects or "lost economic benefits from displaced projects" is not possible given all the possible future development scenarios that can occur elsewhere. Whether the benefits of development in the Coastal Plain would come at the expense of potential revenues and royalties to other regions would depend on a lot of external factors that are beyond the scope and consideration of this SEIS. The cumulative effects analysis did consider other petroleum development that would likely occur in the foreseeable future in the North Slope. The SEIS noted that development in the Coastal Plain would further increase oil production, economic activity, jobs, and revenues in the region but "there would be no additional economic effects under Alternative A since there would be no petroleum development without leasing."
Brisson	Brook	Trustees for Alaska	80131	483	This approach is highly misleading, as many of the jobs and subsequent labor income that the agencies report would still occur absent development in the program area; they would just come from different locations and/or different industries. Jobs, especially in the energy sector, are constantly shifting across regions and economic sectors - and between energy sub-sectors, particularly during energy transitions. The agencies' analysis does not appear to account for this reality. Most oil industry workers not working in new hypothetical development in the Arctic Refuge will be able to find jobs elsewhere, meaning a different sector would claim the same "contributions" to jobs and income. In addition to ongoing labor demand for workers within the oil and gas industry in the near term from existing oil fields in the United States, going forward there is also high workforce transferability to adjacent energy sectors including in renewables.(1306) (1306) A 2021 analysis of BLS data by the Center for Economic and Policy Research estimates that around 40% of those employed in the U.S. fossil fuel industry have skills that directly transfer to work in other industries without the need for additional training. Furthermore, of the workers with skills deemed "non-transferable," nearly half are in construction and extraction occupations with skills that can very likely be transferred to other industries with some training. Baker, D. & Lee, A., Center for Economic and Policy Research, "The Employment Impact of Curtailing Fossil Fuel Use" (May 26, 2021), available at https://cepr.net/report/the-employment-impact-of-curtailling-fossil-fuel-use/ .	The estimated potential economic impacts of the hypothetical petroleum development in the Coastal Plain area presented in this SEIS do not account for any countervailing or net effects on other regions, states, or countries and on other sectors of the global economy. Quantifying these net effects or "lost economic benefits from displaced projects" is not possible given all the possible future development scenarios that can occur elsewhere. Whether the benefits of development in the Coastal Plain would come at the expense of potential revenues and royalties to other regions would depend on a lot of external factors that are beyond the scope and consideration of this SEIS. The cumulative effects analysis did consider other petroleum development that would likely occur in the foreseeable future in the North Slope. The SEIS noted that development in the Coastal Plain would further increase oil production, economic activity, jobs, and revenues in the region but "there would be no additional economic effects under Alternative A since there would be no petroleum development without leasing."

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Brisson	Brook	Trustees for Alaska	80131	484	Second, the agencies use multipliers that exaggerate development impact on labor and income. To model both direct and indirect/induced employment and income effects, the draft SEIS uses an input-output model.(1307) Economists have found that using input-output models that rely on assumed economic multipliers significantly overestimate impacts because they fail to account for how markets work in reality by assuming fixed prices and no substitution between factor inputs, often resulting in misleading and biased claims. For example, economist Jeremy G. Weber found that input-output models overestimated the employment impacts of the shale gas boom in Pennsylvania by over 20 times the actual gain in employment.(1308) A 2015 review of research methods to estimate the socioeconomic impacts of the shale boom led by David Fleming reports that "although a very popular method employed by industry and governments to measure economic impacts, [input-output] models can easily provide misguided results, especially in the context of resource extraction activity."(1309) (1307) DSEIS at 3-423 ("The IMPLAN input-output model for Alaska was used to estimate the employment and income effects of the various exploration, development, and production activities (MIG, Inc. 2023)."). (1308) Weber, J.G., "The Effects of a Natural Gas Boom on Employment and Income in Colorado, Texas, and Wyoming," Energy Economics, 34(5), 1580-1588 at 1587 (2012), available at https://doi.org/10.1016/j.eneco.2011.11.01 . (1309) Fleming, D., Komarek, K., Partridge, M., Measham, T., "The Booming Socioeconomic Impacts of Shale: A Review of Findings and Methods in the Empirical Literature," MPRA Paper No. 68487, at 16 (Dec. 2015), available at https://mpra.ub.uni-muenchen.de/68487/ ; see also Aldy J., "The Labor Market Impacts of the 2010 Deepwater Horizon Oil Spill and Offshore Oil Drilling Moratorium," Resources for the Future DP, 14-27, at 26 (Aug. 2014), available at https://bit.ly/3c0QXuQ (finding economic and employment projections made by industry, government, and academics during the 2010 production moratorium in the Gulf of Mexico that used regional employment multipliers overestimated the economic and employment impacts by many magnitudes).	Acknowledged. All models have limitations and are subject to estimation errors. The IMPLAN input-output model is a widely accepted tool for estimating the direct, indirect, and induced economic effects of development on a specified region. The IMPLAN model has been used in numerous other EISs.
Brisson	Brook	Trustees for Alaska	80131	485	To address these issues, the final SEIS must clearly state that the estimates are for Coastal Plain oil and gas development activities' contribution to total U.S. jobs, labor income, and government revenues, and not net changes. The agencies must ensure that the final SEIS does not misleadingly imply generation of additional jobs and income that would not otherwise exist absent oil and gas development in the program area. The final SEIS must also include a disclaimer about the tendency for its chosen input-output model methodology to exaggerate job and labor income impacts of oil and gas extraction. The agencies should address how the use of different multipliers or methodologies (such as the use of historic econometrically-derived multipliers) may affect its estimates.	All models have limitations and are subject to estimation errors. The IMPLAN input-output model is a widely accepted tool for estimating the direct, indirect, and induced economic effects of development on a specified region. The IMPLAN model has been used in numerous other EISs. The estimated potential economic impacts of the hypothetical petroleum development in the Coastal Plain area presented in this SEIS do not account for any countervailing or net effects on other regions, states, or countries and on other sectors of the global economy. Quantifying these net effects or "lost economic benefits from displaced projects" is not possible given all the possible future development scenarios that can occur elsewhere. Whether the benefits of development in the Coastal Plain would come at the expense of potential revenues and royalties to other regions would depend on a lot of external factors that are beyond the scope and consideration of this SEIS. The cumulative effects analysis did consider other petroleum development that would likely occur in the foreseeable future in the North Slope. The SEIS noted that development in the Coastal Plain would further increase oil production, economic activity, jobs, and revenues in the region but "there would be no additional economic effects under Alternative A since there would be no petroleum development without leasing."

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	486	Given the huge uncertainties of potential oil and gas development in the Coastal Plain, particularly combined with the agencies' decision to only quantify potential economic benefits and not also costs, it is inappropriate to exclusively show results for an unconstrained high-development scenario for the economic impact calculations.(1310) Economic impact calculations in the final SEIS should include a low-development scenario as well. Presumably the agencies could easily utilize the low-development scenario reported for air quality emissions in Appendix Q that assumes "one CPF, four well pads, and associated infrastructure."(1311) However, a more appropriate low-development scenario would also assume necessary climate action to meet climate commitments and achieve climate goals and therefore show the range of uncertainty. (1310) See DSEIS at 1-3 ("There is tremendous uncertainty regarding potential exploration and development in the Coastal Plain. Any development scenario at this point is highly speculative given that it is unknown whether or where future leases will be issued, whether or where exploratory drilling may occur under leases, and whether or where economically developable oil and gas discoveries may be made. This uncertainty is due in part to the remoteness and lack of previous exploration and development of the Coastal Plain; its harsh environment and challenging engineering considerations; and the extended time it has taken to go from leasing to development in other regions of the North Slope of Alaska, including in the National Petroleum Reserve-Alaska (NPR-A)." (emphasis added)); id. at 3-2 ("In making these assumptions, the BLM and USFWS have striven to minimize the chance that the resultant impact analysis would understate potential impacts; therefore, the hypothetical development scenarios (Appendix B) are intended to represent optimistic high-production, successful discovery, in a situation of favorable market prices." (emphasis added)). (1311) DSEIS App. Q at Q-19 to Q-20.	The hypothetical development scenarios (Appendix C) are intended to represent optimistic high-production, successful discovery, in a situation of favorable market prices. The intent of these scenarios is to avoid understating potential impacts resulting from each of the proposed Alternatives so that they can be fully analyzed as required under NEPA. It likely that many impacts, including economic benefits, may not reach the levels projected in analysis based on the hypothetical development scenarios, if conditions are unfavorable and given all the uncertainties noted.
Brisson	Brook	Trustees for Alaska	80131	487	Instead, the agencies assume ongoing high-demand for petroleum products and conduct no sensitivity analysis that assumes lower demand due to existing climate pledges, much less the amount of climate action necessary to be consistent with a chance of keeping global temperatures from rising more than 1.5°C and avoiding the worst impacts of a changing climate. Given the need to rapidly transition away from fossil fuels to meet this target, it is reasonable for the agencies to simulate the expected prospects for drilling in the Coastal Plain and the subsequent economic impacts of development under a scenario consistent with meeting climate targets.	The hypothetical development scenarios (Appendix C) are intended to represent optimistic high-production, successful discovery, in a situation of favorable market prices.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	488	As the U.S. and global economies transition to a low-emissions energy future, the demand for oil (especially from areas not yet leased that have a long lead time) are likely to decline considerably. Global demand for oil is currently around 100 million barrels/day (mb/d). Climate scenarios compatible with keeping temperatures from rising more than 1.5°C project that global oil demand will decline by between 50 to 70 mb/d by 2040 and decline between 75 to 90 mb/d by 2050.(1312) Even scenarios that assume policies and technologies develop according to recent trends that are inadequate to avoid a 1.5°C rise project that global oil demand will decline by between 10 to 40 mb/d by 2040 and by between 30 to 50 mb/d by 2050.(1313) To put things into perspective, the agencies' unconstrained scenario projects that at its peak, the Coastal Plain could produce between 0.1 to 0.2 mb/d.(1314) Global demand for oil will almost certainly be reduced by a lot more than even that high-end assumption of peak production from the Coastal Plain (0.2 mb/d), and there will not be a need for production that would come from areas not yet leased in the Arctic. (1312) Resources for the Future, 2023 Global Energy Outlook, available at https://www.rff.org/publications/reports/global-energy-outlook-2023/ (Scenarios compatible with keeping global temperatures from rising below 2C by 2100 is BP Accel and from rising below 1.5C include: BNEF NZS, BP Net Zero, Equinor Bridges, and IEA NZE. The Reference scenarios include: Exxon-Mobil, IEEJ Reference, and OPEC Reference. Figure 8. World Oil Demand shows the reference scenarios ranging from 100 to 110 mb/d, scenarios compatible with 1C reach 50 to 40 mb/d in 2040 and 20 to 25 mb/d in 2050. (100-50=50 to 110-40=70 mb/d decline in 2040 and 100-25=75 to 110-20=90 mb/d decline in 2050)). (1313) Id. (Figure 8 shows that for evolving policy scenarios (including Equinor Walls, BP New Momentum, BNEF ETS, IEEJ Advanced Technology, and IEA APS) oil demand falls to between 90 and 70 mb/d in 2040 (10 to 40 mb/d below the reference scenarios in 2040) and falls to between 80 and around 58 mb/d in 2050 (for 20 to 52 mb/d below the reference scenarios in 2050)). (1314) DSEIS App. B at B-10 (To be very conservative, let's assume that both anchor fields that the agencies assume would begin production before 2050 could come online and reach peak production at the same time so that peak production for the entire program area could result in around 0.2 mb/d. The agencies state that they assume two fields would come online by 2050 in the DSEIS at 3-422: "The assumption is that the second anchor field would be discovered and developed several years after the first anchor field and would have four smaller satellite fields that would be developed by 2050 and tie into its CPF.").	The hypothetical development scenarios (Appendix C) are intended to represent optimistic high-production, successful discovery, in a situation of favorable market prices.
Brisson	Brook	Trustees for Alaska	80131	489	The agencies assume production begins around 6 years after exploration permits are issued.(1315) In contrast, the International Energy Agency reports in its World Energy Outlook 2022 that conventional oil and gas development projects that started production since 2010 took 19 years on average between receiving permission to explore and first production.(1316) In other words, a comparable increase in the hypothetical timeline of development could push first production from what is currently assumed to be 2032 in the RFD scenario to possibly something more like post 2040/2045 for first production. Moreover, the agencies should factor in the enhanced fiscal risks - including of stranded asSEIS - and costs to industry of pursuing development in the Coastal Plain after 29 global financial institutions, including all major American and Canadian banks, and many insurers have pledged not to finance or insure oil and gas projects in the Arctic. (1315) DSEIS App. B at B-11. (1316) International Energy Agency, World Energy Outlook 2022 at 41 n.1, available at https://iea.blob.core.windows.net/asSEIS/830fe099-5530-48f2-a7c1-11f35d510983/WorldEnergyOutlook2022.pdf .	Acknowledged. The hypothetical development scenarios (Appendix C) are intended to represent optimistic high-production, successful discovery, in a situation of favorable market prices.
Brisson	Brook	Trustees for Alaska	80131	491	To appropriately demonstrate the large range of uncertainty, the agencies' economic impact estimates should include a low-development scenario that assumes global oil demand is consistent with meeting climate targets. At a minimum, the final SEIS must qualitatively address the economic feasibility of development in the Coastal Plain under a scenario that assumes global oil demand is consistent with meeting 1.5°C. In addition, the final SEIS should address a more realistic hypothetical timeline for development and address the likely risks of stranded asSEIS if companies pursue leasing and development.	Acknowledged. The hypothetical development scenarios (Appendix C) are intended to represent optimistic high-production, successful discovery, in a situation of favorable market prices.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	492	For the economic impact analysis, the draft SEIS states that it estimated by-year production volumes for the hypothetical unconstrained, high-development RFD scenario and that "this information was used to calculate potential royalty payments and other State and the federal government tax payments."(1317) Although any attempt to project potential development activity and production levels for the Coastal Plain is extremely speculative, the agencies must provide the by-year production amounts they assumed for each RFD scenario used in the SEIS in order for the public to evaluate and contextualize subsequent calculations that are directly tied to annual production volumes, such as royalty payments, greenhouse gas emissions, and the social cost of downstream emissions. (1317) DSEIS at 3-422.	Edits to Economy Section Page 3-422 (Draft SEIS). "Production is anticipated to peak at an estimated 100,000 barrels per day from each field (not necessarily concurrently) after 3 years from initial production, though this number may be exceeded for any particular development. From that point onward, production from the field is estimated to decline at a rate of approximately 8 percent per year." Estimates of production volumes by year were based on the size of each oil field and a production decline rate of 8 percent per year. As noted in Appendix C, production is anticipated to peak at an estimated 100,000 barrels per day per field after 3 years of initial production, followed by a decline of 8 percent per year. This information was used to calculate potential royalty payments and other State and the federal government tax payments.
Brisson	Brook	Trustees for Alaska	80131	493	Finally, Table 3-57 and Table 3-58 state that the agencies are reporting in 2022 dollars, but the same tables shown in Appendix B (Vol. 3 Tables B-7 and B-8) report in 2017 dollars. This error should be corrected.	Text edited to "in Millions of 2022 Dollars"
Baran	Eleanor	-	80165	5	Per Section 5 of President Biden's Executive Order 13990 on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, agencies must consider the Social Cost of Carbon (SCC), in addition to the social costs of nitrous oxide and methane, or more broadly, the Social Costs of GHG Emissions (SC-GHG). These metrics are designed to "estimate the monetized damages associated with incremental increases in GHG emissions" and to help agencies recognize the breadth of climate impacts from agency actions on sectors including "agriculture, public health, labor productivity, and more." The effects of climate change know no boundaries and will impact every aspect of human society. Therefore, federal agencies must consider SC-GHG in their decision-making process, especially for oil and gas development. BLM mentions SC-GHG in Section 2.1 and Appendix F.2.1 of the Leasing SEIS. BLM includes four SC-GHG estimates, three of which include various discount rates for each proposed alternative, and one that calculates the 95th percentile of damages estimated, or the higher-than-expected economic impacts from climate change. The calculated SC-GHG for each alternative Coastal Plain development has wide ranges: i. Alternative B's SC-GHG range is from \$2.3 billion to nearly \$30 billion. ii. Alternative C has a range of \$2.2 billion to \$28.2 billion. iii. Alternative D's range is from \$1 billion to \$12.3 billion. This is a massive range for each proposed alternative, with potential impacts (or higher-than-expected impacts) from climate change topping nearly \$30 billion in social costs. However, with the BLM's acknowledgment of uncertainty from these calculations and when considering that these social costs will impact people across the planet, the BLM needs to consider the SC-GHG of the Leasing Program further and account for the highest possible cost, or \$30 billion in its analysis and decision-making process. Only one paragraph of discussion of SC-GHG in the Leasing SEIS (with most of the analysis pushed to Appendix F) clearly shows that BLM is doing the bare minimum to consider the SC-GHG per Executive Order 13990.	Appendix G, Section G.2.1, Social Costs of GHG Emissions has been updated for the Final SEIS. In the current analysis, the BLM applies the Appendix G, Section G.2.1, Social Costs of GHG Emissions, has been updated for the Final SEIS. In the current analysis, the BLM applies the EPA Workbook, which uses the currently best available estimates of the SC-GHG for use in DOI decision-making and analysis as cited in the EPA's Final Rule of March 8, 2024, Fed. Reg 16820, 17018-20.
Baran	Eleanor	-	80165	11	In addition to environmental protections, the agency should consider the economic benefit-cost analysis of situating the Leasing Program in an area with significant wildlife activity. As the Leasing SEIS calls for the cessation of all activity-regardless of the project stage-if monitoring uncovers polar bear dens within a mile of production, the entire program could face costly roadblocks.	The focus of an EIS is to address the potential environmental consequences of a proposed action. The economic viability of development in the Coastal Plain was not evaluated; a cost-benefit analysis is outside the scope of analysis of the SEIS. Ultimately, future leaseholders will evaluate the economics of their proposed projects considering prevailing market prices and costs of development, including additional operating costs of required operating procedures and lease stipulations. Any proposed activity on leases will also be subject to a NEPA analysis.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	1	BLM conducted its first lease sale in the Coastal Plain on January 6, 2021. A total of nine tracts were leased. Two leases were subsequently canceled at the lessees request. After conducting a review of Final EIS, the new Secretary of the Interior "identified multiple legal deficiencies in the underlying record supporting the leases" and, in concert with the release of this Draft SEIS, the Secretary canceled the remaining seven leases. In our view. the Draft SEIS-and the process by which it was drafted-demonstrates that the Agencies fail to understand the complex but critically important role that oil and gas play in advancing the interests of the people of the North Slope. Through this environmental review, the Agencies are failing to fulfill their broader duties to Congress and to the indigenous people of the North Slope by capitulating to a political agenda that calls for ending domestic oil and gas development with no regard to the economic and security consequences of those actions. (4) (4) Indeed, although Volume I of the Draft SEIS uses the phrase "climate change" 254 times, it does not once mention "national security," "energy security," or "national energy security." In discussing the relevance of the Draft SEIS to the national economy, the authors suggest that "[t]he importance of the economic contributions of a leasing program in the Coastal Plain to the national economy ... has been noted," pointing to Appendix S. We did not locate the referenced notes, and Appendix S does not appear to exist. The authors go on to focus virtually all of the "national economy" discussion on "nonmarket environmental values." Obviously, we recognize that ANWR has "nonmarket environmental values" worth preserving. That fact, in our view, has little practical bearing on the "national economy." Ironically, despite focusing all of the attention of the "national economy" discussion on "non-use values," even the authors concede that "[a] study to quantify the non-use values of the Coastal Plain is outside the scope . . of this EIS." Draft SEIS at 3-419 (emphasis added).	The SEIS has been edited to include the following text under National Economy: While the focus of the economy section of this SEIS is on evaluating the potential impacts of petroleum development on the local, regional, and statewide economy, the impacts with respect to jobs, income, and revenues would be nationwide. Some portion of the equipment, materials, and labor required for petroleum development would come from other areas outside Alaska. The increase in jobs and income levels at the national level however are not expected to be significant. It should also be noted that oil production in the Coastal Plain would contribute to domestic production and enhance U.S. energy security. The following was deleted from Appendix S. "The importance of the economic contributions of a leasing program in the Coastal Plain to the national economy and the importance of preserving the region for its unique wildlife, wilderness, and recreation values has been noted during the EIS process (see Appendix S). A lot of the concerns noted in the public comments had to do with the environmental risks and the potential for development to diminish the pristine conditions and wilderness value of the area.

U.3.16 Environmental Justice

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Boldrick	Lauren	EPA Region 10	80058	1	Key recommendations to address environmental justice concerns: -Address the disproportionate impacts identified in the DSEIS in accordance with Executive Order 14096, Revitalizing Our Nation's Commitment to Environmental Justice for All and the Council on Environmental Quality's (CEQ's) guidance, Environmental Justice: Guidance Under the National Environmental Policy Act (CEQ EJ Guidance).(1) -Conduct meaningful engagement to ensure community feedback is reflected in the decision-making process and collaborate with affected communities to develop specific mitigation measures to address the potential disproportionate EJ impacts identified in the DSEIS. (1) https://www.epa.gov/sites/default/files/2015-02/documents/ej_guidance_nepa_ceq1297.pdf . Accessed 9/25/2023.	A reference to Executive Order 14096 has been added. Efforts to meaningfully involve affected communities are summarized in the Direct and Indirect Impacts discussion of the environmental justice analysis; they include public meetings, coordinating with federally recognized Tribes, government-to-government meetings, ANCSA corporation consultations, and having local and tribal governments participate as cooperating agencies. The involvement of these communities has resulted in mitigation measures that mitigate impacts on the communities and resources they rely on. Mitigation measures for cultural resources, subsistence, sociocultural systems, economy, and public health areas are described in each of those sections of the analysis. As those are the identified mechanisms for potential environmental justice impacts, no separate environmental justice mitigation measures are proposed. The summary conclusion or "environmental justice determination" will be made in the ROD.
Boldrick	Lauren	EPA Region 10	80058	3	Environmental Justice The DSEIS identifies disproportionate impacts to communities within and near the Program area for all action alternatives. EPA recommends the FSEIS address the disproportionate impacts identified in the DSEIS in accordance with Executive Order 14096, Revitalizing Our Nation's Commitment to Environmental Justice for All and the Council on Environmental Quality's (CEQ's) guidance, Environmental Justice: Guidance Under the National Environmental Policy Act (CEQ EJ Guidance).(2) (2) https://www.epa.gov/sites/default/files/2015-02/documents/ej_guidance_nepa_ceq1297.pdf . Accessed 9/25/2023. EO 14096 directs federal agencies, as appropriate and consistent with applicable law, to identify, analyze, and address disproportionate and adverse human health and environmental effects (including risks) and hazards of Federal activities, including those related to climate change and cumulative impacts of environmental and other burdens on communities with environmental justice concerns. It builds upon EO 12898 Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations. The CEQ EJ Guidance identifies four important ways to consider EJ under NEPA, including: -"Mitigation measures identified as part of . . . an environmental impact statement (EIS), or a record of decision (ROD), should, whenever feasible, address significant and adverse environmental effects of proposed federal actions on minority populations, low-income populations, and Indian tribes." -"Each Federal agency must provide opportunities for effective community participation in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving the accessibility of public meetings, crucial documents, and notices." EPA recommends collaborating with affected communities to develop specific mitigation measures to address the potential disproportionate EJ impacts identified in the DSEIS. When developing mitigation measures, consider mechanisms to minimize impacts of the proposed Program to communities, noting differences of Alaska Native communities, and the variation of impacts within communities. It is important to shape mitigation efforts through engagement with each uniquely impacted group and utilize Traditional Ecological Knowledge (TEK), where appropriate.(3) (3) See Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships, 86 Fed. Reg. 7,491 (Jan. 26, 2021); Executive Order 13,985: Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, 86 Fed. Reg. 7,009 (Jan. 20, 2021); Memorandum on Indigenous Traditional Ecological Knowledge and Federal Decision Making, (Nov. 15, 2012), https://www.whitehouse.gov/wp-content/uploads/2021/11/111521-OSTP-CEQ-ITEK-Memo.pdf	Efforts to meaningfully involve affected communities are summarized in the Direct and Indirect Impacts discussion of the environmental justice analysis; they include public meetings, coordinating with federally recognized Tribes, government-to-government meetings, ANCSA corporation consultations, and having local and tribal governments participate as cooperating agencies. The involvement of these communities has resulted in mitigation measures that mitigate impacts on the communities and resources they rely on. Mitigation measures for cultural resources, subsistence, sociocultural systems, economy, and public health areas are described in each of those sections of the analysis. As those are the identified mechanisms for potential environmental justice impacts, no separate environmental justice mitigation measures are proposed. The summary conclusion or "environmental justice determination" will be made in the ROD.
Boldrick	Lauren	EPA Region 10	80058	11	EPA recognizes that ANWR will continue to seek funding and military assistance for further cleanup and contaminant removal at Formerly Used Defense Sites (FUDS), and for removal of heavy equipment left along the old bulldozer trail in the southeastern portion of ANWR. EPA recommends the NEPA analysis discuss remediation timelines for FUDS, considering the disproportionate impacts of historical and current upstream development to the North Slope Borough population.(14) (14) Please see the comments on Environmental Justice for additional information.	There are several Formerly Used Defense sites on the Coastal Plain, however, all FUDS sites on the Arctic Refuge are 'closed' and therefore, have been remediated. The exception is a site on Barter Island

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Boldrick	Lauren	EPA Region 10	80058	14	EPA recommends mitigation efforts be guided by meaningful public engagement with impacted communities. CEQ EJ Guidance states that "agencies should elicit the views of the affected populations on measures to mitigate a disproportionately high and adverse human health or environmental effect...and should carefully consider community views in developing mitigation strategies."(16) (16) CEQ EJ Guidance, page 16. EO 14096 highlights the need to "provide opportunities for the meaningful engagement of persons and communities with environmental justice concerns who are potentially affected by Federal activities including by providing timely opportunities for members of the public to share information or concerns and participate in decision-making processes, fully considering public input provided as part of decision-making processes, ... and providing notice of and engaging in outreach to communities or groups of people who are potentially affected and who are not regular participants in Federal decision-making."	Efforts to meaningfully involve affected communities are summarized in the Direct and Indirect Impacts discussion of the environmental justice analysis; they include public meetings, coordinating with federally recognized Tribes, government-to-government meetings, ANCSA corporation consultations, and having local and tribal governments participate as cooperating agencies. The involvement of these communities has resulted in mitigation measures that mitigate impacts on the communities and resources they rely on. Mitigation measures for cultural resources, subsistence, sociocultural systems, economy, and public health areas are described in each of those sections of the analysis. As those are the identified mechanisms for potential environmental justice impacts, no separate environmental justice mitigation measures are proposed. The summary conclusion or "environmental justice determination" will be made in the ROD.
Boldrick	Lauren	EPA Region 10	80058	15	EPA recommends: -Designing robust community engagement practices to maximize participation opportunities for communities that would be affected by the Program, such as community-based workshops to facilitate discussion and issue resolution. -Creating community advisory committees with representatives from impacted communities to help facilitate guidance and feedback from community members. -Hosting focus group discussions to have robust conversations around mitigation that is appropriate to each impacted community. -Advertising these engagement opportunities through a wide range of communication channels representing trusted sources of information by the affected communities (e.g., websites, radio, phone calls, flyers, letters) to ensure the broader community is represented in the decision-making process.	Efforts to meaningfully involve affected communities are summarized in the Direct and Indirect Impacts discussion of the environmental justice analysis; they include public meetings, coordinating with federally recognized Tribes, government-to-government meetings, ANCSA corporation consultations, and having local and tribal governments participate as cooperating agencies. The involvement of these communities has resulted in mitigation measures that mitigate impacts on the communities and resources they rely on. Mitigation measures for cultural resources, subsistence, sociocultural systems, economy, and public health areas are described in each of those sections of the analysis. As those are the identified mechanisms for potential environmental justice impacts, no separate environmental justice mitigation measures are proposed. The summary conclusion or "environmental justice determination" will be made in the ROD.
Brisson	Brook	Trustees for Alaska	80131	436	Executive Order No. 12898, issued in 1994, requires that all federal agencies "make achieving environmental justice part of [their] mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of [agency] programs, policies, and activities on minority populations and low-income populations."(1194) President Biden's Executive Order 14008 reaffirmed and strengthened this commitment.(1195) The draft SEIS goes further toward fulfilling this mandate than BLM's previous analysis. We urge the agencies to more accurately describe the tremendous detrimental impacts to communities across the Arctic and Interior - in both Alaska as well as Canada - in the final SEIS by accounting for all phases of oil and gas activities and all relevant impacts with meaningful specificity. (1194) E.O. 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1195) E.O. 14008, Tackling the Climate Crisis at Home and Abroad, §§ 219-23 (Jan. 27, 2021).	Potential climate change impacts on environmental justice populations are discussed in the Draft SEIS. The environmental justice analysis, which is based on Executive Order 12898, does not consider potential impacts on Canadian communities. That EO calls for "identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects...on minority populations and low income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands."
Brisson	Brook	Trustees for Alaska	80131	437	Environmental justice impacts from oil and gas activities on the Coastal Plain would reverberate across the Arctic and the Interior and fall disproportionately on low-income and/or minority populations. BLM substantially failed to acknowledge this reality in its prior EIS by limiting the scope of its analysis to just four communities based on their proximity to the Coastal Plain.(1196) In recognition of the interconnected nature of the region and the migratory nature of important subsistence species, the draft SEIS takes a broader view. We appreciate that the agencies considered the environmental justice impacts to Kaktovik, Nuiqsut, Arctic Village, and Venetie as well as eighteen other communities beyond the immediate program area that depend upon the Central Arctic and Porcupine Caribou Herds.(1197) It is, however, unclear what the agencies intent is in identifying four primary communities and then 18 additional communities. The basis for the distinction is that the four communities are closest to the program area and have subsistence uses in or near the program area or rely heavily on resources that use the program area. A number of the 18 other identified communities fit that same definition. This is particularly so given that the agencies correctly acknowledge that environmental justice impacts associated with a leasing program for the Coastal Plain must "encompass the social and cultural value of subsistence resources" because caribou calving and bird nesting grounds are sacred to the Gwich'in.(1198) We encourage BLM and FWS to revisit this distinction and question whether it is meaningful to the analysis. (1196) 2019 DEIS Comment Letter at 333-34. (1197) DSEIS at 3-367. (1198) Id. 1 at 3-368.	The communities included in the environmental justice analysis were based on their proximity to the Coastal Plain and/or identified substantial use of relevant Coastal Plain subsistence resources, as discussed in Section B.4.3.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	438	Additionally, while the draft SEIS takes the first step toward considering a broader range of communities (albeit imperfectly), the analysis itself fails to specifically mention the eighteen communities purportedly included in the agencies' analysis. As a result, the analysis is functionally limited to the four communities considered in the previous EIS. In addition, the agencies repeat analytical shortcomings from BLM's prior analysis. First, like BLM's faulty analysis in the prior EIS, the draft SEIS arbitrarily limits the agencies' environmental justice analysis to impacts from post-lease activities.(1199) In so doing, the agencies dramatically underestimated the potential impacts to minority and low-income populations that could result from oil and gas activities on the Coastal Plain including pre-leasing seismic exploration or the impact of leasing itself.(1200) Second, the agencies limited their analysis of social justice impacts to economic, subsistence, sociocultural, and public health impacts.(1201) But adequate analysis requires consideration of other factors that impact affected communities. Relevant impacts that should be included in the final SEIS include impacts to archeological resources, visual resources, acoustics, air quality, fish, birds, and caribou. This analysis should include impacts from all stages of oil and gas activities, including pre-lease and off-lease seismic if the agencies intend to allow for such activities. As these issues have been addressed in prior comments, we fully incorporate those comments here.(1202) (1199) Id. at 3-369. (1200) Id. at 3-358 (explaining The Gwich'in "would experience cultural and spiritual impacts resulting from any development of the program area"). (1201) Id. at 3-370. (1202) 2019 DEIS Comment Letter at 332-36; 2021 Scoping Comment Letter at 186-88.	Table O-1 in the Draft SEIS describes all 22 communities included in the environmental justice analysis in terms of their minority and low-income populations and tribal entities. As described in Appendix G of the Draft SEIS, post-lease activities include seismic and drilling exploration, development, and transportation of oil and gas in and from the Coastal Plain. The environmental justice analysis has been revised based on the recommendation to consider other factors that could potentially impact environmental justice populations in affected communities. Specifically, summaries of potential impacts described in the cultural resources analysis (Section 3.4.2) that were identified as being of environmental justice concern, including impacts to archeological resources and visual resources, have been incorporated into the environmental justice analysis. Potential air quality and acoustics (noise) impacts were analyzed in the Draft SEIS as public health issues (Section 3.4.11), with the summary findings of those analyses incorporated into the environmental justice analysis. Potential impacts to fish, birds, and caribou were analyzed in the subsistence uses and resources analysis (Section 3.4.3) of the Draft SEIS, with the summary findings of that analysis incorporated into the environmental justice analysis.
Brisson	Brook	Trustees for Alaska	80131	439	Concerningly, the draft SEIS reduces the level of specificity found in BLM's prior analysis. For example, in the final EIS, BLM concluded: [c]ommunities that are most likely to experience negative sociocultural impacts would be those that experience impacts on subsistence, while not having increased income or employment opportunities, such as Arctic Village and Venetie; therefore, the action alternatives would constitute a disproportionate, adverse impact on the environmental justice communities of Arctic Village and Venetie.(1203) (1203) FSEIS at 3-287. A similar passage in the draft SEIS draws the same conclusion but fails to identify the communities likely to experience disproportionate adverse impacts.(1204) This is problematic. Taking a hard look at social justice impacts requires the agencies to actually draw conclusions about which communities are expected to be impacted. If the intent is to be more inclusive, that is not readily apparent given the lack of analysis specific to other communities. In addition, this approach conflicts with CEQ guidance advising agencies to "elicit the views of the affected populations on measures to mitigate a disproportionately high and adverse human health or environmental effect" and "carefully consider community views in developing and implementing mitigation strategies."(1205) Without actually identifying impacted communities, the agencies cannot fulfill these obligations. (1204) DSEIS at 3-376 ("Communities that are most likely to experience adverse sociocultural impacts would be those that experience disruptions to subsistence activities, including subsistence activities supporting mixed cash/subsistence economies, while not having increased income or employment opportunities."). (1205) CEQ, Environmental Justice Guidance Under the National Environmental Policy Act, 1997.	Text has been added to the cumulative effects analysis indicating that the Gwich'in communities of Arctic Village and Venetie are expected to see limited economic activity and revenues associated with oil and gas development.
Brisson	Brook	Trustees for Alaska	80131	440	The analysis of impacts between action alternatives relies on the acreage leases, stipulations, and ROPs as a measure of the impacts.(1206) The basic analysis is that Alternative B will have the most impacts, followed by Alternative C, and then Alternative D. Such generalized statements are not an analysis. Additionally, the discussion relies on various stipulations and ROPs as the basis for the assertion that there will be fewer impacts under Alternatives C and D without any analysis. Nor is there an analysis of the likelihood of those stipulations and ROPs to be waived, excepted, or modified. BLM and FWS should undertake a more robust analysis of the environmental justice impacts in the final SEIS. (1206) DSEIS at 3-373 to 3-375.	As stated in the Draft SEIS, the analysis of potential direct and indirect impacts on environmental justice populations in the study area communities is based on the analyses of the direct and indirect impacts of the active alternatives on subsistence uses and resources, sociocultural systems, the economy, and public health. As discussed in Section 2.2, acreage leases, stipulations, and ROPs are the basis for defining the action alternatives. The Draft SEIS does not address the likelihood of stipulations and ROPs for a given action alternative being waived, excepted, or modified.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	441	There is a similar lack of specificity in the agencies' cumulative analysis which lays out a summary of impacts relevant to economic, subsistence, sociocultural, and public health resources. The summaries provided do not include a list of the reasonably foreseeable future actions (RFFAs) considered for each relevant resource. There is also no indication which of the RFFAs listed in Appendix F might be relevant to environmental justice. In addition, the analysis does not indicate which communities are likely to experience negative environmental justice impacts. For example, in the section on cumulative analysis of public health resources, the agencies address impacts to Kaktovik specifically and indicate that the community is likely to experience increased revenues to support helpful infrastructure.(1207) However, this section does not indicate that other communities are not expected to realize this positive impact. In fact, no other community is specifically addressed in this section. This is significant because, while Kaktovik may benefit from oil and gas revenues, many other communities - including all of the YKCA, Arctic Village, and Venetie - will not.(1208) The agencies take a similar approach in the cumulative analysis of economic impacts. That section appears to assert that government revenues would increase in general across impacted communities due to an increase in various tax bases. This is not accurate. Many communities which can and should be specifically identified in this analysis are not expected to realize such benefits because they do not levy taxes.(1209)	As stated in the Draft SEIS, the analysis of potential cumulative impacts on environmental justice populations in the study area communities is based on the analyses of the cumulative impacts to subsistence uses and resource, sociocultural systems, the economy, and public health. The relevant RFFAs for these resource areas are discussed in Sections 3.4.3, 3.4.4, 3.4.10, and 3.4.11, respectively. Text has been added to the Cumulative Impacts section of the environmental justice analysis indicating that the Gwich'in communities of Arctic Village and Venetie are expected to see limited economic activity and revenues associated with oil and gas development.
Brisson	Brook	Trustees for Alaska	80131	442	(1207) Id. at 3-377. (1208) Id. at 3-427 ("In contrast to the NSB, the residents of the YKCA as a whole are not expected to experience beneficial economic impacts from the leasing program because areas within Alaska's unorganized borough lack authority to levy taxes. Moreover, Arctic Village and Venetie are not enrolled in a regional Native corporation and do not have ANSCA village corporations. As such, those communities do not receive any increased economic activity associated with resource development or shares therein by ANCSA corporations.") (1209) Id.	Text has been added to the Cumulative Impacts section of the environmental justice analysis indicating that the Gwich'in communities of Arctic Village and Venetie are expected to see limited economic activity and revenues associated with oil and gas development.
Brisson	Brook	Trustees for Alaska	80131	443	In the final SEIS the agencies should revise their analysis of direct, indirect, and cumulative environmental justice impacts to address all stages of oil and gas leasing and meaningfully incorporate analysis of communities that are not in the immediate project area. The analysis should also make information regarding relevant RFFAs more easily accessible and provide adequate specificity regarding the positive and negative environmental justice impacts expected to flow from oil and gas leasing on the Coastal Plain.	As described in Appendix G of the Draft SEIS, post-lease activities include seismic and drilling exploration, development, and transportation of oil and gas in and from the Coastal Plain. As stated in the Draft SEIS, the analysis of potential cumulative impacts on environmental justice populations in the study area communities is based on the analyses of impacts to subsistence uses and resource, sociocultural systems, the economy, and public health. The relevant RFFAs for these resource areas are discussed in Sections 3.4.3, 3.4.4, 3.4.10, and 3.4.11, respectively.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	166	As with the 2019 Final EIS, the draft SEIS fails to adequately analyze environmental justice implications of oil and gas development, and how Arctic Village and Venetie would be specifically impacted. Like the legally deficient analysis in the 2019 Final EIS, the draft SEIS arbitrarily limits the agencies' environmental justice analysis to impacts from post-lease activities.(305) As a result, the agencies have dramatically underestimated the potential impacts to the Tribes that could result from oil and gas activities on the Coastal Plain, including seismic exploration and/or the impacts of leasing itself.(306) (305) Draft SEIS at 3-369. (306) Id. at 3-358 (explaining The Gwich'in "would experience cultural and spiritual impacts resulting from any development of the program area"). As the agencies will find in their review of the Gwich'in Knowledge in the Tribes' Attachment A-which is important to consider for the agencies to improve their environmental justice analysis-Gwich'in Cultural Experts express a sense of marginalization by continued efforts to force development on the Coastal Plain. They understand this development stems from a confluence of the colonial culture's short-sightedness, greed, and institutional racism.(307) Moreover, Gwich'in Cultural Experts singled-out potential oil development on the Coastal Plain, including involvement in the leasing program process itself, as a major threat to cultural continuation, and often touch on the toll that constantly fighting this development has had on mental health and family life.(308) (307) Attachment A at 54-57. (308) See, e.g., id at 57-62.	Two Gwich'in communities (Arctic Village and Venetie) are specifically considered in the Direct and Indirect Impacts section of the environmental justice analysis based on their identified use of relevant subsistence resources in Sections 3.4.3 and 3.4.4. Text has been added to the Cumulative Impacts section of the environmental justice analysis indicating that these two communities are expected to see limited economic activity and revenues associated with oil and gas development. As described in Appendix G of the Draft SEIS, post-lease activities include seismic and drilling exploration, development, and transportation of oil and gas in and from the Coastal Plain.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	167	In the final SEIS, the agencies should revise their analysis of direct, indirect, and cumulative environmental justice impacts to address all stages of oil and gas leasing and meaningfully incorporate Gwich'in Traditional Knowledge into this analysis.	As described in Appendix G of the Draft SEIS, post-lease activities include seismic and drilling exploration, development, and transportation of oil and gas in and from the Coastal Plain. The analyses of impacts to subsistence uses and resources (Section 3.4.3) and sociocultural systems (Section 3.4.4) in the Draft SEIS incorporated traditional knowledge, and the summary findings of those analyses were incorporated into the environmental justice analysis.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Demientieff	Bernadette	Gwich'in Steering Committee	80355	14	Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.(54) At the core of this definition is equal access to the decision-making process to have a healthy environment in which to live, learn, and work.(55) Oil and gas leasing, exploration, development, and production is an environmental justice issue for the Gwich'in. BLM's prior environmental justice analysis failed to sufficiently evaluate whether the leasing program will have "disproportionately high and adverse human health or environmental effects ... on minority populations and low-income populations."(56) (54) U.S. Env'tl. Prot. Agency, Env'tl. Justice, https://www.epa.gov/environmentaljustice . (55) Id. (56) E.O. 12898, Fed. Actions to Address Env'tl. Justice in Minority Populations and Low-Income Populations. Executive Order No. 12898 requires that all federal agencies "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." President Biden's Executive Order 14008 reaffirmed and strengthened this commitment.(57) (57) E.O. 14008, Tackling the Climate Crisis at Home and Abroad, §§ 219-23 (Jan. 27, 2021). To meet these requirements, the agencies must more accurately describe the tremendous detrimental impacts to Gwich'in communities in both Alaska as well as Canada in the final SEIS by accounting for all phases of oil and gas activities and all relevant impacts with meaningful specificity. Gwich'in communities with ties to the Coastal Plain are rural, contain many low-income households, are minority populations of Indigenous people, and retain subsistence lifestyles in a mixed, subsistence-cash income economy. Continued traditional and cultural uses of our lands and waters contribute to the physical and spiritual well-being of Gwich'in, helping to maintain our close relationship to the land. Oil and gas leasing, exploration, and development activities would result in the gradual loss, decline, or change in subsistence resources upon which Gwich'in depend. This would place a disproportionate weight of any adverse effects on low-income and/or minority populations.	The environmental justice analysis in the Draft SEIS acknowledges that Gwich'in communities with ties to the Coastal Plain are rural, contain many low-income households, are minority populations of Indigenous people, and retain subsistence lifestyles in a mixed, subsistence-cash income economy. In addition, the analysis states that continued traditional and cultural uses of our lands and waters contribute to the physical and spiritual well-being of Gwich'in. The analysis concludes that under all the action alternatives, disproportionately high and adverse impacts on minority and low-income populations and Alaska Native tribal populations would occur primarily through potential decreases in the abundance or availability of subsistence resources.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	15	All of the Gwich'in communities dependent upon the Coastal Plain's resources - in Alaska and Canada - meet the criteria as for being minority or low-income populations, as these are primarily communities of Indigenous people with a subsistence-cash economy. Environmental justice impacts from oil and gas activities on the Coastal Plain would reverberate across the Arctic and the Interior and fall disproportionately on our communities. As such, all of our communities should have been considered in the environmental justice analysis. BLM and FWS structured their analysis to identify two groupings of communities based on an arbitrary justification. This approach conflicts with CEQ guidance advising agencies to "elicit the views of the affected populations on measures to mitigate a disproportionately high and adverse human health or environmental effect" and "carefully consider community views in developing and implementing mitigation strategies."(58) Taking a hard look at social justice impacts requires the agencies to actually draw conclusions about which communities are expected to be impacted. BLM and FWS should expand the analysis of environmental justice impacts and remove the distinction based on proximity to the program area. Doing so is consistent with the recognition that environmental justice impacts associated with a leasing program for the Coastal Plain must "encompass the social and cultural value of subsistence resources" because caribou calving and bird nesting grounds are sacred to the Gwich'in.(59) Once BLM and FWS fully recognize the communities impacted, the agencies should then specifically analyze the impacts to all affected communities, and not some limited group of them. Without actually identifying impacted communities, the agencies cannot fulfill their obligations. (58) CEQ, Environmental Justice Guidance Under the National Environmental Policy Act, 1997. (59) DSEIS at 3-368.	The communities described in the environmental justice analysis in the Draft SEIS include all nine Gwich'in communities (Arctic Village, Beaver, Birch Creek, Canyon Village [see Fort Yukon], Chalkyitsik, Circle, Eagle Village [see Eagle], Fort Yukon, and Venetie).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Demientieff	Bernadette	Gwich'in Steering Committee	80355	16	First, like BLM's faulty analysis in the prior EIS, the draft SEIS arbitrarily limits the agencies' environmental justice analysis to impacts from post-lease activities.(60) Second, the agencies limited their analysis of social justice impacts to economic, subsistence, sociocultural, and public health impacts.(61) But adequate analysis requires consideration of other factors that impact affected communities. Relevant impacts that should be included in the final SEIS include impacts to archeological resources, birds, and caribou. This analysis should further include impacts from all stages of oil and gas activities, including pre-lease and off-lease seismic if the agencies intend to allow for such activities. (60) DSEIS at 3-369. (61) DSEIS at 3-370.	As described in Appendix G of the Draft SEIS, post-lease activities include seismic and drilling exploration, development, and transportation of oil and gas in and from the Coastal Plain. The environmental justice analysis has been revised based on the recommendation to consider other factors that could potentially impact environmental justice populations in affected communities. Specifically, summaries of potential impacts described in the cultural resources analysis (Section 3.4.2) that were identified as being of environmental justice concern, including impacts to archeological resources and visual resources, have been incorporated into the environmental justice analysis. Potential air quality and acoustics (noise) impacts were analyzed in the Draft SEIS as public health issues (Section 3.4.11), with the summary findings of those analyses incorporated into the environmental justice analysis. Potential impacts to fish, birds, and caribou were analyzed in the subsistence uses and resources analysis (Section 3.4.3) of the Draft SEIS, with the summary findings of that analysis incorporated into the environmental justice analysis.
Dewitt	Meda	-	80370	1	It was insufficient in reviewing the burdens that it will place on our indigenous women and children and our missing and murdered indigenous women that have a history with their experience with extractive resource transit workers. It did not sufficiently review the history and the data associated with that worldwide occurrence. It did not review or talk about the increased burden on our judicial system, which is already underfunded, understaffed, and barely on the radar as a talking point for some of our politicians. We have thousands and thousands of rape cases that are behind. We do not need to bring in more of these activities without sufficient supports.	Text has been added to the Direct and Indirect Impacts section of the environmental justice analysis indicating that Alaska Native women and girls experience substantially higher rates of domestic and other violence, and oil and gas development in or near Alaska Native communities may raise the already high risk of violence to Alaska Native women and girls.

U.3.17 Executive Summary

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Adoko	Ashlee	State Of Alaska	80221	27	Document Reference Executive Summary, ES-7, Paragraph 1 Reviewer MW Agency DFG Resource/Topic Mistake Comment: The paragraph states "The community of Nuiqsut could experience impacts on caribou,..." Nuiqsut should be replaced with Kaktovik.	The Executive Summary has been revised and Nuiqsut was replaced with Kaktovik.
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	5	It is clear that BLM did not consider Congress' direction in establishing the Program in the Tax Act in its draft SEIS. Section 20001 clearly states that BLM is required to "establish and administer a competitive oil and gas leasing program" in the 1002 Area.(24) BLM's actions, however, have had the opposite effect and do nothing more than create a "chilling effect" and instability within the Program, particularly as it relates to the second lease sale that BLM is required to hold by the end of next year. It is hard to believe that DOI's goal is anything other than undermining the Program and convincing no one to bid. The Executive Summary, for example, reiterates the "alleged deficiencies" that you have cited as the rationale for this prolonged and unnecessary effort.(25) Such subjective, pre-decisional statements are political in nature and inconsistent with the purpose and need of the Program. One can only conclude that the use of generalized statements like this are a maneuver designed to implement a political agenda rather than the law. (24) Tax Act at § 20001(b)(2)(A). (25) Draft SEIS at ES-1. Further, BLM followed the requirements of NEPA in 2020, when it considered maximum acreage disturbance in order to disclose the maximum amount of environmental impacts the Program would cause in the 1002 Area. This was based on their alternatives analysis, which ranged from the "no action" alternative to a maximum development scenario. Yet your statement regarding "alleged deficiencies" is broad and does not provide specific information as to how that analysis is deficient. BLM's best option for administering a competitive oil and gas leasing program is to therefore abandon this effort in lieu of re-adopting "Alterative B" from the ROD and reinstating the cancelled leases, which will allow the Program to flourish.	The Executive Summary is intended to be a summary of the SEIS. Details on the deficiencies in the Final EIS are provided in Chapter 1, Section 1.1, page 1-1 and are referenced directly from Secretarial Order 3401 and the lease suspension letters issued by the Principal Deputy Assistance Secretary for Land and Mineral Management in June 2021.
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	10	The draft SEIS is also a product of a lack of transparency. BLM states that the FWS "was not yet confirmed as a joint lead agency during the SEIS public scoping period."(29) DOI, however, makes it clear in the draft SEIS that the FWS will manage the surface estate while the BLM will manage the oil and gas leasing program. BLM misled the public on who the responsible officials were in order to identify issues associated with scoping, given the FWS was not yet identified as a co-lead.(30) Congress intended that BLM would manage the Program and did not identify any lead role for the FWS. (29) Draft SEIS at ES-3. (30) Id.	The USFWS became a Joint Lead Agency in November 2021 following scoping. They were involved in reviewing and finalizing the scoping report and was a Joint Lead with BLM in the development of alternatives.
Jorgenson	Janet	-	80336	2	EXECUTIVE SUMMARY It states that the potential lease area is 1.5 million acres out of 19 million in the whole refuge. That makes the lease area sound insignificant. Like we should be thankful that's all they want to take. The 19 million acres includes extensive rock and ice in the high Brooks Range and vast areas of burned-up boreal forest on the south side of the refuge. Instead, it should be added that the 1.5 million acres is ~75% of the Arctic Refuge's North Slope tundra, which is the only protected north slope tundra in Alaska or the USA. The area in the lease area is known as 'the biological heart of the refuge'; it is not an insignificant, expendable part.	The Executive Summary is intended to be a summary of the SEIS and as such, the acreage reference and comparison is appropriate. Additional information on the Program Area and Arctic national Wildlife Refuge can be found in the Draft SEIS, Chapter 1, Sections 1.5 and 1.5.1, pages 1-4 to 1-5.

U.3.18 Fish and Aquatic Species

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoen	John	-	45576	17	Fish: Freshwater is much more limited on the Arctic Refuge coastal plain than areas west of the refuge. Damage to wetlands and reduction in surface water will have significant impacts on fish including dolly varden, arctic grayling, and arctic cisco. The impacts to fish and the hydrology of the coastal plain from water withdrawals for ice roads and pads and other uses must be carefully evaluated and cumulative impacts assessed.	Indeed, freshwater habitat is limited and the potential impacts to fish and aquatic organisms and their habitat requires that these impacts be carefully evaluated by alternative. ROP 8 prohibits the withdrawal of unfrozen water from springs, rivers, and streams (from the onset of freeze-up to breakup). Note: Alternative D includes additional summer and winter water withdrawal restrictions. ROP 9 places specific water withdrawal limits (volumes) on lakes and ponds based on the season and the presence of fish.
Brisson	Brook	Trustees for Alaska	80131	219	Unfortunately, the majority of fish species remain understudied in Arctic regions and therefore little is known about movement patterns, important habitat utilized, and the diversity of life history types. From limited research on fish movement across the Arctic region, results generally show that fish frequently move among habitats and utilize habitats across large distances (Bradley et al. 2016; Heim et al. 2016; Brown et al. 2018; Leppi et al. 2021) emphasizing the importance of connectivity between habitats. All fish species require permanent and temporary aquatic habitats for spawning, foraging, refuge, and dispersal (Schlosser 1991; Heim et al. 2018). These habitats may change over seasons and life stages, and can be perennial or temporary, lasting days to months. Each of these habitats is important for the management and conservation of Arctic fish species, yet temporary aquatic habitats are generally unknown and often not considered in management plans (Acuna et al. 2017; Heim et al. 2018). Additionally, while recent research on life history diversity of certain fish species such as Dolly Varden (Gallagher et al. 2018; Brown et al. 2018; Gallagher et al. 2019) or Broad Whitefish (Leppi et al. 2022), has provided novel insights into the spectrum of life history variations and life-long movement patterns, information does not exist for most species in the Coastal Plain of the Arctic National Wildlife Refuge. This is a major deficiency for assessing the affected environment on fish species within the draft SEIS.	This SEIS uses the best available information to identify general potential impacts to fish and fish habitat that could result from oil and gas exploration, development, and production. Fortunately, many of the authors listed in this comment are still active in studying life history and behavior for many of the species present in the ACP and have provided much of the information we now have at our disposal. That said, any specific project proposals may require additional site-specific baseline studies, including fish and fish habitat surveys, as a part of their project-specific NEPA analysis.
Brisson	Brook	Trustees for Alaska	80131	220	Overall, the assessment of baseline aquatic habitat within the Coastal Plain is scant and an inaccurate assessment of reality. The baseline assessment does not provide accurate estimates on the location, quantity, or type of fish habitat including rivers, streams, lakes, and tundra ponds within the Coastal Plain. A systematic survey should be conducted for the Coastal Plain to estimate fish species abundance (see Borchert et al. 2002 for methods) and identify important habitats for reproduction, foraging, and survival based on empirical relocation data (e.g., radio tracking), eDNA, and intrinsic habitat models that use habitat attributes to estimate habitat use across large spatial extents (e.g. Burnett et al. 2007; Bidlack et al. 2014; Matter et al. 2018; Leppi et al. 2022). While the draft SEIS addresses fish habitat at a high level, it does not adequately consider the affected environment for aquatic invertebrates and plants, two important habitat attributes that provide food and physical habitat for various life stages of fish. There is a tremendous amount of scientific literature available from the last 30+ years that explores and documents how to quantify and describe aquatic habitat and species occurrence across large riverscapes ? rivers, streams, lakes, wetlands, groundwater flow pathways, within a terrestrial landscape from the headwaters to the ocean (see Fausch et al. 2002; Naiman et al. 2005). Information utilizing existing methodologies to identify fish habitat and species occurrence in the Coastal Plain is absent; the final SEIS should, at a minimum, require such surveys to be completed at the project level.	This SEIS uses the best available information to identify general potential impacts that could result from oil and gas exploration, development, and production. Any specific project proposals may require additional site-specific baseline studies, including fish and fish habitat surveys, as a part of their project-specific NEPA analysis.
Brisson	Brook	Trustees for Alaska	80131	222	The assessment of lakes and stream-lake connections is inaccurate within the draft SEIS. To fully understand the distribution of lake types, stream-lake connectivity, and lake sensitively to climate change and water withdrawal across the Coastal Plain, an extensive lake-based database needs to be created and lakes must be classified based on a suite of attributes following methods outlined in Jones et al. (2017). First, InSAR digital surface model, high-resolution satellite imagery along with field data should be collected for all lakes and tundra ponds within the entire Coastal Plain. Then additional data layers such as surficial geology, lake surface area change, stream connection and landcover vegetation should be collected, and then a lake classification should be completed. Without a detailed understanding of lake types across the Coastal Plain, it is impossible to quantify the baseline of the affected environment. This in turn leads to likely inaccuracies in lentic fish habitat within the draft SEIS section 3.3.2 affected environment. At a minimum, the agencies should require creation of a lake-based database for any project-level approvals.	For an analysis of "lease sale impacts" to project area lakes, the current analysis is sufficient to provide an overview of potential resource impacts. Maps 3-19 and 3-20 (Volume 2: Appendix A (Maps and Figures) highlight the relative sparsity of lakes compared to the NPRA portion of the Arctic Coastal Plain. Table K-8 (Appendix K.2 in Volume 3) further describes the lack of available liquid water resources to oil and gas infrastructure needs during winter months. Indeed, the relative lack of available fish overwintering habitat in the Coastal Plain Oil and Gas Leasing Program area reinforces the need for additional detailed survey work should a project be proposed, at which time, additional project-specific environmental analysis work would be conducted. This SEIS uses the best available information to identify general potential impacts that could result from oil and gas exploration, development, and production. Any specific project proposals may require additional site-specific baseline studies, including fish and fish habitat surveys, as a part of their project-specific NEPA analysis.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	223	The information on fish habitat within the Coastal Plain program area (Table 3-33 & Map 3-19) is inaccurate and needs to be updated. Fish distribution and habitat use information does not provide a reliable estimate of species-specific habitats for freshwater, anadromous, and marine species that inhabit waters within the Coastal Plain. As stated in Johnson and Blossom (2017), "information from the anadromous water catalog (AWC) only reflects the extent of fish surveys or known anadromous fish use in a particular water body (e.g., stream, river, lake) and does not represent species occurrence or habitat use. A variety of habitat variables (e.g., water clarity, river size, and depth), sampling methods (e.g., weir, gillnet) and other factors (e.g., remoteness) influence the detection of fish species which the AWC does not take into account". The data from the AWC is not an accurate assessment of freshwater, anadromous, or marine species habitat use. A systematic survey should be conducted prior to exploration or development to estimate species abundance (see Borchert et al. 2002 for methods) and identify habitats for reproduction, foraging, and survival based on empirical relocation data (e.g., radio tracking), eDNA, and intrinsic habitat models that use habitat attributes to estimate habitat use across large spatial extents (e.g. Burnett et al. 2007; Bidlack et al. 2014; Matter et al. 2018; Leppi et al. 2022). Current estimates of fish-bearing and anadromous streams are incorrect and recent modeled data for a subset of the Coastal Plain suggests that anadromous fish habitat is much greater (see https://netmap-portal.squarespace.com/dataSEIS). While data and scientific methods exist to develop accurate assessments of fish habitat (Benda et al. 2007; Benda et al. 2015), Section 3.3.2 of the draft SEIS uses inaccurate and limited available data to poorly quantify the affected environment. At a minimum, the agencies should require more complete and accurate assessments of fish habitat prior to any project-level approvals.	This comment suggests that the AWC is the only source of information on fish presence and habitat use in Leasing Program area waterbodies, which it is not. Several USFWS supported studies are referenced in Draft SEIS, though additional survey work is warranted. This SEIS uses the best available information (e.g., Anadromous Waters Catalog and USFWS reports and peer reviewed literature) to identify general potential impacts that could result from oil and gas exploration, development, and production. Any specific lease area project proposals may require additional site-specific baseline studies, including hydrology, fish, and fish habitat surveys, as a part of their project-specific NEPA analysis.
Brisson	Brook	Trustees for Alaska	80131	224	Estuaries, lagoons, and nearshore marine waters are critical habitat features for a variety of aquatic species at various life-stages and seasonal periods (See Craig et al. 1981; Craig et al. 1984; Craig and Haldorson 1985; Craig 1989; West et al. 1992; Underwood et al. 1996; Dutton et al. 2012; Courtney et al. 2018). In addition to serving as important habitat for various fish species, these areas are also Essential Fish Habitat (EFH) for Arctic Cod (<i>Boreogadus saida</i>), Saffron Cod (<i>Eleginus gracilis</i>) and Snow Crabs (<i>Chionoecetes opilio</i>). Section 3.3.2 of the draft SEIS does not provide accurate and detailed information on the landscape features in relation to habitat use to quantify the baseline affected environment.	Unfortunately, the commenter does not indicate what information is inaccurate in the AE section. The Coastal Plain offshore affected environment is described in Section B.3.2, Lagoons and Nearshore Brackish Waters. See Appendix Q, Essential Fish Habitat, for the Project's EFH Assessment. In the event that project-specific environmental analysis is conducted in the future, an assessment of potential impacts to EFH from project activities will be conducted. At this time, without a project-specific activity associated with most EFH in the area (particularly for the nearshore environment) a detailed analysis of likely effects is not possible.
Brisson	Brook	Trustees for Alaska	80131	225	River, stream, and karst-spring locations are not accurately identified, delineated, or described by Section 3.3.2 of the draft SEIS. The current NHD stream hydrography network provides an inaccurate estimation of channel location, length and extent for Coastal Plain lotic environments. Data on karst springs is limited and new methods, including satellite imagery and empirical data collection, should be used to quantify physical and biological features of habitat (e.g., Pavelsky and Zarnetske 2017). Limited information exists on streamflow, which is inadequate for quantifying the natural flow regimes for each stream. New data must be collected and methods should be used to quantify streamflow metrics (see Olden and Poff 2003). No information exists for stream thermal regimes, which is essential and necessary baseline information (see Steel et al. 2017). No channel reach morphology attribute information is documented to classify and quantify lotic habitat, which is essential to quantify the baseline habitat information for rivers, streams, and springs (Montgomery and Buffington 1997). At a minimum, the agencies should require use of these new methods to quantify springs and streamflow metrics prior to any project-level approvals.	Many of the features described in this comment have been identified by USFWS personnel and described in the Fish and Aquatics section of the SEIS, as well as in Map 3-19 . Any specific project proposals may require additional site-specific baseline studies, including location and identification of additional river, spring and aufeis habitat as well as fish and fish habitat surveys, as a part of their project-specific NEPA analysis.
Brisson	Brook	Trustees for Alaska	80131	226	Information on lakes and tundra ponds attributes within Section 3.3.2 of the draft SEIS is inadequate to quantify the baseline. Given the potential importance for lakes as overwintering fish habitat and the potential impacts from water withdrawal, detailed and unique information needs to be compiled for all lakes within the Coastal Plain using methods by Jones et al. (2017).	This SEIS uses the best available information to identify general potential impacts that could result from oil and gas exploration, development, and production. Any specific project proposals may require additional site-specific baseline studies, including fish and fish habitat surveys, as a part of their project-specific NEPA analysis.
Brisson	Brook	Trustees for Alaska	80131	227	Information on fish species habitat use and occurrence within Section 3.3.2 of the draft SEIS is inadequate to quantify baseline information on fish species. The draft SEIS significantly underestimates fish species presence, occupancy, and habitat use. A rigorous and systematic survey for fish populations abundance, occurrence, and seasonal habitat use has not been collected to document how fish species use the Coastal Plain for reproduction, foraging and survival. Numerous methods that combine eDNA data, intrinsic potential models (also known as resource selection models), and radio tracking currently exist which are both feasible and appropriate for the Coastal Plain (see Falke et al. 2013; Fraley et al. 2018; Matter et al. 2018; Leppi et al. 2022). The agencies should require surveys prior to any project-level approvals.	This SEIS uses the best available information to identify general potential impacts that could result from oil and gas exploration, development, and production. Any specific project proposals may require additional site-specific baseline studies, including fish and fish habitat surveys, as a part of their project-specific NEPA analysis.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	228	Information on aquatic invertebrate habitat use and occurrence within Section 3.3.2 of the draft SEIS is inadequate to quantify baseline information on aquatic species. No site-specific information is provided to quantify the distribution, occupancy, or abundance of invertebrate species in relation to channel morphology of aquatic habitat. Using the river continuum concept (Vanote et al. 1980), the serial discontinuity concept (Ward and Stanford, 1995), and theory on the tributary influences on network patterns (Fisher 1997), an invertebrate community assessment should be completed that incorporates site-specific information across all streams within the Coastal Plain. Additionally, references cited are not specific for the Coastal Plain, are over 18 years old, and do not provide an accurate assessment of the baseline for invertebrate communities. Further, there is no mention of other aquatic species beyond fish and aquatic invertebrates (e.g., plants). At a minimum, the agencies should require a complete invertebrate community assessment prior to any project-level approvals.	This SEIS uses the best available information to identify general potential impacts that could result from oil and gas exploration, development, and production. Any specific project proposals may require additional site-specific baseline studies, including fish and fish habitat surveys, as a part of their project-specific NEPA analysis.
Brisson	Brook	Trustees for Alaska	80131	229	Information on climate change impacts within Section 3.3.2 of the draft SEIS is inadequate. See the recent Intergovernmental Panel on Climate Change polar regions report for an extensive review of the physical, biological, and social impacts of climate change (Meredith et al. 2019). Current and future high-resolution climate data is currently available for the Coastal Plain including upstream areas within each watershed (see Cai et al. 2018), but is not provided in the draft SEIS. Baseline long-term and spatially explicit information on hydrology (e.g., streamflow, water temperature, water quantity, and surficial and groundwater permafrost flow dynamics) is not shown in the draft SEIS and therefore impossible to assess the current and future impacts of climate change. Necessary information is needed to understand baseline information on Arctic lakes along with appropriate methodology documented by Arp et al. (2016). While Stuefer et al. (2017) provides a synthesis and analysis of observational data for three watersheds to the west of the Coastal Plain, it does not provide a reliable estimate of climate impacts for watersheds that flow into the Coastal Plain. To understand climate change impacts on lotic ecosystems in the Coastal Plain, a suite of information, models and empirical data needs to be collected to quantify thermal and streamflow regime (see Poff et al. 1997; Olden and Poff 2003; Isaak and Rieman 2013; Steel et al. 2018). No current geomorphic classification data on lotic and lentic habitats to quantify habitat types and anticipate future change (Montgomery and Buffington 1997) is documented within the draft SEIS, which is necessary to quantify climate change impacts to aquatic ecosystems. At a minimum, the agencies should require collection and analysis of data to provide a reliable estimate of climate impacts for Coastal Plain watersheds prior to any project-level approvals.	Potential impacts from climate change on fish is described in Appendix B, Section B.3.2, Fish and Aquatic Species - Climate Change. Potential impacts to hydrology are discussed in Appendix B, Section B.2.10, Water Resources - Climate Change. This SEIS uses the best available information to identify general potential impacts that could result from oil and gas exploration, development, and production. Any specific project proposals may require additional site-specific baseline studies, including fish and fish habitat surveys, as a part of their project-specific NEPA analysis.
Brisson	Brook	Trustees for Alaska	80131	230	Due to the limited amount of available winter liquid water, if ice roads are built using water extracted from rivers there will likely be both short and long-term impacts on fish populations. Impacts could include direct loss of overwintering habitat, reduced dissolved oxygen concentrations, and increased stress and mortality of Dolly Varden or other Arctic fishes (e.g., Gaboury and Patalas 1984; Evans 2007; Cott et al. 2008). Seismic exploration through noise or instantaneous pressure change has the potential to cause short-term, but severe impacts to overwintering fishes and could include negative behavioral changes (e.g., fleeing, herding), hearing loss, and direct mortality of fish and embryos (McCauley et al. 2003; Popper et al. 2005). Construction of gravel and ice roads, pipelines, and other infrastructure associated with river or streams crossings would mobilize sediment (Maitland et al. 2016), causing associated impacts to rearing, spawning, and overwinter habitat (e.g., Robertson et al. 2007; Chapman et al. 2014), as well as the health and behavior of fishes (e.g., Newcombe and Macdonald 1991; Reid et al. 2003; Robertson et al. 2006; Chapman et al. 2014). Within floodplain channels, infilling and various types of stream and river crossing structures (e.g., ice-bridges, culverts, concrete bridges) have the potential to cause long-term changes to the natural flow regime, and restrict channel movement and fish passage, causing negative impacts to fish populations (Wemple et al. 1996; Cocchiglia et al. 2012; Maitland et al. 2016). Additionally, with the construction and maintenance of a gravel road network, numerous other minor to severe impacts may occur such as hydrocarbon and sump contamination (Schein et al. 2009; Kanigan and Kokelj 2010), introduction of non-native species and increased fishing pressure all of which would have both short and long-term impacts to fish populations (Schindler 2001).	Potential direct and indirect impacts to fish populations in the Program Area are described in Section 3.3.2, Fish and Aquatic Species - Impacts Common to All Action Alternatives. Direct impacts from construction (e.g., trenching, gravel mining, placement of gravel fill) could include the permanent localized loss or alteration of aquatic habitat. Indirect impacts from construction and operation of oil and gas developments could include alternations to water quality (e.g., turbidity, dissolved oxygen content), flow alteration, and water quantity. Additionally, potential impacts from seismic activity are described. In addition to describing the potential impacts to fish, the SEIS also includes a description of lease stipulations and required operating procedures that are intended to eliminate or reduce the extent of impacts from any future exploration or development activity (see Section 2.3.5, Lease Stipulations and Required Operating Procedures).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	231	Information on direct and indirect impacts to fish and aquatic species within Section 3.3.2 of the draft SEIS is inadequate to evaluate direct and indirect impacts of proposed development. In certain instances, impacts may take years to develop (e.g., Walker et al. 1987; Raynolds et al. 2014). The current draft SEIS is lacking accurate information on stream hydrology (surficial and groundwater), climatology, hydrography channel network and floodplain distributions, channel morphology, and distribution and abundance of fish and aquatic species, which are all necessary baseline information to fully evaluate impacts. As possible, the final SEIS should address these gaps using the best available information, and should, at a minimum, require more robust quantitative baseline information and analysis prior to any project-level approvals.	The commentor supposes that inaccurate information on hydrology, climatology, hydrography channel network, etc. was used in the analysis, while also contradictorily suggesting in previous comments that the area has not been sufficiently studied. This SEIS uses the best available information to identify general potential impacts that could result from oil and gas exploration, development, and production. Any specific project proposals may require additional site-specific baseline studies on surface and sub-surface hydrologic conditions, climate change impacts, and fish and fish habitat surveys, as a part of their project-specific NEPA analysis.
Brisson	Brook	Trustees for Alaska	80131	232	The removal and fill of aquatic habitats will have a variety of direct impacts beyond the described footprint of the development infrastructure (i.e., gravel roads, gravel pads, airstrips, pipelines, culverts, bridges, docks, barge landing zones, gravel mines) which may develop differentially over time (i.e., days-years) causing numerous short and long-term impacts (e.g., Walker et al. 1987; Raynolds et al. 2014). Classification of aquatic habitat based on climate, physiography, geology, and fluvial morphology using accurate spatially explicit data (e.g., Benda et al. 2015) is essential prior to understanding impacts, which is lacking in the draft SEIS. A complete understanding of the surficial hydrology through long-term data and hydrologic models is also necessary to understand direct impacts. Alteration of aquatic habitats, which rest above permafrost, will alter surficial and subsurface flow paths directly impacting streamflow, stream temperature and water quality (Liljedahl et al 2016; Walker et al. 2019). Changes in water quantity and quality will also have numerous negative direct, indirect and cumulative impacts on the amount of physical habitat in areas as well as the quality of habitat used for foraging, reproduction, and survival, which will cause impacts to aquatic species behavior, physiology, and fitness.	This SEIS uses the best available information to identify general potential impacts that could result from oil and gas exploration, development, and production. Any specific project proposals may require additional site-specific baseline studies, including fish and fish habitat surveys, as a part of their project-specific NEPA analysis. Section 3.3.2, Fish and Aquatic Species - Direct Habitat Loss or Alteration, acknowledges that aquatic habitats are not expected to recover naturally and would require treatments to recover some ecological functions, and impacts may exist for the long term, even after rehabilitation efforts are completed.
Brisson	Brook	Trustees for Alaska	80131	233	The assessment of the direct and indirect impacts from industrial road crossings within the draft SEIS does not fully or accurately describe the impacts. Roads, bridges, and culverts have been shown to alter surface hydrology through channelization and redistributing of flow to stream crossings (Wemple et al., 1996), which can destroy or create wetlands, reduce fish movement (Warren and Pardew, 1998; Trombulak et al. 2000) and access to seasonally important habitat (Brown and Hartman, 1988). Additionally, previous research has shown that vehicle traffic has the potential to introduce heavy metals, ozone, and nutrients to roadside aquatic environments (Leharne et al. 1992; Schuler and Relyea 2018), which has the potential be transported throughout aquatic systems (Gjessing et al.1984; Schuler and Relyea 2018) to harm aquatic biota. Industrial road crossings will also affect the instream physicochemical habitat of river and streams. Due to upstream constriction effects, culverted streams are associated with higher percent fines, water temperature, water depth, and turbidity as well as lower dissolved oxygen and water velocity (MacPherson et al. 2012; Maitland et al. 2016), and sediment impacts will extend hundreds of meters downstream for each culvert (Lachance et al. 2008). Road culverts also have the potential to block or restrict fish passage at critical periods (see Morris and Winters, 2008 for Alaska specific example), which could add additional stress on populations during periods when resources are limited (Furniss et al., 1991; Warren and Pardew, 1998). Bridge crossings also contribute to increased sediment inputs from erosion at exposed road crossings, while over time stabilization can occur, storm or flood events (common in the Coastal Plain) can continually reactivate erosional processes (Maitland et al. 2016). Changes in aquatic habitat quality can directly and adversely impact fish and aquatic species and by increasing instream sediment (suspended and deposited) will likely impact Arctic fish species in the Coastal Plain, over different time periods (days-years) by reducing embryo survival, altering feeding behavior, and changing species abundance and richness (Chapman et al. 2014). The indirect impacts of road crossing in the Coastal Plain will likely include mortality, reduce fitness, changes in population abundance in impacted areas and may also impact population genetic and life-history diversity over the long term.	Additional references were added to this section and text was revised for clarity where appropriate. That said, the potential effects from waterway crossing structures (e.g., culverts, bridges) are described in Section 3.2.10, Water Resources - Impacts Common to All Action Alternatives, and Section 3.3.2, Fish and Aquatic Species - Indirect Habitat Alteration: Flow Alteration and Fish Passage. Additionally, EIS Section 2.3.5, Lease Stipulations and Required Operating Procedures, describes measures that would be required for exploration and development activity that are intended to mitigate impacts to the aquatic environment (e.g., ROPs 3, 20, 22). No development is currently proposed, this EIS would not authorize ground-disturbing activity. Any proposed project would be subject to approval, require a Stormwater Prevention Plan, and would be regulated by state and federal agencies.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	234	The assessment of the direct and indirect impacts from water extraction and redistribution on fish and aquatic species within Section 3.3.2 of the draft SEIS is inadequate to evaluate direct and indirect impacts of proposed development. In order to quantify the potential impacts of industrial water consumption (e.g., ice roads, drilling, camp facilities) and redistribution on fish and aquatic species, several analyses need to be completed for the Coastal Plain including; a specific lake network classification following methods in Jones et al. (2017), a physically-based 3D hydrology model to model water movement, survey of aquatic habitat in a systematic manner in combination with seamless digital layers to develop hierarchical habitat information (see CHaMP 2015). Finally systematic fish surveys need to be conducted across the Coastal Plain in combination with fish habitat models to quantify fish habitat at the species level. These analyses must, at a minimum, be completed prior to any project-level approvals. Industrial water use in winter and summer will extract water and ice from lakes, rivers, springs, and groundwater, which is hydrologically connected to a variety features, and has the potential to reduce habitat and redistribute water in patterns that will negatively impact fish and aquatic species. For example, removing water or ice from lakes and rivers during winter has the potential to impact fish and aquatic species by reducing dissolved oxygen, decreasing overwintering and littoral habitat, fracturing migration corridors, freezing sediments in littoral areas, which may kill fish eggs and invertebrates or cause physiological stress, which can affect growth, reproduction, or survival (Cott et al. 2008; Cott et al. 2015). The draft SEIS estimates that a tremendous amount of water (420,000 to 1,900,000 gallons) would be required to complete each well and another 2,000,000 gallons per day would be required to maintain each well during production.(684) Extraction of water in this quantity from industry preferred water sources on the Coastal Plain (groundwater aquifers, lakes, and rivers) is likely to cause major changes in groundwater and surficial flow paths affecting water quantity across all habitats hydrologically connected. Subsurface groundwater movement in the Coastal Plain is largely unknown and likely complex due to permafrost (see Kane et al. 2013; Walvoord and Kurylk 2016). If current groundwater hydrological connectivity is altered by water extraction there could be severe impacts to biologically important aquatic landscape features fed by groundwater (i.e., karst springs, lakes or rivers). The biological impacts and consequences of altering streamflow or water quantity for fish (particularly Dolly Varden and Arctic Grayling) and aquatic species need to be considered in greater detail within the draft SEIS and as part of any project-level approvals. (684) See below for a critique of ROPs 8 and 9, which do not adequately avoid or mitigate foreseeable impacts associated with water withdrawals.	Many criticisms are provided in this comment, and in order to be addressed adequately, would require project specific impacts to the area. As no development is currently proposed, this EIS would not authorize ground-disturbing activity. However, any specific project proposals may require additional site-specific baseline studies, including hydrological and water resource surveys, as a part of their project-specific NEPA analysis. The SEIS describes potential impacts to fish and aquatic habitat in Section 3.3.2, Fish and Aquatic Species - Indirect habitat Alteration: Water Quantity.
Brisson	Brook	Trustees for Alaska	80131	235	The assessment of direct and indirect impacts of habitat alteration within Section 3.3.2 of the draft SEIS is inadequate to evaluate impacts of proposed development on fish and aquatic species. Limited information exists on streamflow regimes and is inadequate for quantifying direct and indirect impacts to fish and aquatic species. The natural flow regime is a critical element that maintains biodiversity and ecosystem integrity in lotic systems and altering the historical flow regime will have negative impacts to aquatic species in rivers and streams (Poff et al. 1997). New data on seasonal streamflow regimes that quantifies critical components of flow regimes (i.e., magnitude, frequency, duration, timing, rate of change) needs to be collected and methods should be used to quantify streamflow metrics (see Olden and Poff 2003). Thermal regimes are another critical element that regulates metabolism in fish and invertebrates, influencing growth, phenology, and survival, which influences food webs and aquatic communities (Caissie 2006; Webb et al. 2008; Steel et al. 2017). No information is provided on stream thermal regimes, which is essential and necessary baseline information to quantify impacts of habitat alteration on aquatic species. Development will likely impact thermal regimes by reducing the quantity of water in certain habitats and the impacts have not been considered in the draft SEIS. Last, biogeochemical processes in aquatic ecosystems influence nutrient availability, biofilms, invertebrate abundance, which in turn influence Arctic food webs (Huryn et al. 2005). Habitat alteration from proposed development in the Coastal Plain (roads, culverts, bridges, infrastructure pads etc.) is likely to increase permafrost thaw, thermokarsting, erosion into lentic and lotic environments, and alter surficial and groundwater flow paths (Walker et al. 1987; Raynolds et al. 2014; Liljedahl et al. 2016; Walker et al. 2019) which, through changes in the habitat is likely to have negative impacts on the behavioral ecology (i.e., foraging, antipredation, reproduction, survival) of Arctic fish as well as the distribution and abundance of aquatic invertebrates (Cocchiglia et al. 2012).	Additional text was added to address specific thermal needs for salmonids and other species known to occur in the leasing area. This SEIS uses the best available information to identify general potential impacts that could result from oil and gas exploration, development, and production. Any specific project proposals may require additional site-specific baseline studies, including hydrological and water resource surveys, as a part of their project-specific NEPA analysis.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	356	Freshwater, estuarine, and nearshore marine waters of the CP contain numerous Arctic fish species (17-21 estimated species; U.S. Fish and Wildlife Service 2015), but limited information exists for most species. The two most abundant anadromous fish species, Dolly Varden (<i>Salvelinus malma</i>) and Arctic Cisco (<i>Coregonus autumnalis</i> ; Craig 1984) extensively utilized areas within the Coastal Plain. Arctic Cisco has not been documented using estuary and delta habitat within the Coastal Plain, but mainly use nearshore habitat within the Beaufort Seas as important foraging habitat between their spawning migration to the Mackenzie River and overwintering location in the Colville River Delta (Reist and Bond 1988; Brown 2008). Dolly Varden have two major life forms which include freshwater resident (dwarf, lake, and spring forms) and anadromous forms that are present in freshwater, nearshore and marine habitats (Ward and Craig 1974; Brown et al. 2014; Brown et al. 2019). While extensive information exists on adult Dolly Varden spawning and overwintering areas, little research has been conducted on the diversity of life history types or rearing habitat utilized. Both Chum salmon (<i>Oncorhynchus keta</i>) and Pink Salmon (<i>O. gorbuscha</i>) have historically been documented to be present within the Canning and Staines rivers as well as Coastal Plain nearshore marine areas (Craig et al 1984; Craig and Haldorson 1985), but little information exists on populations along with spawning, rearing, and foraging habitat used. Arctic Graying are likely another abundant fish species in the Coastal Plain. Arctic Grayling are typically observed in lotic and lentic freshwater environments, they also can tolerate a range of salinities and have been caught estuarine and nearshore habitats (West 1992; Moulton and Fawcett 1984; Craig et al. 1985) with salinity levels up to ca. 18 ppt (Moulton and Fawcett 1984). In other nearby watersheds, Arctic Grayling have been shown to migrate seasonally between a diversity of habitats such as small headwater streams, beaded streams (Heim et al. 2016), main channel rivers, nearshore lagoons to meet life history functions (i.e., spawning, foraging, refuge, and dispersal) to maximize growth and survival. Other fishes within the Coastal Plain freshwater habitat include Lake Trout (<i>Salvelinus namaycush</i>), Burbot (<i>Lota lota</i>), Ninespine Stickleback (<i>Pungitius pungitius</i>), and Slimy Sculpin (<i>Cottus cognatus</i> ; U.S. Fish and Wildlife Service 2015), and while not much is known about the distribution of these species it is likely that they inhabit a variety of habitat types extensively throughout the Coastal Plain.	This SEIS uses the best available information to identify general potential impacts that could result from oil and gas exploration, development, and production. SEIS Section B.3.2, Fish and Aquatic Species - Fish Species, describes fish species that have been documented in the Program Area. Any specific project proposals may require additional site-specific baseline studies, including fish and fish habitat surveys, as a part of their project-specific NEPA analysis.
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	15	Page 3-131, Section 3.3.2, Fish and Aquatic Species, Rivers, Streams, and Springs: "The program area is underlain by continuous permafrost, which limits infiltration of surface water, resulting in a high ratio of stored water at the surface, rather than in the ground (USFWS 2015a). Data on these water resources are limited, with few dataSEIS going back more than 5 years." Comment: Hydrographic studies should be conducted in the 1002 lands prior to leasing. Perennial springs are rare in this vast program area and they are critical to overwintering fish populations which are important to subsistence users and other wildlife. At the same time these springs are the most likely to be used by industry because of the scarcity of fresh water sources in the winter season. The Agencies should take care to avoid pollution of these important springs/aufeis.	The potential impacts to fish and aquatic habitat from water withdrawals are described in Section 3.3.2, Fish and Aquatic Species - Indirect Habitat Alternation: Water Quantity. Section 3.2.10, Water Resources - Water Withdrawals, provides a description of how water withdrawals in the Program Area may affect local hydrology. Additionally, restrictions intended to mitigate impacts from water withdrawals are described in Section 2.3.5, Lease Stipulations and Required Operating Procedures. Any additional future project-specific activities impacting these resources will be addressed in the NEPA analysis conducted for those activities. These activities may require additional detailed, site-specific fish and aquatic resource surveys.
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	16	Page 3-149, Fish and Aquatic Species, 3rd paragraph: "Warmer water temperatures may also increase biological productivity (Beaver et al. 2019) and fish growth (Mallet et al. 1999; Railsback and Rose 1999); however, for each fish species there exists an upper limit of temperature tolerance before stress and mortality begin to appear from excessive energetic demands (Magnuson et al. 1979; Tonn 1990)." Comment: Recommend adding to the last reference: - Bilyk, K.T., Sformo, T.L. Varying heat tolerance among Arctic nearshore fishes. 2021. Polar Biology https://doi.org/10.1007/s00300-021-02815-6	Comment noted. This reference has been added to the section as advised.
Jorgenson	Karen	-	80272	1	The discussion of interactions between topics in different sections is extremely limited. The interpretation of the influences of changes to water quality on aquatic organisms is minimally covered starting on page 3-138. This discussion should include how bottom up effects alter fish viability. For example, scouring from increased sediment reduces biofilms available to feed macroinvertebrates, which in turn reduces the food supply for fishes. There is no discussion of food web alterations. Relevant literature includes Kendrick et al. 2018 and Creed et al. 2018. An ecosystem perspective is necessary to properly assess effects.	A brief discussion of potential food web alterations has been added for additional clarity.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Jorgenson	Karen	-	80272	5	The discussion of contaminants and spills is disjointed and misleading. On page 3-142 it is stated that "spills would never reach the tundra and have no impacts on fish" and then is followed with a discussion of how spills could "could pose substantial risks to fish and their habitats" (fish should also be plural here to represent multiple species). The first statement is clearly not true. Additionally, the technology to "keep oil from flowing downstream" does not exist. If this has been successfully accomplished before it should be explained and cited. Examples of catastrophic impacts from previous spills should be given in this section. It is minimally addressed that salt water can be toxic to freshwater organisms. Expand on page 3-139 with relevant citations.	The comment does not include the first portion of the sentence quoted, which in its entirety is: "Most spills would be fewer than 100 gallons and would be restricted to ice or gravel roads and pads; spills would never reach the tundra and have no impacts on fish." This sentence has been updated for clarity to: "Most spills would be fewer than 100 gallons and would be restricted to ice or gravel roads and pads, where they would be cleaned up prior to contaminants reaching adjacent tundra or waterways." Spill containment booms, which would be pre-deployed during the summer open-water season, are intended to and frequently do reduce the volume of oil that escapes the containment area. However, the SEIS does note that if oil reaches waterways, fish would be vulnerable to impacts. A description of potential catastrophic spill impacts to fish and aquatic resources was added to this section for clarity. Fishes in the plural were added where appropriate.
Jorgenson	Karen	-	80272	8	It should not be stated on page 3-130 that "freshwater habitat is limited in the program area" or on page 3-133 that "surface freshwaters are a limited resource throughout the program area". Freshwater habitat is not limited to lakes and rivers, but also includes wetlands, surface pools, suprapermafrost water, etc. A large portion of the costal plane is aquatic habitat. The wetland sections of this document should discuss impacts to water quality, not just plants.	Text in Section B.3.2, Fish and Aquatic Species, has been revised to: "As described in Section B.2.10, Water Resources, freshwater fish habitat (lakes and ponds) is limited in the program area..." Draft SEIS Section B.3.1, Wetlands and Vegetation - Wetland Functions and Values, provides a description of wetland functions and values, which includes water quality. Additionally, the function of aquatic resources, including flooded wetlands, is discussed in Section B.2.10, Water Resources.
Jorgenson	Karen	-	80272	9	Microbes play a huge role in processing carbon and nutrients but are only mentioned once in the entire document (page 3-133). Microbial biofilms are affected by many variables discussed in this document, such as water temperature and turbidity. Similarly, algae are only mentioned once, also in relation to the marine environment (page 3-137).	The Fish and Aquatic Species section has been updated to include discussion of potential impacts to biofilms from future oil and gas development and its subsequent potential to impact fish and invertebrate communities (see Section 3.3.2).

U.3.19 Geology and Minerals

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Bigham	Angela	-	79150	5	Comments on Page 3-59 (1st and 2nd paragraph). - The 2007 study is old and was disproven in 2018 when there were several earthquakes in the area. Cite the following for a more up to date reference on seismic activity in the coastal plain of the Arctic Refuge "Burkart, G. A., C. Flanagan, M. A. Geist. 2022. Water Resources Inventory and Assessment: Arctic National Wildlife Refuge, Alaska. U.S. Department of the Interior, U.S. Fish and Wildlife Service. 253". See the tectonic activity section 4.2.1 - It is incorrect to say "Historically the level of earthquake activity in the Coastal Plain has been low". This suggests that all dates in the past /historically earthquake activity has been low and this is not correct because earthquake activity has only been monitored in the last century and in recent history (2018) earthquake activity was high in the coastal plain. Please remove the sentence or change it to "prior to 2018 the historical record of earthquake activity in the coastal plane was low." It should also be noted that the coastal plain of the Arctic Refuge is far more seismically active than areas to the west. See figures and references in comment letter - Figure 1. 2018 earthquakes, including the largest earthquake ever recorded on the North Slope of Alaska and a subsequent swarm of earthquake activity in the Sadlerochit Mountain. Black stars represent the 6.4 magnitude epicenter of the initial quake in the Sadlerochit Mountains and the 6.0 magnitude aftershock along the Hulahula River. Figure from Alaska Earthquake Center, 2020b. - Alaska Earthquake Center. 2020a. earthquake.alaska.edu/event/0075f8igy0/fault. Accessed 18 Dec 2020. - 2020b. https://earthquake.alaska.edu/event/018aap2cqu/detail Accessed 18 Dec 2020. - 2020c. earthquake.alaska.edu/event/019befzzu6/detail. Accessed 18 Dec 2020. * Figure 2. Earthquakes in the Arctic Refuge and coastal plain to the west. Note the paucity of seismic activity across the entire coastal plain to the west of the Refuge. The blue circle represents a 6.4 magnitude earthquake in the Sadlerochit Mountains just 10 miles south of the 1002 Area on 12 August 2018. A 6.0 magnitude aftershock was recorded along the Hulahula River just upstream from the 1002 Area on the same day. Note that during 2018 there were only 134 earthquakes with a magnitude of 6.0 or greater worldwide. Data from USGS Earthquake Catalog, accessed 11/10/2022.	The discussion in the Draft SEIS includes the 2018 study regarding recent earthquakes within the area. The text has been updated to be more clear on historical earthquake activity limiting it to recorded historical timeline, not a geologic history.

U.3.20 GIS Data and Analysis

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	301	There appear to be several typos in the materials for Alternative D that should be corrected. The description of impacts specific to Alternative D gives contradictory acreages open to surface occupancy. The text first states that "only 39,500 acres are available for leasing and allow surface occupancy" but later contrast the estimated PCH calving displacement area with "the 46,700 acres of the program area remaining open to surface occupancy."(827) Summing the values in Table 2-1 indicates 39,500 acres are available for surface occupancy.(828) This suggests the second figure quoted in the text is an error and should be corrected to present an accurate picture of potential impacts under Alternative D. Similarly, the text references Lease Stipulation 9 as limiting infrastructure and imposing timing limitations for Alternative D.(829) However, Lease Stipulation 9 no longer applies to Alternative D. Instead, the protections for post-calving habitat have been consolidated into Lease Stipulation 6. Again, this should be updated for clarity. (827) DSEIS at 3-218. (828) DSEIS at 2-2. (829) DSEIS at 3-219.	The SEIS has been reviewed and revised to ensure consistency in acreages and references to lease stipulations and ROPs.
Brisson	Brook	Trustees for Alaska	80131	275	Updates are also needed for Map 3-39, which contains some symbols on maps that do not appear in the legend, like the dashed red boundary in the middle top map or the hashed purple area in that same map.(755) Finally, the PCH projected calving and post-calving habitat areas are an important part of the newly proposed requirements and standards under Alternative D for Lease Stipulation 6 but they are not clearly mapped anywhere in the draft SEIS. We request that a map be added for these, shown alongside the historic data for percent of years that caribou are present (e.g., as in Map 3-39) to give greater clarity on where these predicted boundaries lie and how they affect the resulting provisions under Alternative D. (755) DSEIS Map 3-39.	The BLM and USFWS updated the legend for the Seasonal Distribution of the Porcupine Caribou Herd, Alternatives B, C, and D map. The map Modeled Resource Use of Porcupine Caribou shows the projected calving and post-calving habitat areas and the map has been clarified to show this.
Brisson	Brook	Trustees for Alaska	80131	330	Maps 2-5 & 2-6 show areas subject to NSO and other stipulations for Alternative D.(917) Map 3-40 shows polar bear critical habitat and maternal denning habitat on the Coastal Plain.(918) But all of BLM and FWS's maps conspicuously omit the previously-identified polar bear denning hotspots, and none of the maps overlap polar bear denning habitat with areas which are open to leasing and subject to polar bear-specific stipulations and ROPs. This is critical information for the public to understand how those mitigation measures correspond to locations where polar bears are denning onshore and how protective they may or may not be. BLM and FWS should include these maps in the final SEIS.	The BLM and USFWS updated the lease stipulation 5, polar bears, in Alternative D2 using the best available data. The Draft SEIS includes calculations of polar bear habitat and lease stipulations.
Brisson	Brook	Trustees for Alaska	80131	446	Groups encourage BLM and FWS to include a map of the priority recreation areas within the Coastal Plain.(1216) The location of high-use recreation areas and the oil and gas activities that may be allowed under the various alternatives on or near those areas are a critical piece of information to understand the impacts of the oil and gas program on recreation. Indeed, the agencies recognize that "impacts on recreation is directly related to the proximity and overlap of priority recreation areas within areas available for leasing"(1217) A map showing the high-use recreation areas with the alternatives proposed will help the public and agencies better understand the impacts to recreation. (1216) DSEIS at 3-378 to 3-379. (1217) DSEIS at 3-380.	The BLM and USFWS do not have high-use recreation areas mapped within the Coastal Plain. See discussion in Section 3.4.6, Recreation.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	6	Rigorous procedures to calculate acreage utilized and to allocate maximum acreage available.	The BLM and USFWS agree that rigorous procedures should be and have been used to calculate acres. The Draft SEIS GIS data were published on the BLM NEPA register.
Adoko	Ashlee	State Of Alaska	80221	56	Document Reference Appendix A, Map 3-33 Reviewer MW Agency DFG Resource/Topic Prediction of future distributions of PCH Comment: This map does not appear to be referenced anywhere in the DSEIS text.	The BLM and USFWS added a reference to this map in Chapter 3.
Jorgenson	Janet	-	80336	10	MAPS Maps of the 3 alternatives have some odd holes and gaps. It looks like they weren't well thought out. For example the yellow areas on the map of Alternative D. Topographical map 3-1. This map should be redone to show the topography better. The color range is from high to low elevation, Brooks Range to coast, but mapped area covers only medium to low, so it doesn't clearly show where higher elevations are inside 1002 Area. Upland areas in the 1002 Area reach greater than 1000 ft elevation but the color is pale green, little different from elevation zero at the coast.	The alternatives maps of summary stipulations use a hierarchy: closed, then NSO, then CSU, then open only to standard stipulations. This is because closed is the most restrictive and open only to standard stipulations is the least restrictive. The hierarchy results in some odd shaped areas. Map 3-1, Topography, does not indicate exact elevations; instead it shows relative elevations from high to low. The mountains in the wilderness south of the 1002 are much higher than the Coastal Plain and therefore are colored different.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Miller	Pamela A	Arctic Audubon Society	80339	9	Basic landscape and terrain features relevant to bird habitat use are presented poorly. For example, Map 3-1 Topography utterly obscures the unique topographic features of the Coastal Plain and its context within the Arctic Refuge, as also does Map 3-16 Terrestrial Ecoregions. We suggest a much larger fold-out map is necessary, at least 1:250,000 scale to present the rivers, streams, lakes, river deltas, shorelines, barrier islands and hilly terrain which is much more diverse and different than the flatter and very expansive Arctic Coastal Plain to the west where the existing Prudhoe Bay and other oil field development is taking place.	The BLM and USFWS published the GIS data for the SEIS maps so that anyone can access the GIS data in addition to the 11x17 maps in the SEIS.
Miller	Pamela A	Arctic Audubon Society	80339	10	The difficult and necessary step of integrating information from various maps such as vegetation (Map 3-17), wetlands (Map 3-18), Hydrology (Map 3-13), Deep Lake Habitat (Map 3-21 - currently focused on ice road consumption) and bird use information is critical; a variety of maps showing bird habitat use at different scales is warranted. This is necessary for basic public understanding of the features which affect bird and other wildlife habitat and how oil and gas infrastructure and activities would affect the various species. Maps of the overlap of habitat types with bird use would be far more meaningful, while the tables as described herein do not readily convey this integration of information. Virtually all of the information contained in Appendix J, Tables J-13 to 20 should be translated onto maps for greater meaning	The BLM and USFWS published the GIS data for the SEIS maps so that anyone can access the GIS data in addition to the 11x17 maps in the SEIS.
Lampe	Charles	Kaktovik Iñupiat Corporation	80350	6	In fact, we are asking that any new maps of the 1002 Area be removed because they have not been vetted by our community - we have not been allowed to provide feedback to any of these maps - which again would provide the apparent precious 'indigenous knowledge' that your agencies are so desperate to receive. I will not be apologetic over this - it appears that you are only including indigenous knowledge that fits the narrative of this administration. As you know we do not have the resources to hire outside consultants and because we want exploration to move forward, we don't have the apparent 'pro bono' legal team that the Gwich'in have. We have raised this as an issue but obviously have been overrun. So, you need to tell us how you are verifying all this new information which does not align with the "alleged legal deficiencies". These maps are not about gravel.	Map 3.44 has been removed from the SEIS.
Rexford, Sr.	Edward	Native Village of Kaktovik	80353	8	NVK requests that Map 3.33, "Modeled Resource Use of the Porcupine Caribou Herd (PCH)" is eliminated. As a tribal organization, you have a responsibility - as part of our relationship with the federal government - to present any new information or data within the document. We have not received any information on the model that was developed for this map and we do not know how the model was developed or what data was used and built into the model to derive the series of maps as depicted for future PCH calving and post-calving areas. This model and the underlying data need to be presented and vetted by our community before this is released under this SEIS. There is no discussion of Map 3-33 anywhere in the SEIS, there are no references to the model or a paper on the model in the bibliography. As such, the model cannot be verified as a legitimate model. This would have been a great topic to discuss in a G2G or CA meeting but was never brought forward.	The sources on DEIS Map 3.33, Modeled Resource Use of the Porcupine Caribou Herd (Porcupine Caribou Herd), of ADFG GIS 2019, and Environment Yukon GIS 2019 were incorrect and so they were removed. The source on this map was corrected to Severson et. al 2021.. The Severson GIS data and corresponding paper are public ally available. The BLM and USFWS added discussion of this map to the Final EIS. USGS GIS. 2022. Predicted Calving and Post-calving Season Resource Use of the Porcupine Caribou Herd During 2012–2018 With Future Projections for the 2030s, 2040s, and 2050s. URL: https://alaska.usgs.gov/products/data.php?dataid=405. Severson, J. P., Johnson, H. E., Arthur, S. M., Leacock, W. and Sutor, M. J. 2021. Predicted Calving and Post-calving Season Resource Use of the Porcupine Caribou Herd During 2012–2018 With Future Projections for the 2030s, 2040s, and 2050s. URL: https://alaska.usgs.gov/products/data.php?dataid=405.

U.3.21 Government-to-Government Consultation

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Zurcher	Naomi	-	49159	1	The current draft SEIS has also not goiven adequate weight to the Us / Canada treaty that was signed in 1987 FOR THE SOLE PURPOSE OF PROTECTING THE PORCUPINE CARIBOU HERD'S CALVING GROUNDS FOR ALL FUTURE GENERATIONS. Moving forward with any extraction development will be in violation of this treaty as all such development will cause irreparable damage to the calving environment.	The DOI has conducted consultation with the International Porcupine Caribou Board (IPCB) and with Canadian officials.
Not Provided	Not Provided	-	53625	2	Furthermore, BLM must comply with international treaty obligations between the United States and Canada (the 1987 Porcupine Caribou Herd Conservation Agreement) regarding conservation of the Porcupine Caribou Herd and its habitat.	The DOI has conducted consultation with the International Porcupine Caribou Board (IPCB) and with Canadian officials.
Russell	Donna	-	62761	2	Honor the treaties and concerns of Native Americans/First Nations everywhere, but especially within resource proposed extraction areas.	See Table 4-2. Government-to-government consultations were held with multiple tribal governments in several instances at the locations requested. The DOI has conducted consultation with the International Porcupine Caribou Board (IPCB) and with Canadian officials.
Emmert	Amy Emmert	American Petroleum Institute	68624	3	Additionally, we echo with seriousness the consultation concerns with the Alaskan boroughs and native communities relayed by the Alaska Congressional Delegation from their constituents. We note with concern that these procedural inconstancies in stakeholder outreach have occurred in both the ANWR and the contemporaneous NPR-A comment period, and we encourage the BLM to rectify them in both matters.	See Table 4-2. Government-to-government consultations were held with multiple tribal governments in several instances at the locations requested.
Resource Management Coordinator	IGC	Inuvialuit Game Council	78809	1	I am writing on behalf of the Inuvialuit Game Council (IGC), an Inuvialuit body that represents the collective Inuvialuit interests in wildlife and all matters pertaining to the management of wildlife and the environment throughout the Inuvialuit Settlement Region. We wish to call upon the Department of the Interior to immediately initiate consultation with our Council regarding the Coastal Plain Oil and Gas Leasing Program's Draft Supplemental Environmental Impact Statement (SEIS) that is nearing the end of comment period. With Inuvialuit being one of the primary users of the Porcupine Caribou Herd (PCH) and the area immediately adjacent to the 10-02 lands, we were pleased to hear of the cancellation of the remaining active leases within the Arctic National Wildlife Refuge; however, it is our determination that the draft SEIS is still severely deficient in many regards. Our submission will outline these deficiencies. As a whole, the DSEIS fails to fulfil the obligations of the United States as matter of international law, including the duty to consult.	The DOI/BLM have conducted Native consultation with all substantially affected communities, in accordance with DOI's Tribal and ANCSA Corporation consultation policies. The EIS gives due consideration to the IPCA, and DOI has conducted consultation with the IPCB and with Canadian officials.
Resource Management Coordinator	IGC	Inuvialuit Game Council	78809	2	For example, under the Agreement between the Government of Canada and the Government of the United States on the Conservation of the Porcupine Caribou Herd (1987), to which the U.S. is a signatory, the duty to consult is presented in Article 3, as follows: a) Where an activity in one country is determined to be likely to cause significant long-term adverse impact on the Porcupine Caribou Herd or its habitat, the other Party will be notified and given an opportunity to consult prior to final decision. As we learned from Russell and Gunn (2019) during the original EIS process, the PCH is "vulnerable to even a small decrease in adult survival" (pp. 92). With the 1002 lands being within the PCH's calving grounds, the potential effects of the Leasing Program on the PCH, in addition to the local wetlands, migratory birds and denning polar bear, and the subsequent effects on Inuvialuit subsistence harvest and lifestyle, should make consultation with our people an utmost priority for your department at this time. The duty to consult with affected parties on the Canadian side was completely overlooked during the EIS process and has thus far been overlooked again during the SEIS process. From the NEPA register, we see ample public consultation across the state of Alaska, yet despite the undeniable effects that will be felt on the Canadian side from this development, not one meeting is scheduled in affected Canadian communities, and this despite it being referred to directly in the SEIS that "Canadian users accounted for 85 percent of the (PCH) harvest" (Vol. 1, Chap. 3, pp. 305). We formally request ahead of the final draft SEIS that you initiate the consultation process with the Inuvialuit and other affected parties in Canada, namely the Gwich'in Tribal Council, Vuntut Gwitchin Government, the First Nation of Na-cho Nyäk Dü'n and the Tr'ondëk Hwëch'in First Nation. It is within the collective interests and legal requirements of Canada and the U.S. to ensure the ongoing conservation of wildlife populations dependent upon the Coastal Plain and the preservation of constitutionally protected Inuvialuit subsistence rights, which are critical to the economic and cultural sustainability of the Inuvialuit people. We look forwarding to working together with our respective governments to ensure that the Coastal Plain is protected well into the future.	The DOI/BLM have conducted Native consultation with all substantially affected communities, in accordance with DOI's Tribal and ANCSA Corporation consultation policies. The EIS gives due consideration to the IPCA, and DOI has conducted consultation with the IPCB and with Canadian officials.
Raynolds	Martha	-	79238	4	• The 1987 Porcupine Caribou Herd Conservation Agreement is a treaty between the United States and Canada regarding conservation of the Porcupine Caribou Herd and its habitat: . Treaty obligations are mentioned in Table 1.2, including for Terrestrial Mammals, but there is no information on actions that meet those Treaty obligations, either in Section 3.3.4 Terrestrial Mammals or Chapter 4 – Collaboration and Coordination, which has only one sentence on the subject, “The DOI has consulted and exchanged information with the Canadian government for the development of the Leasing SEIS.”	The DOI has conducted consultation with the International Porcupine Caribou Board (IPCB) and with Canadian officials.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
McCulley	Alice	Tr'ondëk Hwëch'in	80073	11	We are deeply concerned that, once again, the BLM and USFWS failed to directly consult" with any Canadian PCH subsistence users, despite numerous requests from all Canadian parties. All Canadian subsistence users are self-governing First Nations or Inuvialuit. As primary order governments, we expect to be consulted directly and meaningfully on all matters that affect our rights, titles, and interests, particularly those issues that may affect subsistence harvest rights. The draft SEIS acknowledges Canadian Gwich'in and Inuvialuit but did not include Tr'ondek liwech'in or the First Nation of Nacho Nayak Dun (FNNND). This demonstrates a concerning lack of understanding of who the Canadian subsistence users are by the US government. Direct consultation with all affected Canadian First Nations and Inuvialuit will yield valuable information that can improve understanding of potential impacts of a herd decline to subsistence users. As Tr'ondek Hwech'in, we have direct experience with the implications and generational impacts of a significant herd decline based on our experience with the Fortymile Caribou Herd that we have experienced over the past century. To facilitate herd recovery using Trehude principles, we have made significant sacrifices that we are still feeling today. We are prepared to make similar sacrifices for Porcupine caribou if their population declines below critical thresholds outlined the Harvest Management Plan for the Porcupine Caribou Herd in Canada (2010).	The DOI/BLM have conducted Native consultation with all substantially affected communities, in accordance with DOI's Tribal and ANCSA Corporation consultation policies. The EIS gives due consideration to the IPCA, and DOI has conducted consultation with the IPCB and with Canadian officials.
Blake	Annie	-	80078	1	When the United States deals with a group of Indigenous people, no matter what side of the border they are on, all people should be included. Everyone is impacted, no matter what age they are or where they live. It is important to recognize that the Gwich'in Nation is spread across Alaska, the Yukon and the Northwest Territories. Not including our community in this conversation - not consulting us - is a clear sign of negligence. BLM is failing to ensure it has captured all voices from our nation.	The joint lead agencies have conducted Native consultation with all substantially affected communities, in accordance with DOI's Tribal and ANCSA Corporation consultation policies. The EIS gives due consideration to the IPCA, and DOI has conducted consultation with the IPCB and with Canadian officials.
Hubbard	Olivia	University of Colorado Boulder	80088	3	The indigenous Gwich'in, particularly the communities of Arctic Village and Venetie, of the Coastal Plain are known as the Caribou people since Caribou is their most important food source. Caribou hunting is done throughout the majority of the year, despite harsh conditions, hunting continues through the winter as caribou are available. Tribes start caribou hunting in the fall as the herds migrate south from the North Slope of the Arctic Refuge site through traditional hunting grounds.(2) They identify the Coastal Plain area as "Iizhik Gwats'an Gwandaii Goodlit," meaning "The Sacred Place Where Life Begins".(3) This area receives its sacred name because this is where the caribou of the PCH give birth to their calves, representing the tribe's connection to the PCH and their surrounding environment. Because of this, the Caribou people hold the Coastal Plain project development area sacred land, which has been evident through their opposition to development. The Gwich'in in the Arctic Village consider their land undocumented Traditional Cultural Properties (TCPs) under the NHPA, which would be affected under the Coastal Plain Oil and Gas Leasing Program. Under Section 106 of the NHPA, the "consultation process needs to fully consider these cultural resources".(4) (2) U.S. Department Of the Interior, Coastal Plain Oil and Gas Leasing Program, 2023, 3-298. (3) U.S. Department Of the Interior, Coastal Plain Oil and Gas Leasing Program, 2023, 3-282. (4) U.S. Department Of the Interior, Coastal Plain Oil and Gas Leasing Program, 2023, 3-286.	A Programmatic Agreement (PA) for the Section 106 process developed during the initial EIS effort is currently in place.
Hubbard	Olivia	University of Colorado Boulder	80088	5	We strongly urge the Bureau of Land Management (BLM) to adhere more rigorously to the Alaska National Interest Lands Conservation Act (ANSCA) and the National Historic Preservation Act (NHPA). Currently, the BLM appears to be taking shortcuts and exploiting loopholes in their project implementation without due consideration for the Arctic Refuge's cultural significance. Additionally, the BLM's actions demonstrate a concerning lack of acknowledgment regarding the swift impact of global climate change on the region, especially in terms of disrupted caribou migration patterns and the welfare of wildlife and endangered species. Furthermore, the BLM's apparent dismissal of the growing concerns and opposition to their oil and gas policies within the local community is a grave oversight. The dialogue surrounding this matter has failed to be inclusive, neglecting various stakeholders. To address these issues and promote a more equitable approach to the development and leasing of the sacred land in the Coastal Plain, we propose that the BLM actively involves local stakeholders, particularly indigenous tribes, in the decision-making process. This collaboration would ensure a fair and respectful development of the region while safeguarding its cultural and environmental significance.	The joint lead agencies have conducted Native consultation with all substantially affected communities, in accordance with DOI's Tribal and ANCSA Corporation consultation policies. The EIS gives due consideration to the IPCA, and DOI has conducted consultation with the IPCB and with Canadian officials.
Fox	Laurence	CPAWS Yukon	80122	6	Among the issues we found most concerning is the BLM's continued refusal to meaningfully consult with Tndigenous northern communities on both sides of the border, including but not limited to the Vuntut Gwitchin. Tt is clear to CPAWS Yukon that this kind of meaningful engagement and collaboration is fundamental to an inclusive and thorough SEIS, and without which, all other issues notwithstanding, we do not consider this SEIS complete.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.
Brisson	Brook	Trustees for Alaska	80131	77	We also strongly encourage the agencies to fully engage Canadian and First Nations governments in the SEIS process.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	394	In addition, the agencies have seemingly not engaged in consultation as required by the International Porcupine Caribou Herd Treaty.(1086) Failure to fully comply with this treaty presents a significant risk to Canadian subsistence users' nutritional, cultural, and other essential needs. This risk is particularly high for the Canadian Gwich'in, in northern Yukon and Northwest Territories, who rely heavily on the Porcupine Caribou Herd. (1086) See supra Section IV.E.1	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.
Brisson	Brook	Trustees for Alaska	80131	419	In addition, the agencies have not solicited necessary consultation as required by the International Porcupine Caribou Herd Treaty. Failure to fully comply with this treaty presents a significant risk to Canadian subsistence users' nutritional, cultural, and other essential needs. This risk is particularly high for the Canadian Gwich'in, in northern Yukon and Northwest Territories, who rely heavily on the Porcupine Caribou Herd. However, as explained in more detail above, it is currently unclear how or whether the United State has met its treaty obligations.(1154) (1154) See supra Section IV.E.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.
Brisson	Brook	Trustees for Alaska	80131	530	The agencies must ensure that the SEIS process provides meaningful consultation opportunities for all impacted Tribes and that the process is consistent with DOI's policy in support of co-stewardship. BLM and FWS have long been required to coordinate with affected Indian Tribes under Federal regulations and agency policies. The Council on Environmental Quality (CEQ), in interpreting NEPA, instructed federal agencies to involve tribes early in planning processes that are likely to affect tribal interests.(1445) This duty is further described in FWS's Tribal Consultation Handbook,(1446) BLM's NEPA Manual,(1447) and BLM's Land Use Planning Handbook.(1448) Both agencies have also adopted guidance on involving Tribes in planning processes. FWS's guidance commits the agency to soliciting and considering "traditional knowledge, and expertise of affected tribal governments in policies, agency actions, and determinations that have tribal implications."(1449) BLM's guidance is intended to "assure (1) that federally recognized tribal governments and Native American individuals, whose traditional uses of public land might be affected by a proposed BLM action, will have sufficient opportunity to contribute to the decision, and (2) that the decision maker will give tribal concerns proper consideration."(1450) (1445) 40 C.F.R. § 1501.7(a)(1). (1446) U.S. Fish and Wildlife Service, Tribal Consultation Handbook (2018), available at: https://www.fws.gov/sites/default/files/documents/Tribal%20Consultation%20Handbook.PDF . (1447) Bureau of Land Management, BLM Land Use Planning Manual (1601) (2000). (1448) Bureau of Land Management, BLM Land Use Planning Handbook (H-1601-1) (2005). (1449) Fish and Wildlife Service, Native American Policy (510 FW 1) (2016). (1450) Bureau of Land Management, General Procedural Guidance for Native American Consultation (H-8120-1) (2004) at I-1.	The joint lead agencies have conducted Native consultation with all substantially affected communities, in accordance with DOI's Tribal and ANCSA Corporation consultation policies. The EIS gives due consideration to the IPCA, and DOI has conducted consultation with the IPCB and with Canadian officials.
Heynen	Mitch	Government of Yukon	80159	10	In our scoping submission, we advised that experts from the Porcupine Caribou Technical Committee (PCTC), experts from the many agencies that are tasked with monitoring and completing research on the herd (including our own government's technical staff and the current Canadian co-chair) be engaged to ensure data was represented objectively and accurately to achieve the best outcome for PCH. Unfortunately, the PCTC was not engaged during the preparation of materials in the draft SEIS, including the numerous areas in the draft SEIS where the PCTC has been provided some regulatory oversight (e.g., within lease stipulations and ROPs) or has been relied upon to complete tasks. While we are supportive of the PCTC being engaged as experts in any program that overlays the herd's range, we to ensure that solutions are practical, necessary, and achievable. We are also cognizant of the quantity of work this could entail and its impact on other aspects of Porcupine caribou management, management of other species, and engagement with our communities and partners in Canada and Alaska, since these obligations impact the Government of Yukon's human resources. We request that prior to any regulatory obligation being placed upon the PCTC, direct engagement occurs with the Committee, and agreement is achieved with that body. We would also recommend that greater consideration be provided on the construction of required monitoring and research programs that would occur as a result of this work. For example, members of the PCTC have been conducting extensive research on the PCH calving, post-calving and summer ranges over the past several years using camera collars to describe activity budget, diet, and insect harassment. They have been undertaking extensive field sampling of vegetation nutrition and trace minerals across these ranges. These data could form the bedrock of any adaptive monitoring program going forward if the work is properly situated within the regulatory framework. Working with the PCTC will help ensure that occurs in an appropriate manner (e.g., use of a before and after, control impact study, and design of mitigation monitoring research). We continue to point out these major gaps.	recode to general consultation
Heynen	Mitch	Government of Yukon	80159	12	We recommend that your project team come to Canada and present your materials to the communities that will be primarily impacted by this development. Our government would be happy to work with you to facilitate meetings with communities in the Yukon to ensure their perspectives are heard and understood.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Heslep	Alison	-	80164	13	Canadian Indigenous governments and Indigenous organizations have yet to be engaged as implied under subsections 2(c), 2(d), and 3(b) of the IPCA. The GNWT recommends that BLM involve Canadian Indigenous governments and Indigenous organizations in formulating the final SEIS to enhance the integration of the traditional knowledge of Canadian Indigenous peoples in PCH conservation strategies and other future on-the-ground actions requiring BLM's approval, including potential exploration and development proposals. The GNWT recommends that community hearings be held in Fort McPherson and Aklavik, and for BLM to ensure that the Hunters and Trappers Committees, Renewable Resource Councils and the public are notified of such hearings. The BLM should also communicate and engage with the Gwich'in Tribal Council and the Inuvialuit Regional Corporation directly, as their citizens have a high level of cultural and subsistence dependence on the PCH.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.
Heslep	Alison	-	80164	21	#7 Ch/Sec/Sub-sec 3 Title General Comments (Transboundary Impacts) Comment(s) As it relates to transboundary impacts, it is not clear if BLM's responsibilities under the IPCA have been met. The Agreement States: 2 (a) To conserve the Caribou Herd and its Porcupine habitat through international cooperation and coordination so that the risk of irreversible damage or long-term adverse effects as a result of the use of caribou or their habitat is minimized. 2 (b) To ensure opportunities for customary and traditional uses of the Porcupine Caribou Herd by signatories of the PCMA. 3 (e) Activities requiring a Party's approval having a potentially significant impact on the conservation or use of the Porcupine Caribou Herd or its habitat may require mitigation. 3 (f). The Parties should avoid or minimize activities that would significantly disrupt migration or other important behavior patterns of the Porcupine Caribou Herd or that would otherwise lessen the ability of users of Porcupine Caribou to use the Herd. It is not clear that the Coastal Plain Leasing program has met the listed requirements if the minimum area required to be available for leasing under the 2017 Tax Cuts and Jobs Act is exceeded. Recommendation(s) The GNWT recommends that BLM engage with Canadian Indigenous governments and Indigenous organizations. The Gwich'in Tribal Council and the Inuvialuit Regional Corporation should be included in the engagements, as they may be highly impacted by the Coastal Plain Leasing Program.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.
Heslep	Alison	-	80164	32	#18 Ch/Sec/Sub-sec 4 Title Collaboration and Coordination Comment(s) Chapter 4 provides details on the public and agency outreach efforts of the BLM in developing the draft SEIS under the National Environmental Protection Act, but it does not address how the SEIS complies with international agreements, including those with Canada. For example, it is unclear how the SEIS meets clauses 2a-d, 3b, and 3e-g of the IPCA. Recommendation(s) The GNWT recommends the BLM list international agreements applicable to the leasing area and demonstrate how the SEIS fulfills the requirements of clauses 2a-d, 3b, and 3e-g of the IPCA.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Heslep	Alison	-	80164	33	#19 Ch/Sec/Sub-sec 4.3 Title Tribal Consultation Comment(s) The draft SEIS notes that Alaskan Indigenous communities may experience some mitigative effects on subsistence through greater access to jobs and compensation through the Leasing Project. However, the SEIS specifically notes in Sections 3.4.2, 3.4.3, 3.4.4, and 3.4.11 (along with 3.7) that Canadian communities may experience negative consequences to multiple socio-economic variables (both cultural and spiritual and subsistence/public health) and will not experience any benefits from the program. While the GNWT recognizes the inclusion of the impact of the Coastal Plain Leasing Project on Canadian Indigenous communities (particularly those most dependent on the PCH) and the inclusion of consultation with the Canadian federal government, the GNWT notes that engagements with Indigenous governments and Indigenous organizations have not occurred. Additionally, it is not clear whether BLM responsibilities related to engagement and communication with Canadian Indigenous people under IPCA have been met. The Agreement States: 2(c) To enable users of Porcupine Caribou to participate in the international coordination of the conservation of the Porcupine Caribou Herd (PCH) and its habitat. 2(d) To encourage cooperation and communication among governments, users of Porcupine Caribou, and others to achieve these objectives. 3(b) The Parties will ensure that the PCH, its habitat, and the interests of users of the Porcupine Caribou are given effective consideration in evaluating proposed activities within the range of the Herd. From 1992 to 1994, Canadian users, primarily the Inuvialuit, accounted for 85% of the PCH harvest, while Alaskan users accounted for the remaining 15%. Despite the high dependence of Canadian users, they have not been engaged to the same extent as Alaskan PCH users. During its scoping process, the BLM engaged in government-to-government consultation with five Alaskan Tribal Governments across six meetings. The BLM has also engaged with Alaska Native Claims Settlement Act (ANSCA) Corporations in two corporate consultation meetings with the Kaktovik In-upiat Corporation and has been involved with five Tribal Governments in Alaska throughout the development of the SEIS. However, one-on-one or direct communication/meetings with Indigenous governments and Indigenous organizations from Canada have not occurred, and neither was their feedback included in the EIS and draft SEIS. Thus, while Alaskan users have been able to participate and cooperate with the BLM in developing the Coastal Plain Leasing Program and were able to communicate their preferences and concerns to the BLM through direct consultation, it is not clear that the BLM has sufficiently communicated with Canadian users (the vast majority of PCH users). Nor has the BLM fostered the participation of Canadian Users in PCH conservation strategies during the development of the draft STES to the same extent as Alaskan users. This lack of engagement with Canadian users should be corrected. Recommendation(s) Given the potential for impacts on caribou and the resulting potential negative impacts on Canadian Indigenous People's culture, traditions, and therefore their sense of well-being, and the United States' responsibilities under the IPCA, the GNWT recommends the following: 1. The GNWT suggests that BLM engages with Canadian Indigenous governments and Indigenous organizations reliant on the PCH. Engagement of this kind would allow for the incorporation of traditional knowledge into the Lease Stipulations and ROPs from Indigenous knowledge holders. 2. As a further method of ensuring the interests of Canadian users of the PCH are given effective consideration, the GNWT recommends further communication and engagement with Canadian Indigenous governments and Indigenous organizations dependent on the PCH as follows: - The GNWT recommends that community hearings be held at a minimum in Fort McPherson and Aklavik and the BLM ensures that the Hunters and Trappers Committees, Renewable Resource Councils, and the public are notified of such meetings. - The BLM should also engage with the Gwich'in Tribal Council and the Inuvialuit Regional Corporation directly, as their citizens have a high level of cultural and subsistence dependence on the PCH. Virtual public meetings that are not specific to Canadian Indigenous governments and Indigenous organizations are not a substitute for engagement with Canadian subsistence harvesters. 3. The PCMB is largely made up of members of Canadian Indigenous communities. Additionally, the chairperson of the PCMB is a member of the IPCB. - Thus, consultation with the PCMB would be an excellent method for the BLM to ensure the interests of Canadian users of the PCH are given effective consideration under the IPCA. The GNWT recommends the BLM establish communication channels with these Indigenous governments and Indigenous organizations for discussions related to any upcoming on-site activities related to oil and gas leasing in the Coastal Plain that need the BLM's approval, including potential exploration and development initiatives that would necessitate a more detailed National Environmental Policy Act evaluation based on the site-specific proposal. The GNWT acknowledges and supports the stipulation that notes that the International PCH Technical Committee is to review and approve Adaptive Management Plans submitted under Lease Stipulation 6 and ROP 23 and 23.1 for Alternative D, which provides a further opportunity for consultation.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Heslep	Alison	-	80164	34	#20 Ch/Sec/Sub-sec 4.7 Title Coordination with the Canadian Government Comment(s) The current draft of SEIS currently has one sentence stating in its entirety: "The DOT [Department of Interior] has consulted and exchanged information with the Canadian government for the development of the Leasing SEIS." It is not clear from this sentence what segments of the Canadian government (Federal, GNWT, Yukon government) have been consulted. It is also unclear exactly what is meant by "consulted and exchanged information." Including information on the specifics of the BLM consultation with the Canadian government would prevent uncertainty as to the extent of consultation between the BLM and Canada for both the public, and other governments. Commenters would then be able to provide more effective input related to the level of consultation that has occurred between the BLM and the Canadian government. Recommendation(s) Section 4.7 needs to be brought up to the same standard as other sections of Chapter 4. If no government-to-government consultation or meetings have been initiated at this point, the final SEIS should make that clear. Given the draft SEIS states that the DOI has consulted and exchanged information with the Canadian government, the final SEIS should be explicit in describing the consultation and the topics covered in the information exchange. If the consultation and exchange of information was solely the commenting by Canadian governments on previous versions of the EIS, this should also be made clear. If consultation and information sharing have occurred with Canadian IGs and IOs, then these should be listed in another section (example: Section 4.8 Canadian Indigenous governments and Indigenous organizations).	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	3	Despite multiple requests, Tribal consultation requirements were not consistently included in the draft SEIS's Lease Stipulations and Required Operating Procedures.	The joint lead agencies have conducted Native consultation with all substantially affected communities, in accordance with DOI's Tribal and ANCSA Corporation consultation policies. The EIS gives due consideration to the IPCA, and DOI has conducted consultation with the IPCB and with Canadian officials.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	9	BLM's past efforts at government-to-government consultation during the agency's 2018-2020 NEPA process were legally deficient. Though the BLM conducted government-to-government consultations with the Tribes, the agency failed to meaningfully incorporate or respond to the Tribes' substantive concerns, reducing consultation to a mere box-checking exercise. BLM's wholly inadequate analysis of cultural and subsistence resources in the 2019 Final EIS and its ANILCA Section 810 evaluation is an illustrative example of its failure to adequately consider and address the Tribes' concerns. It is imperative that the BLM and USFWS remedy these legal deficiencies and meet its trust obligations to the Tribes affected by the proposed oil and gas leasing program. While the present locations of these Tribes may be geographically distant from the Coastal Plain, the cultural and subsistence connections the Tribes ascribe to the area remain intact. Indeed, as the ethnographer Ernest "Tiger" Burch demonstrates in the map in Figure 1 below, the traditional territory the Tribes stretches far beyond the present-day location of their villages.(40) (40) Ernest Burch, Jr., Boundaries and Borders in Early Contact North-Central Alaska, 35 ARCTIC ANTHROPOLOGY 129 at Figure 7 (1998). Figure 1: Map of Traditional Territories in Alaska's Arctic See page 9 of comment letter for Figure 1.	Government-to-government consultations were held with multiple Tribal governments at the locations requested (see SEIS Chapter 4). The cultural and subsistence resources analysis was updated as part of the Draft and Final SEIS. Additionally, the ANILCA Section 810 evaluation has been updated as part of the Final SEIS to include the consideration of waterfowl at the request of Tribes.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	38	The Tribes look forward to consulting with the agencies on how the agencies should: 1. accommodate access to and ceremonial use of any sacred sites identified by the Tribes, and 2. avoid adversely affecting the physical integrity of any identified sacred sites. The Tribes expect this consultation process to happen in accordance with the directives of EO 13007 and DOI's Department Manual, as well as pursuant to the NHPA Section 106 process. Moreover, as described in Section VI. below, the agencies must consider mitigation measures, such as additional Lease Stipulations and Required Operating Procedures, in its NEPA action alternatives to protect the any identified sacred sites. The final SEIS must disclose and analyze impacts to sacred sites as well as incorporate measures to avoid adverse impacts.	A Programmatic Agreement (PA) for the Section 106 process developed during the initial EIS effort is currently in place.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	6	The Agencies failed to engage in consultation with ASRC as required by law and by Department policy. Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), directs that all federal agencies "have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." (10) Congress then directed that federal agencies "consult with Alaska Native corporations on the same basis as Indian tribes under Executive Order No. 13175."(11) The Department's Policy on Consultation with Indian Tribes and Alaska Native Corporations states that, "[w]hen taking Departmental action that has a substantial and direct effect on ANCSA Corporations, DOI will initiate consultation with ANCSA Corporations."(12) Furthermore, Secretary's Order 3403 specifically acknowledges that "Tribal consultation and collaboration must be implemented as components of, or in addition to, Federal land management priorities and direction for recreation, range, timber, energy production, and other uses, and conservation of wilderness, refuges, watersheds, wildlife habitat, and other values."(13) (10) "If the Responsible Official for the lead bureau denies a request, or determines it is inappropriate to extend an invitation, he or she must state the reasons in the environmental impact statement." 43 C.F.R. § 46.225(c). (11) Pub. L. No. 108-447, 118 Stat. 2809, 3267 (2005) (amending Pub. L. No. 108-199, 118 Stat. 3, 452 (2005)). (12) 512 DM 4, Sec. 4.6. (13) Order No. 3403, Joint Secretarial Order on Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters 1 (Nov. 15, 2021). ASRC owns the subsurface estate underlying more than 92,000 acres of land owned by Kaktovik Iriupiat Corporation ("KIC"), the ANCSA village corporation for Kaktovik. These Native-owned lands are surrounded by the Coastal Plain of ANWR, which is the subject of this Draft SEIS. The success or failure of the Leasing Program will have a direct effect on the social, cultural, and economic interests of KIC and ASRC and our Illupiat shareholders. While the Agencies apparently consulted with KIC, they did not consult with ASRC as the owner of the subsurface estate. ASRC's subsurface estate underlying KIC's lands may include oil and gas resources, and the Leasing Program will impact its ability to access and develop those resources. Accessing these resources could help to provide the village of Kaktovik with a long-term sustainable supply of natural gas, such as is being utilized by the residents of Nuiqsut and Utqiagvik. The Leasing Program clearly will have a substantial and direct effect on the Alaska Native Corporations that own land adjacent to the Coastal Plain. ASRC should have been consulted. Though legally mandated, consultation is ultimately intended to improve federal decision making. Consultation is not an end unto itself. It is not a "check-the-box" exercise. And in Alaska, consultation with Alaska Native Corporations is imperative to recognize the unique status of Native land tenure in Alaska and the value of the unique and diverse systems of Native governance in our state. In this instance, the Agencies' failure to engage ASRC-as the ANCSA regional corporation whose lands and interests are directly affected by the action further demonstrates the mismatch between the Administration's purported desire to respect Native voices and its actions.	The joint lead agencies have conducted Native consultation with all substantially affected communities, in accordance with DOI's Tribal and ANCSA Corporation consultation policies.
McDavid	Brooke	Eastern Interior Subsistence Regional Advisory Council	80255	2	The Neet'sai Gwich'in of Arctic Village consider the Porcupine caribou calving grounds to be sacred lands and have been relying on these caribou for millennia to fulfill cultural and nutritional needs. Our Council requests that any development planning within the Coastal Plain Project Area directly involve the nearby communities, such as Arctic Village and Kaktovik, in a meaningful way from start to finish. Community representatives should have designated seats on any planning and monitoring teams to ensure that local and indigenous knowledge is included throughout the lifecycle of the proposed project, not just during the scoping and EIS processes.	The joint lead agencies have conducted Native consultation with all substantially affected communities, in accordance with DOI's Tribal and ANCSA Corporation consultation policies.
Lemke	Deana	Porcupine Caribou Management Board	80334	2	The PCMB raised two primary concerns which we will reiterate: Firstly, there has been a noted absence of direct and meaningful engagement with affected self-governing Parties in Canada. A significant portion of the Indigenous harvesters who rely on the PCH were ignored by the process simply because they live in the Canadian portion of its range. The PCH has one of the largest land migrations of any caribou herd in the world. To acknowledge the impacts on traditional users of the PCH, the core range of the herd must be included in its entirety, not limiting the scope of the potential impact to merely the program area and Indigenous communities in Alaska. While the SEIS admits that there will be potential impacts to "residents of Arctic Village, Venetie, and other communities beyond the program area that rely on the Porcupine Caribou Herd", Indigenous people with constitutional rights in Canada are not adequately recognized or considered since they reside in Canada. The traditional harvesting practices and cultural dependence on the PCH by the Indigenous members of the communities of Old Crow, Aklavik, and Fort McPherson predate the establishment of an international border. The SEIS even acknowledges that these communities "would be among the most likely to experience potential indirect impacts due to their proximity to and reliance on the Porcupine Caribou Herd." However, these communities were not consulted with or engaged directly during in the SEIS process. The PCMB implores BLM to engage directly with the affected self-governing First Nations and Inuvialuit Parties in Canada to demonstrate good will and adequately address this deficiency.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Kimbrell	Leila	Resource Development Council for Alaska	80347	4	Next, the comment period should be extended due to a failure of the agency to provide proper consultation with Alaska Native tribes and Alaska Natives Claims Settlement Act (ANCSA) Corporations (ANCs). The only community located within ANWR, and the community most impacted by this document, the Native Village of Kaktovik, received notice of this document while out on the Arctic Ocean engaged in subsistence whaling. We understand the Native Village of Kaktovik, the federally recognized tribe, nor the Kaktovik Inupiat Corporation (an ANC) were not consulted prior to the BLM's SEIS process. Beyond Kaktovik, other North Slope communities faced similar situations and to compound matters further, this summer, the region's main source of internet connectivity was lost for several months following damage to a fiber optic line. Comment periods have been extended before to work around important subsistence periods and the BLM should do so again as requested here.	Comment Acknowledged. An amended notice was published in the Federal Register (88 FR 73340) on October 27, 2023 that extended the comment period from October 23, 2023 to November 7, 2023.
Ferguson	Elizabeth	NANA	80352	2	We understand that North Slope stakeholders have expressed concern that BLM has not meaningfully engaged with North Slope communities through public meetings, and that BLM has not fulfilled its legal obligation to consult with all impacted Tribes and Alaska Native Corporations.	See Table 4-2. Government-to-government consultations were held with multiple tribal governments in several instances at the locations requested.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	3	The Agencies Must Better Engage Tribes and Tribal Members in Developing the Final SEIS. The Gwich'in Steering Committee and the Gwich'in Nation tried to play an active role in the process that BLM undertook to adopt the 2020 Leasing Program, but BLM's rushed timeline and lack of a transparent process made our engagement very challenging. While BLM and FWS held a public hearing in three Gwich'in villages on the draft SEIS, the agencies fell short of holding meetings in all of our communities. We live in fourteen small villages across a vast area extending from northeast Alaska to the northern Yukon and Northwest Territories in Canada. Our communities are located within the traditional range for the Porcupine Caribou Herd and will be impacted by any oil and gas activities on the Coastal Plain.(30) Additionally, there is a large network of food sharing that exists between all Gwich'in villages, and caribou is an important part of that practice. All Gwich'in communities will, therefore, be impacted in many ways by any oil and gas activities on the Coastal Plain. BLM and FWS should reach out to all Gwich'in communities to offer a follow-up hearing and engage in government-to-government consultation. (30) Gwich'in Steering Committee, Primary Habitat of the Porcupine Caribou Herd Map, included with prior comments. Additionally, the International Porcupine Caribou Herd Agreement (Caribou Agreement) recognizes that the Porcupine Caribou Herd is important for the "nutritional, cultural, and other essential needs" and for "customary and traditional uses" by Canadian First Nations and Alaska Natives.(31) The Caribou Agreement also recognizes that Alaska Native and Canadian First Nations have customary and traditional uses of the Porcupine Caribou Herd and "that these people should participate in the conservation of the Porcupine Caribou Herd and its habitat."(32) It goes on to state "[t]he Parties will ensure that the . . . interests of users of Porcupine Caribou are given effective consideration in evaluating proposed activities within the range of the Herd." (33) BLM and FWS have still not engaged Gwich'in communities in Canada; the agencies should remedy this prior to issuing the final SEIS. (31) Agreement Between the Government of Canada and the Government of the United States of America on the Conservation of the Porcupine Caribou Herd, U.S.-Can. July 17, 1987, E100687-CTS 1987 No. 31, available at http://www.treaty-accord.gc.ca/text-texte.aspx?id=100687 . (32) Id. (33) Id.	See Table 4-2. Government-to-government consultations were held with multiple tribal governments in several instances at the locations requested. The DOI has conducted consultation with the International Porcupine Caribou Board (IPCB) and with Canadian officials.
Carroll	Eda	-	80359	2	The BLM needs to communicate with our community of Fort Yukon, the Gwich'in nation. Please inform all tribes and community of the Gwich'in a little more thoroughly. Today is October 9th and this impact was submitted in September. So that's one full month from today being given an update at a public hearing and a public meeting.	See Table 4-2. Government-to-government consultations were held with multiple tribal governments in several instances at the locations requested.
Carroll	Eda	-	80359	3	So today I'd like to request your current communication process and I'd also like to request more communication with our community. We have different types of entities in our community. We have Gwichyaa Zhee Gwich'in Tribal Government, the City of Fort Yukon, the Council of Athabaskan Tribal Governments, the Gwichyaa Zhee Village Corporation, the Yukon Flats School District. The University of Alaska has a small office here. And we have plenty of small businesses.	See Table 4-2. Government-to-government consultations were held with multiple tribal governments in several instances at the locations requested.
Carroll	Eda	-	80359	4	Other than the treaties between the United States government and the Canadian government, again to ask the BLM to uphold those treaties. They're important.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.
Peter	Enei Begaye	-	80363	5	Additionally, the impacts of oil and gas drilling, the impacts to the international treaty obligations on the Porcupine caribou herd have not been adequately addressed. It's unclear in this Draft Supplemental Impact Statement how BLM intends to manage that treaty obligation.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.
Ahmasuk	Austin	-	80367	1	Our government and the Canadian government entered into a treaty in 1987 for the Porcupine Caribou Herd. And as far as the government of Canada is concerned that treaty is still relevant. They say in its most recent dealings with Arctic government with the Porcupine Caribou Herd. I would argue for a specific comment, specifically with -- related to this SEIS, that our government probably is deficient in its treaty obligations under the treaty that I mentioned that was signed in 1987, and is still ongoing and valid today. That -- that treaty was a list of obligations that I don't believe have been carried out under this SEIS.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Ahmasuk	Austin	-	80367	2	It's -- it's quite clear from the list of cooperating agencies in the -- in the -- in the preamble of the SEIS that none of the -- none of the Canadian partners are listed as any -- at least it's not clear that they've been in contact for a court nation, which is an obligation of our government -- between our government and the Canadian government for the protection of Porcupine Caribou Herd.	See Table 4-2. Government-to-government consultations were held with multiple tribal governments in several instances at the locations requested. The DOI has conducted consultation with the International Porcupine Caribou Board (IPCB) and with Canadian officials.
Wilson	Josie	-	80385	2	One of the questions I have, that I know you won't be able to answer, but I'd like to have answered in the Supplemental EIS process, is how decisions are being made and whether quantity is a part of that decision, or is it more about substantive and stakeholder engagement and stakeholder involvement. One of the reasons why I ask this question is because Kaktovic is one of the only Native villages within the 1002 specific area, and their input, from my understanding, has not been as inclusive as they would have liked. And we can discuss some of that from their opinions as to why, but I just want to reiterate for those folks that would like to be able to participate in that meeting and in this process, they have not been able to do so because of the timing of everything.	See Table 4-2. Government-to-government consultations were held with multiple tribal governments in several instances at the locations requested. The DOI has conducted consultation with the International Porcupine Caribou Board (IPCB) and with Canadian officials.
Dann	Julian	-	80390	1	I want to advocate as well for improved comanagement with tribal governments to speak more directly to what is in the EIS	See Table 4-2. Government-to-government consultations were held with multiple tribal governments in several instances at the locations requested.
Anderson	Bridget	-	80403	3	Yes, it is. We've heard from this administration over and over and over again how important subsistence hunting is to the indigenous people of Alaska. If it's so important, why did DOI make the announcement on this and the draft proposal on the NPRA on September 6th, which just happened to be the first successful whale hunt of the fall season? Kaktovik is the only community located within ANWR and the only community located within the 1002 area. They caught their first fall whale on September 6, the date that this administration made the announcement about canceling the leases in ANWR and the NPRA announcement. The other North Slope coastal villages, including Utqiagvik, are also either actively whaling right now or preparing for our fall whaling season. This administration has made it a talking point to state that indigenous voices are heard, including on issues like this, respecting indigenous subsistence rights, especially DOI, which oversees federal subsistence regs, and us having a seat at the table consistent with communication and consultation.	See Table 4-2. Government-to-government consultations were held with multiple tribal governments in several instances at the locations requested.
Ahmasuk	Austin	-	80447	2	It looks like, you know, the joint lead agencies consulted with tribal governments, but the SEIS still, you know, underestimates the intrusion of oil and gas development on those lands. It seemed as though the SEIS still gives a tremendous amount of decision making power to non indigenous entities, like the oil industry or other other interests, not not indigenous interests, and it seems like there's an imbalance of of of power, of of people that are from that area, who aren't just stakeholders, they're they're sovereign governments, they're tribes. They have a right to be involved in their and their input needs to take into consideration how intrusive oil and gas development is on these lands.	See Table 4-2. Government-to-government consultations were held with multiple tribal governments in several instances at the locations requested.
Warren	Julianne	-	80458	2	Also, the process has not taken into account free prior and informed consent with the Gwich'in nation on both sides of the current, Canada and U.S. Border and haven't really have not taken into account treaties, and relationships with on either side of that political boundary. And that is really crucial.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.

U.3.22 Irreversible and Irretrievable Commitments of Resources

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
H.	Zach	-	24233	4	All resources in the SEIS should be considered for impacts between these two areas to account for permanent impacts that will be associated with any future oil and gas development in the 1002 area.	Permanent impacts are taken into account in the analysis of resources in Chapter 3.
Enerson	Hal	-	30351	1	That conservation option MUST BE STRENGTHENED to ensure the area's irreplaceable ecological and cultural values are fully protected from the threat of oil and gas development.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
Griffin	Adrian	-	40443	1	I urge you to strengthen the conservation option in the draft supplemental environmental impact statement for Arctic National Wildlife Refuge. Drilling for oil in this area will harm will damage the landscape and harm wildlife, particularly the caribou that the native people depend on to continue their way of life.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
Brisson	Brook	Trustees for Alaska	80131	37	BLM cannot make an irretrievable commitment of resources without first conducting a site-specific NEPA analysis.	This SEIS analyzes indirect impacts from oil and gas leasing at the programmatic level. While leasing does not result in any on-the-ground impacts, the BLM recognizes there is an irreversible and irretrievable commitment of resources, which is why they are analyzed in the SEIS. Future NEPA analysis would include a consideration of site-specific irreversible and irretrievable commitment of resources.
Brisson	Brook	Trustees for Alaska	80131	38	An agency is required to fully evaluate site-specific impacts once it reaches the point of making "a critical decision . . . to act on site development."(242) An agency reaches the threshold triggering site-specific review when it proposes to make an irreversible and irretrievable commitment of resources.(243) In the oil and gas context, this occurs when an agency proposes to issue a lease that does not contain an express provision retaining the agency's authority to fully prohibit later activities on those leases.(244) Once this critical decision-point is reached, "any vague prior programmatic statements are no longer enough" to satisfy NEPA.(245) Here, if BLM is going to issue non-NSO leases, it cannot defer its site-specific analysis and cannot rely on vague programmatic statements in the draft SEIS. (239) Id. (240) Id. (241) Id. (emphasis added). (242) Friends of Yosemite Valley, 348 F.3d at 800 (quoting N. Alaska Envtl. Ctr. v. Lujan (NAEC), 961 F.2d 886, 890-91 (9th Cir. 1992)); see also Block, 690 F.2d at 761 ("The standards normally applied to assess an EIS require further refinement when a largely programmatic EIS is reviewed."). (243) Block, 690 F.2d at 761. (244) Conner v. Burford, 848 F.2d 1441, 1448 (9th Cir. 1988). (245) Pit River Tribe v. U.S. Forest Serv., 469 F.3d 768, 784 (9th Cir. 2006).	Irreversible and irretrievable commitments of resources are detailed in Section 3.7 of the SEIS. While leasing does not result in any on-the-ground impacts, the BLM recognizes there is an irreversible and irretrievable commitment of resources, which is why they are considered in the SEIS. Site-specific analyses are not possible at the programmatic level as there are no on-the-ground activities proposed. Future NEPA analysis would include a consideration of site-specific irreversible and irretrievable commitment of resources.
Brisson	Brook	Trustees for Alaska	80131	39	BLM and FWS acknowledge in the draft SEIS that the issuance of a lease is an irretrievable commitment of resources.(246) The agencies also claim lease issuance does not cause any direct impacts in and of itself because it does not authorize any on-the-ground oil and gas activities, but at the same time it says a "lease does grant the lessee certain rights to drill for an extract oil and gas."(247) Because BLM and FWS claim they "cannot ascertain the precise extent of the effects of granting those rights until it receives and reviews potential future site-specific proposals for exploration and development," they instead rely on the hypothetical development scenario to identify reasonably foreseeable effects.(248) This is not adequate for purposes of NEPA; the agencies either need to fully retain their authority to say no to future proposals or be required to fully analyze the site-specific impacts. (246) DSEIS App. F at F-1. (247) Id.; DSEIS at 1-2. (248) See, e.g., DSEIS at 1-2, 3-1.	This SEIS analyzes indirect impacts from oil and gas leasing at the programmatic level. While leasing does not result in any on-the-ground impacts, the BLM recognizes there is an irreversible and irretrievable commitment of resources, which is why they are analyzed in the SEIS. Future NEPA analysis would include a consideration of site-specific irreversible and irretrievable commitment of resources.
Brisson	Brook	Trustees for Alaska	80131	40	The draft SEIS has conflicting statements about the exact scope of the authority BLM will retain under any leases. On the one hand, it states that issuance of a lease constitutes an irreversible and irretrievable commitment of resources.(249) On the other hand, it claims that BLM retains at each decision stage "the authority to approve, deny, or reasonably condition any proposed on the ground-disturbing activity based on compliance with the terms and conditions of the lease and applicable laws and policies."(250) (249) DSEIS App. F at F-1. (250) DSEIS at 3-1.	No change. These statements are not conflicting.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	41	BLM and FWS also rely heavily on NSO stipulations for a number of the areas that could be leased under Alternatives C and D.(251) While the use of NSO provisions in the leases could potentially mean that BLM is not making an irretrievable commitment of resources at the leasing stage for purposes of some leases, the draft SEIS never draws that distinction or explains how BLM will implement the NSO stipulations to ensure it fully retains the authority to deny and limit later proposals. The conflicting and unclear statements about the nature of the right BLM is granting under the leases makes it challenging for the public to meaningfully determine the exact nature of these leases or whether BLM has truly retained the right to later preclude all activities on those leases. The use of NSO provisions in the draft SEIS also needs to be clarified. On the one hand, the draft SEIS seems to refer to a set of NSO restrictions that will apply across a broad portion of areas under Alternatives C and D.(252) This appears to be reflected in Map 2-5, which indicates a large portion of the area available for lease sale would be subject to NSO under Alternative D.(253) However, it is unclear if this reflects that there would be an overarching NSO provision that applies to leases in those areas or whether that just reflects the overlapping compilation of the individual, resource-specific NSO provisions.(254) This needs clarification in the final SEIS. This is particularly important since, if the agencies are contemplating an overarching NSO provision, it is unclear whether that would be subject to the same waiver provisions as the resource-specific lease stipulations. In addition, if the agencies are allowing for waivers, exceptions, and modifications of the NSO provisions in general, those leases cannot be deemed NSO for purposes of excusing BLM from needing to conduct a site-specific analysis at this stage. BLM needs to do a site-specific analysis prior to making an irretrievable commitment of resources. (251) See, e.g., DSEIS 2-2 tbl.2-1. (252) See, e.g., DSEIS 2-2 tbl.2-1. (253) DSEIS map 2-5. (254) DSEIS map 2-6; DSEIS tbl.2-2.	The acres subject to NSO stipulations varies by alternative. No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis." Future site specific NEPA would be requires before any facilities are allowed on a case-by-case basis.
Brisson	Brook	Trustees for Alaska	80131	42	The lack of clarity regarding the use of NSO provisions is concerning in light of how BLM has proceeded in the past with issuing leases in the Reserve. In the Reserve, BLM has issued leases constituting an irretrievable commitment of resources, without first conducting a site-specific NEPA analysis; once development projects have arisen, BLM claims that it no longer retains the right to deny development proposals by adopting the no action alternative because "oil and gas leases provide a right of development."(255) BLM cannot leave such uncertainty to the future. BLM needs to either fully retain the authority to preclude all activities pending submission of later site-specific proposals - i.e., not make an irretrievable commitment of resources - or conduct a far more robust, site-specific analysis at this stage. Put another way, BLM should acknowledge the difference between retaining authority to deny a particular application for a permit to drill or conduct other activities pursuant to a lease, and retaining the authority to preclude development altogether, even if that means barring access to some or all of the oil and gas associated with the leased parcel. Anything short of the latter irretrievably commits resources because some amount of damage will inevitably occur for the lessee to explore and extract the oil and gas resources. If BLM does not retain the authority to deny all activities, the exercise of those rights is a direct effect of this decision, which is contrary to the statements in the draft SEIS that granting leases does not have direct impacts.(256) The effects of foreclosing a no action alternative for future decisions must be disclosed now and evaluated as a direct effect of the leases. BLM should also provide the public with template lease language in the final SEIS so it is clear that BLM has in fact retained the authority to fully preclude development on the leases. As discussed earlier, BLM should retain its authority to preclude all later activities on the leases to ensure that it is able to fully comply with the Tax Act's 2,000-acre provision. Groups recognize BLM's extensive use of NSO provisions in Alternative D, but BLM needs to clarify and expressly state the full nature of the rights it will retain through such a mechanism and whether it applies to the entire leased area. (255) See, e.g., BUREAU OF LAND MGMT., GREATER MOOSES TOOTH 2 OIL AND GAS DEVELOPMENT PROJECT: JOINT RECORD OF DECISION AND PERMIT EVALUATION 8 (2018) ("Alternative D is not a practicable alternative in the JROD, due to the fact that the BLM cannot select this alternative as its decision for GMT2. Once issued, oil and gas leases provide a right of development, subject to reasonable regulation."). (256) See, e.g., DSEIS App. F at F-1.	The SEIS has analyzed all reasonably foreseeable impacts associated with the alternatives. Applications for future on-the-ground activities will require additional project-specific NEPA analysis and take into account the project-specific details at that time. Providing template lease language in the SEIS would be premature prior to a ROD that adopts specific lease stipulations.
Brisson	Brook	Trustees for Alaska	80131	43	The agencies similarly fail to distinguish between what decisions are irreversible or irretrievable at this point in time and instead improperly defers to the IAP for the Reserve. The draft SEIS states that a "detailed description of irreversible or irretrievable commitments of resources from oil and gas development on the North Slope is in Section 4.11 of the NPR-A EIS" and includes a bullet list of types of effects that would be irreversible.(257) These are effects of the leasing program as a whole, and fail to distinguish between what becomes irreversible now and what becomes irreversible at later decision points. It is important for the public to understand the effects that would occur solely because of a lease and this specific oil and gas program - as opposed to those that might occur from a potentially different program hundreds of miles away in the Reserve. (257) DSEIS 3-449.	Sections 3.6 and 3.7 have been updated with additional information.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	44	Relatedly, the agencies cannot defer the analysis of foreseeable impacts by asserting that the consequences are unclear or that the agency will analyze the impacts at a later point in time when there is a development proposal if BLM is going to make an irretrievable commitment of resources.(258) Here, the agencies assert that they do not have sufficient information to engage in more than a hypothetical analysis of what might be a reasonably foreseeable development scenario.(259) If the agencies do not have sufficient information at the lease sale stage to conduct a site-specific NEPA analysis, they can delay that analysis "provided that [they] reserve[] both the authority to preclude all activities pending submission of site-specific proposals and the authority to prevent access to oil and gas completely if the environmental consequences are unacceptable."(260) If there is too much uncertainty to conduct a more robust analysis at this stage, the agencies have a choice: they must either reserve the authority to preclude all access to oil and gas and related activities on the entire lease or they must conduct a site-specific analysis prior to making an irretrievable commitment of resources.(261) (258) Kern v. U.S. Bureau of Land Mgmt., 284 F.3d 1062, 1072 (9th Cir. 2002). (259) DSEIS at 1-2. (260) Ctr. for Biological Diversity v. BLM, 937 F. Supp. 2d 1140, 1153 (N.D. Cal. 2013) (quoting Sierra Club v. Peterson, 717 F.2d 1409, 1415 (D.C. Cir. 1983)). (261) Id.	Site-specific analysis is not possible at the programmatic level as the location of proposed oil and gas activities within areas available for lease is unknown. Under the directives of Section 20001(c)(1) of PL 115-97, a lease does grant the lessee certain rights to drill for and extract oil and gas subject to further environmental review and reasonable regulation, including applicable laws, terms, conditions, and stipulations of the lease. Therefore, future site-specific NEPA would occur prior to any on the ground activities.

U.3.23 Landownership and Use

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	11708	3	The most protective alternative has unacceptable, overly broad, and undefined stipulations regarding “no surface occupancy”. These apparent loopholes would allow for infrastructure and development and must be removed from the SEIS. NSO stipulations are intended to provide protections on leased tracts and must be clearly defined and must not be waived in the SEIS/EIS.	No-Surface-Occupancy (NSO) is defined as "An area that is open for mineral leasing but does not allow the construction of surface oil and gas facilities in order to protect other resource values. Facilities such as essential roads, pipelines, a dock, and a seawater treatment/desalinization plant may be allowed in these areas on a case-by-case basis."
Brisson	Brook	Trustees for Alaska	80131	92	Groups previously identified the need for BLM to explain its position on the legal status of ASRC subsurface lands, including the application of any protective provisions adopted in the Leasing Program, and to consider the impacts to the Coastal Plain of any oil and gas activities that may take place on private corporation lands.(435) BLM has still not adequately explained the legal status of these lands or analyzed impacts of oil and gas activities on ASRC lands. Without explanation, BLM stated in the final EIS in response to comments that the ASRC lands are now open to oil and gas exploration and development, but that the stipulations and ROPs do not apply to these lands. (436) BLM and FWS appear to maintain this position.(437) If BLM and FWS's position is that these areas are now open to oil and gas, it must analyze the impacts of any activities on those lands to the Coastal Plain. Such activities are not speculative; KIC is seeking permits to conduct seismic on these lands. In the course of analyzing the impacts from activities on private corporation lands, the agencies must also be clear about what protections may or may not apply to those lands, including those in the 1983 Chandler Lake Agreement and any mitigation measures adopted under the Leasing Program that would apply under ANCSA 22(g), and explain thoroughly its reasoning. Additionally, as explained below, the draft SEIS must include an analysis of the impacts of development of oil and gas and support facilities on Corporation and private land. This area of analysis is still lacking in the draft SEIS. (435) 2021 Scoping Comments at 77; 2019 DEIS Comments at 306. (436) FEIS App. S at S-539. (437) DSEIS App. F at F-12.	The lands identified are not federal lands or waters and are thus outside of the program area in this analysis. No changes have been made to the document.
Brisson	Brook	Trustees for Alaska	80131	390	We encourage BLM and FWS to evaluate more fully the impacts of the Leasing Program on Native allotments. Part of this analysis should include a more detailed review of what mitigation measures could lessen impacts and how. Right now, the draft SEIS includes largely general statements about how "[l]ease stipulations would mitigate some impacts"(1080) but is short on analysis.	Impacts to Native allotments are described in Section 3.4.1., including specific stipulations and mitigation measures that would reduce impacts. No change has been made to the document.
Brisson	Brook	Trustees for Alaska	80131	391	Additionally, BLM and FWS note multiple times that an oil and gas program may lead to an expansion of infrastructure and facilities in the City of Kaktovik,(1081) but do not analyze what those impacts would be on Coastal Plain resources. The agencies must analyze all reasonably foreseeable impacts. BLM and FWS still have not adequately explained the legal status of ASRClands and how any mitigation measures adopted in the Leasing Program may apply to those lands. It must do so in the SEIS, as it is a critical piece to understand the full extent of oil and gas activities and potential impacts on the Coastal Plain and its resources. Additionally, the draft SEIS notes that there are pending applications for a communications tower as well as a snow trail within the project area.(1082) There is little information provided about these applications and no meaningful analysis of the impacts of these actions in addition to the Leasing Program. A discussion of these impacts must be expanded in the final SEIS. (1081) DSEIS at 3-274. (1082) DSEIS at 3-274, App. F at F-7, F-10 to F-11.	The SEIS addresses impacts to the resources mentioned in the comment in the cumulative effects section of Section 3.4.1. No change has been made to the document.
Adoko	Ashlee	State Of Alaska	80221	26	Document Reference: Executive Summary, ES-1, and throughout Reviewer: JDA/LH Agency DMLW Resource/Topic Program Area Definition / Land ownership Comment: Program Area as declared on page ES-1 and as defined by Map 1-1 is incomplete, incorrect, and misleading. The State asserts that the land between the Staines and Canning Rivers (formerly known as Tract 29 in the previous EIS), was validly selected by the State of Alaska under the Alaska Statehood Act through numerous applications and has active litigation in the U.S. District Court for the District of Alaska, State of Alaska v. U.S. Dep't of the Interior, No. 3:22-cv-00078-SLG, to confirm this position. Until resolution of this case, the definition of Program Area must indicate that these lands are "Under Dispute" or "state selected" to avoid misleading decisions within the SEIS and misleading the Public-at-Large. At least one Alternative should have considered the outcome that the lands between the Staines and Canning Rivers are state-selected and will become state-owned. Since all Alternatives within the SEIS use this misleading definition of Program Area, the entire document therefore contains a legal defect.	As noted in the SEIS, Chapter 1, Section 1.5, and acknowledged by PL 115-97, State selection rights under the Alaska Statehood Act to approximately 20,000 acres in the northwest portion of the Coastal Plain are the subject of a lawsuit filed by the State of Alaska in the U.S. District Court of Alaska (State of Alaska vs. Department of the Interior, Docket No. 3:22-cv-00078-SLG). Until determined otherwise, the US currently owns this land and it is subject to PL 115-97. Under each action alternative, the disputed lands are made available for leasing.
Adoko	Ashlee	State Of Alaska	80221	50	Document Reference Chapter 3, Section 3.4.1 Landownership and Use, page 3- 270 Reviewer MD Agency DNR- ANILCA Resource/Topic Allowances for ANILCA Title XI Transportation and Utility Systems Comment: ANILCA Title XI requires special consideration/review of Transportation and Utility Systems in Conservation System Units like the Arctic National Wildlife Refuge. We request the following addition (underlined text) to this sentence: "In areas subject to NSO, new land uses would be precluded, except where ANILCA allowances would allow construction such as roads allowed under 1110(b) and the Title XI Transportation and Utility System provisions. "	Text has been edited in Section 3.4.1 to read: "In areas subject to NSO, new land uses would be precluded, except where ANILCA allowances would allow construction such as roads allowed under ANILCA Title XI provisions."

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Flanagan	Taylor	-	80320	3	Further, since Alternate D restricts the non-NSO lease sale area to only 3% of the total refuge, it could be difficult to find the land needed for infrastructure (CPFs, drill pads, etc).(12) The SEIS notes that this could lead to oil production and supporting infrastructure instead located on Native lands.(13) This would be further exacerbated by the fact that much of the land is near Native allotments. Though this would likely bring economic growth to ANCSA Native corporations, it would also negatively impact subsistence use and land quality. Alternate D appears to most account for environmental impacts, but if these impacts are pushed off leased public land and onto Native lands, the agency cannot pretend these impacts will not count. If anything, they will be subject to fewer restrictions and thus could have far more detrimental effects on the environment.	Impacts to Native allotments and ANCSA corporations are described in Section 3.4.1. No change has been made to the document.

U.3.24 Lead and Cooperating Agencies

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Strassenburgh	John	-	80071	5	There are references to the BLM Authorization Officer's authority (e.g., p 1-2) to require additional site-specific terms and conditions. Or, (e.g., p 2-14) BLM Authorization Officer may approve alternative protective measures. Neither of these provides reasonable guardrails, and neither indicates whether the Officer's authority extends to weakening stipulations or requirements rather than strengthening them. More broadly, the draft SEIS does not provide an explanation of the nature and scope of the BLM Authorization Officer's authority and what limits to that authority apply. Without meaningful standards, requirements, and limits, a BLM Authorization Officer could take wide discretion in allowing exceptions to, and effectively negating, the stipulations and requirements of the draft SEIS. I recommend the draft SEIS address this problem to clarify the limits to the BLM Authorization Officers authority, the conditions/activities where it may be exercised, conditions/activities where it may not be exercised, and processes (including documentation of the action) that must be employed. The draft SEIS also does not make clear what role and authority the US Fish and Wildlife Service has in making decisions about surface uses regarding the oil and gas program. The final SEIS should better explain the relationship between BLM and USFWS and their respective authorities.	Section 20001(a)(1) of PL 115-97 explicitly directs that the Coastal Plain oil and gas program be managed by the Secretary of the Interior, acting through the BLM. Therefore, that authority cannot be delegated to USFWS. However, stipulations and ROPs have been updated to reflect that the BLM Authorized Officer will coordinate with the USFWS, in their role as the Refuge land manager, when processing applications for oil and gas activities including requests for waivers, exceptions, or modifications. Chapter 1, Sections 1.4 and 1.8.1 have been updated to include information about the BLM and USFWS relationship. The ROD will determine which Lease Stipulations and ROPs are subject to waivers, exceptions, and modifications. Project-specific NEPA analyses will further analyze any requests for waivers, exceptions, or modifications (pursuant to the standards noted in Section 2.3.5).
Strassenburgh	John	-	80071	8	Also, the draft SEIS doesn't sufficiently discuss records that the overseeing agency must maintain in order to account for qualifying acreage and to monitor and enforce the 2000 acre (or 1040 acre) limit. Also, the draft SEIS is not clear on whether the BLM has the authority to stop further oil and gas development once the 2000 acre limit has been reached, especially if such further development would occur on lands for which leases have been issued. The final SEIS should be made clear on this question.	See Appendix T, Response to Comments, header Tracking and Enforcement of Facility Acreage for additional information on how the BLM would track the 2,000-acre ceiling.
Brisson	Brook	Trustees for Alaska	80131	52	The final SEIS should explain what the agencies mean when they say that for all activities regarding the Leasing Program, BLM will coordinate with FWS "to ensure that its considerations as the surface management agency are taken into account."(291) Groups note FWS and Interior are still subject to the requirements of other statutes, such as the NWRSAA and ANILCA, which were in no way abrogated or limited by the Tax Act. As explained below, these statutes give FWS a direct role in permitting and decision making for activities on the Coastal Plain, including for activities related to the Leasing Program. Without more information about how DOI is structuring the relationship between BLM and FWS, and how FWS administration and management actions may be impacted by the oil and gas program, the public cannot be sure that Secretary is complying with ANILCA and the NWRSAA regarding FWS's administration and management of the Refuge. The agencies should clarify this information, and in doing so, it must be sure that its roles and responsibilities are consistent with current laws regarding Refuge administration. (291) DSEIS at 1-4, 2-7.	The USFWS is a joint lead agency with the BLM for preparation of this SEIS. Decisions to be made by both agencies are described in Section 1.4. The USFWS continues to be responsible for managing all federal lands on the Coastal Plain as part of the Refuge, including both leased and unleased areas. However, the BLM is responsible for managing all aspects of the oil and gas program, including the issuance and administration of oil and gas leases, and permitting of all oil and gas activities. The CCP does not govern BLM's implementation of the oil and gas program. The stipulations and ROPs have been updated to reflect that the BLM Authorized Officer will coordinate with the USFWS.
Brisson	Brook	Trustees for Alaska	80131	56	Despite the clear compatibility requirements, the prior Leasing Program failed to account for them. The draft SEIS makes this same error. (305) FWS has not proposed any compatibility determinations as part of this leasing EIS and there are no current compatibility determinations that cover the proposed oil and gas program.(306) It is unclear how the Secretary will ensure that compatibility mandates are complied with for the oil and gas program, or at what stage of the program FWS will propose compatibility determinations to cover the activities under the Leasing Program. It is also unclear if FWS could even find that such activities would be compatible. For example, the FWS compatibility policy states that uses such as roads and pipelines may reasonably be anticipated "to reduce the quality or quantity or fragment habitat on a national wildlife refuge will not be compatible."(307) Regardless, no oil and gas activities, including a lease sale, can proceed prior to completion of a compatibility determination by FWS. (305) DSEIS App. at D-3 to D-4 (failing to discuss compatibility mandate under applicable laws). (306) CCP EIS at Appendix G. (307) 65 Fed. Reg. 62,486 (2000); 603 FW 2.5.	The Coastal Plain oil and gas program will be managed by the BLM, under Section 20001(a)(1) of PL 115-97. Compatibility determinations stem from the Refuge Administration Act, which only applies to the USFWS' management of refuges. All action alternatives are designed to meet the purpose and need, and to account for all purposes of the Arctic National Wildlife Refuge. The USFWS CCP (2015) may be revised in the future to address the five purposes of the Refuge, as amended by Section 20001(c)(1) of PL 115-97, and their management strategies.
Brisson	Brook	Trustees for Alaska	80131	57	Additionally, the statements in the draft SEIS describing BLM as having "sole responsibility" for making decisions regarding the oil and gas leasing program fail to account for the fact that FWS can and must make compatibility determinations for all proposed activities under the program.(308) FWS, therefore, has a significant role in approving activities for the oil and gas program via its compatibility mandate and the final SEIS must recognize this. (308) DSEIS at ES-2, 1-4.	The Coastal Plain oil and gas program will be managed by the BLM, under Section 20001(a)(1) of PL 115-97. Compatibility determinations stem from the Refuge Administration Act, which only applies to the USFWS' management of refuges. All action alternatives are designed to meet the purpose and need, and to account for all purposes of the Arctic National Wildlife Refuge. The USFWS CCP (2015) may be revised in the future to address the five purposes of the Refuge, as amended by Section 20001(c)(1) of PL 115-97, and their management strategies.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	58	Congress bound the Secretary to "manage the refuge . . . in a manner consistent with the plan."(314) Oil and gas leasing and any related activities on the Coastal Plain are, therefore, inconsistent with the CCP and present management of the Coastal Plain. It is important to note that under the Minimal Management category governing present use of the Coastal Plain,(315) many of the activities that BLM is considering as part of the oil and gas program are not permitted.(316) BLM and FWS should better explain how the Leasing Program is consistent with the CCP. Groups remain concerned that adopting the Leasing Program will indirectly and implicitly amend or alter the CCP. This cannot be permitted. The agencies state that the CCP will be revised to account for all purposes of the Coastal Plain but give no additional information on when or how that will be accomplished.(317) To amend the CCP, FWS must take clear action and do so in compliance with multiple statutes and regulations that mandate notice and public participation.(318) (314) 16 U.S.C. § 668dd(e)(1)(E); see also e.g., Ctr. for Food Safety v. Jewell, 83 F. Supp. 3d 126 (D. D.C. 2015) (overturning certain farming activities on a refuge unit because its CCP had not addressed site-specific impacts of the activities). (315) CCP EIS at 3-34; CCP ROD at 5. (316) For example, gravel mining is not permitted under Minimal Management in the Arctic Refuge. CCP EIS at 2-72. But under the action alternatives proposed by BLM, gravel mining would proceed. DSEIS at 3-49 to 3-50. (317) DSEIS at 3-272. (318) ANILCA § 304(g); U.S. Fish and Wildlife Service, Comprehensive Conservation Planning Process, 602 FW 3 at 8(b) (June 21, 2000).	The Coastal Plain oil and gas program will be managed by the BLM, under Section 20001(a)(1) of PL 115-97. Compatibility determinations stem from the Refuge Administration Act, which only applies to the USFWS' management of refuges. All action alternatives are designed to meet the purpose and need, and to account for all purposes of the Arctic National Wildlife Refuge. The USFWS CCP (2015) may be revised in the future to address the five purposes of the Refuge, as amended by Section 20001(c)(1) of PL 115-97, and their management strategies.
Brisson	Brook	Trustees for Alaska	80131	532	Further, it is unclear what if anything the agencies have done to meet their respective obligations to "empower Tribal stewardship" and pursue co-stewardship opportunities with Tribes as part of the SEIS process.(1478) In the draft SEIS, BLM failed to address the Joint S.O. or BLM's and FWS's policies regarding co-stewardship. The agencies merely state: "The BLM does not have authority to enter into cooperative agreements for co-management of surface resources in the Arctic Refuge; surface lands are not BLM managed lands under the Federal Land Policy and Management Act (FLPMA) Section 307(b)."(1479) While the Refuge is not BLM-managed land, this does not mean that BLM and FWS cannot explore co-stewardship issues under their policies. BLM and FWS acknowledge in Appendix C that the public "requested that the BLM discuss the role of the Gwich'in in the active management of the herd, in either a traditional or a contemporary, co-management context."(1480) But the agencies then simply summarizes testimony capturing traditional knowledge of the Porcupine Caribou Herd and its migratory patterns, without discussing any potential co-stewardship role for the Gwich'in.(1481) In addition, despite FWS's role as the sole administrator of the Arctic Refuge,(1482) nothing in the draft SEIS recognizes FWS's policy stating the agency "must" (1483) engage in co-stewardship where lawful and DOI's directive to "[m]ake agreements with Indian Tribes to collaborate in the co-stewardship" of Federal lands, waters and wildlife.(1484) To the extent the agencies have not sought opportunities for consultation and co-stewardship, Groups encourage the agencies to undertake those conversations. (1478) Joint S.O. at 3. (1479) DSEIS at ES-3, 1-5. (1480) Id. at C-9. (1481) Id. at C-9-11. (1482) Id. at 1-4 ("The USFWS is the predominant land manager in the program area."). (1483) FWS Co-stewardship Order at § 5. (1484) Joint S.O. at 2.	The BLM and USFWS have been and will continue to engage Tribes in meaningful government-to-government consultation in order to provide an opportunity for Tribes to shape the direction of the oil and gas program management activities (see Section 4.3). As the BLM implements the program, it will explore opportunities with Tribes for co-stewardship of the program, per Secretarial Order 3403 and BLM Permanent Instruction Memorandum 2022-011.
Adoko	Ashlee	State Of Alaska	80221	7	Section 5 - The Leasing SEIS process is deficient. In contrast to the process resulting in the 2019 Leasing EIS, the State has been denied the opportunity to meaningfully participate as a Cooperating Agency throughout the Leasing SEIS process. This is despite the Council on Environmental Quality's (CEQ's) regulations; the State's comments to this effect in its October 17, 2023 and May 30, 2023 letters to the Lead Agencies (enclosed and incorporated); and the lack of an extension to the November 7, 2023 public comment deadline. The State has been committed to working with the Lead Agencies throughout the Leasing SEIS process, in its role as a Cooperating Agency, to inform decisions affecting energy development in the Coastal Plain and the environmental safeguards needed to ensure the vitality of Alaskans and Alaskan landscapes. The State is a sovereign trustee of these resources and is the best entity to represent the interests of Alaskans in the development of this SEIS as a Cooperating Agency.	The joint lead agencies invited representatives from the State of Alaska to participate in the alternatives development process. All cooperating agencies, including the State of Alaska, were provided the opportunity to review the Administrative Draft SEIS prior to publication and appropriate comments were incorporated. All cooperating agencies have received the same opportunities for engagement. The public comment period was extended from October 23 to November 7, 2023 per requests from cooperating agencies and others.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Adoko	Ashlee	State Of Alaska	80221	19	In a November 9, 2020, opinion in docket Nos. IBLA 2016-109 and IBLA 2017-55, the IBLA made findings regarding the location of ANWR's northwestern-most boundary. The IBLA's decision, that addressed lands located between the Staines and Canning Rivers, had the effect of placing the disputed area within ANWR. The State has sought judicial review of the IBLA's decision and, until this litigation is finally resolved, the State maintains that the disputed area lies outside of ANWR notwithstanding the IBLA's decision. The State notes that in the event the disputed area is included in leases sales (the disputed area appears to include tidal or submerged lands that the State has already placed under lease), the State reserves all legal rights, remedies, and causes of action. No waiver or estoppel may be inferred. The State's remedies may include, without limitation and in addition to the arguments presented to the IBLA, the State's issuance of an ANILCA Section 906(k) letter of concurrence, which, pursuant to that provision, would further protect the State's interest In proceeds derived from activities resulting from lease sales. In the spirit of a 2019 Memorandum of Agreement (MOA) between BLM and DNR, DNR contends that title of the State to the disputed area (if offered for lease in upcoming lease sale) would continue to be governed by the location of the disputed area legal boundary. In 2019, BLM and DNR recognized that BLM would be initiating (and that DNR had already initiated) leasing activities in the vicinity of the Coastal Plain coastal boundary (and the ambulatory nature of that coastal boundary). To resolve uncertainty, to eliminate potential bias for disputes, and to prevent avoidable litigation regarding lease administration, leased lands ownership, royalty payments, rentals, and bonus bids, BLM and DNR entered an MOA (2019 MOA between BLM and DNR, fully executed December 18, 2019, enclosed). Pursuant to that MOA, BLM and DNR agreed that title of the U.S. (as represented by BLM) and the State (as represented by DNR) to lands offered for lease (or already leased), in the vicinity of the (ambulatory) boundary, would continue to be governed by the location of the legal boundary. Again, the State contests the IBLA's November 9, 2020, decision in docket Nos. IBLA 2016-109 and 2017-55, which had the effect of placing the disputed area within ANWR, and may pursue judicial or other relief nullifying such decision. In the spirit of the 2019 MOA, DNR contends that title of the State to the disputed area (if offered for lease in upcoming lease sales) would continue to be governed by the location of the disputed area legal boundary.	As noted in the SEIS, Chapter 1, Section 1.5, and acknowledged by PL 115-97, State selection rights under the Alaska Statehood Act to approximately 20,000 acres in the northwest portion of the Coastal Plain are the subject of lawsuit filed by the State of Alaska in the U.S. District Court of Alaska (State of Alaska vs. Department of the Interior, Docket No. 3:22-cv-00078-SLG). Until determined otherwise, the US currently owns this land and it is subject to PL 115-97. Under each action alternative, the disputed lands are made available for leasing.

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Adoko	Ashlee	State Of Alaska	80221	20	For projects in the Coastal Plain, the State supports deference to BLM, as manager of the lands in the Coastal Plain, consistent with its duty and authority under the Tax Act, and consultation with the State and other regulatory agencies and stakeholders. Although the BLM intends to consult with the FWS when making Program decisions, Section 20001(a)(2) and (b)(2)(A) of the Tax Act assigns the BLM the sole responsibility for making such decisions. The FWS continues managing all federal lands in the Coastal Plain as part of the Arctic Refuge, including both leased and unleased areas; however, the BLM manages all aspects of the Program, including issuing and administering oil and gas leases and issuing permits for all oil and gas activities. Consistent with the Tax Act, BLM has the duty and authority to fully administer the Program, including the authority to directly manage lands in the Coastal Plain as necessary to do so. Although the Fish and FWS is the manager of ANWR, its management of the Coastal Plain is subject to the provisions of the Tax Act and the revised purpose of ANWR "to provide for an oil and gas program on the Coastal Plain."(51) This new direction and Congressional purpose controls management of the Coastal Plain, and FWS's authority must be exercised accordingly. In some cases, it may be unclear whether projects are oil and gas, community, or other projects. Such projects may be a combination or may start as one project type and change to another. The State supports deference to BLM in such cases. (51) Pub. L. No. 115-97, Sec. 20001(b)(2)(B), 131 Stat. 2054 (2017). The State appreciates BLM's acknowledgement in its 2019 ROD that when Congress directed that the prohibition in ANILCA section 1003 on development and production of oil and gas "shall not apply to the Coastal Plain"(52) and made it an ANWR purpose under ANILCA section 303(2)(B) "to provide for an oil and gas program on the Coastal Plain,"(53) it superseded FWS's ANWR Comprehensive Conservation Plan (CCP, 2015), which precludes oil and gas development, with respect to management of the Coastal Plain.(54) (52) Pub. L. No. 115-97, Sec. 20001(b)(1), 131 Stat. 2054 (2017). (53) Pub. L. No. 115-97, Sec. 20001(b)(2)(B), 131 Stat. 2054 (2017). (54) 2019 ROD at 18 and 19. In the State's comments on the 2019 EIS, the State recommended direction to the FWS to amend the CCP for consistency with the Tax Act. Even though the FWS has not amended the CCP for consistency with the Tax Act, the State appreciates BLM's acknowledgement in its 2019 ROD that "The CCP does not constrain BLM actions taken consistent with its jurisdiction over the statutorily mandated oil and gas program within ANWR,"(55) and that until FWS amends the CCP for consistency with the Tax Act, the "Congressional action directing the Secretary, acting through the BLM, to establish and administer an oil and gas development program in the ANWR supersedes any conflicting provisions in the current CCP."(56) The State requests that the Lead Agencies incorporate a similar acknowledgment into the Final SEIS. (55) 2019 ROD at 18. (56) 2019 ROD at 19. In implementing the Program, the State recommends that BLM consult with the State and other regulatory agencies, including the NSB, as well as with the North Slope resident stakeholders, including the Native Village of Kaktovik residents. The State and other regulatory agencies, including the NSB, have authorities and responsibilities for work that may be proposed in the Coastal Plain. These agencies have long histories of safely managing oil and gas development and will have regulatory roles in the Program moving forward. In addition, the State encourages continued significant efforts by BLM to consult with North Slope resident stakeholders, including the Native Village of Kaktovik residents, to ensure resources of concern are identified and protected.	As noted in the Purpose and Need (Section 1.3), any oil and gas program alternative must consider all five statutory purposes of the Refuge, none of which are superseded by any other. The USFWS CCP (2015) may be revised in the future to address the five purposes of the Refuge, as amended by Section 20001(c)(1) of PL 115-97, and their management strategies.
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	2	BLM developed the Final EIS and ROD for the Leasing Program over the course of several years through a comprehensive, thorough environmental review process that fulfilled BLM's legal obligations under the National Environmental Policy Act ("NEPA"). This previous public process included substantial involvement from a broad spectrum of stakeholders-including the Borough, which served as a cooperating agency under NEPA in the development of the EIS for the Leasing Program. The Borough has since been excluded as a cooperating agency from the Draft SEIS. Moreover, ASRC has not been consulted on the Draft SEIS. The present Draft SEIS, including its rationale and its revised findings, belies the scientific integrity of the years-long process that went into developing the Final EIS and ROD. This new, unwarranted review dismisses the voices of the people who actually live within the Coastal Plain and participated in the development of the Final EIS and ROD. The policy objectives of this Administration do not negate congressional intent nor do those objectives nullify the results of the rigorous environmental review that supported the implementation of the Leasing Program and the initial lease sale under that program.	The joint lead agencies invited the North Slope Borough to be a cooperating agencies in August 2021. All appropriate ANCSA corporations were invited to consult on the SEIS in August 2021. The North Slope Borough was re-invited to be a cooperating agency in December 2023. Section 4.4 has been updated to show all ANCSA consultation coordination meetings that have occurred for the project.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	4	In addition to setting an inadequate comment period, the Agencies have failed to appropriately engage local entities through their lack of transparency, communication, cooperation, and coordination. Although ICAS was added as a cooperating agency in this latest round of environmental review, the Borough which has long served as a cooperating agency in environmental reviews across its jurisdiction related to oil and gas development, including earlier rounds of this same review-was unceremoniously dropped as a cooperating agency. ASRC, as the impacted Alaska Native regional corporation, has not been consulted, as is required by law and agency policy. The Agencies have rushed to hold local meetings on the Draft SEIS (again. during our whaling season) before the comment period closes. The meetings were scheduled with little advance notice, which precluded meaningful participation by any of our communities. Such last-minute efforts to "check the boxes" on local engagement fall flat of meaningful engagement.	All appropriate ANCSA corporations were invited to consult on the SEIS in August 2021. Section 4.4 has been updated to show all ANCSA consultation meetings that have occurred for the project. The public comment period was extended from October 23 to November 7, 2023 per requests from cooperating agencies and others.
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	5	The Department of the Interior's ("Department") NEPA regulations provide guidance on which agencies should serve as cooperating agencies, directing that officials responsible for leading the environmental review "must whenever possible consult, coordinate, and cooperate with relevant State, local, and tribal governments and other bureaus and Federal agencies concerning the environmental effects of any Federal action within the jurisdictions or related to the interests of these entities." (8) BLM's NEPA regulations further provide that BLM must invite "eligible government entities" to participate as cooperating agencies when BLM is developing an EIS-"eligible government entities" specifically include local agencies "qualified to participate in the development of an environmental impact statement by virtue of [their] special expertise." (9) (8) 43 C.F.R. § 46.155 (9) See 43 C.F.R. § 46.225(a)(2), (b). At BLM's invitation, the Borough was a cooperating agency in the development of the EIS for the Leasing Program. In this role, the Borough participated in coordination meetings, alternatives workshops, and scoping meetings; provided input on draft documents; and submitted detailed written comments on BLM's notice of intent to prepare an EIS, Draft EIS, and the Preliminary Final EIS for the Leasing Program. The Borough's participation was substantial and involved dedicated efforts from many of the Borough's employees and departments. However, the Borough was excluded from cooperating on the development of the Draft SEIS. By failing to coordinate or even communicate with the Borough in any official capacity regarding the Draft SEIS, BLM disregarded the Borough's substantive role as a cooperating agency in the development of the EIS for the Leasing Program. As the Draft SEIS is a continuation of the environmental review and process underlying the EIS for the Leasing Program, and not a new environmental review, the Borough should have still been considered a cooperating agency and should have been treated as such in developing the Draft SEIS. If the Department decided to (hop the Borough as a cooperating agency as unqualified a legally and substantively unsupportable decision-NEPA regulations require that BLM or FWS state the reasons for doing so in the Draft SEIS. I° They did not. Neglecting to conduct any sort of outreach to the Borough, as the impacted local government with special expertise, disregards the Borough's role as a cooperating agency under NEPA, as well as its role as a representative for the people of the North Slope.	The joint lead agencies invited the North Slope Borough to be a cooperating agencies in August 2021. The North Slope Borough was re-invited to be a cooperating agency in December 2023.
Lemke	Deana	Porcupine Caribou Management Board	80334	1	In addition to these points, the PCMB appreciates the substance and intent of Alternative D, item h., on page 2-54, which refers to a very dynamic and adaptive management approach. We consider the inclusion of this requirement to be one of the most progressive and positive developments of the SEIS. To facilitate these collaborative processes, the final SEIS would do well to ensure appropriate communication between regulators and the Porcupine Caribou Technical Committee (PCTC) by outlining clear expectations and roles and responsibilities in this regard and by ensuring that an effective means of enforcement is enabled. Agreement and protocols should be sought directly with the PCTC prior to finalization of the SEIS.	Prior to development, an adaptive management plan to identify research needs, evaluate existing/ongoing management and mitigation efforts, quantify impacts, and identify management changes when necessary for the Porcupine Caribou Herd. The plan would be developed in coordination with the BLM, USFWS, PCTC, and Tribal representatives in accordance with ROP 23.1.
Aullaqsruaq Patkotak	Josiah	North Slope Borough	80351	2	The Department of the Interior's (Department) NEPA regulations provide guidance on which agencies should serve as cooperating agencies, directing that officials responsible for leading the environmental review "must whenever possible consult, coordinate, and cooperate with relevant State, local, and tribal governments and other bureaus and Federal agencies concerning the environmental effects of any Federal action within the jurisdictions or related to the interests of these entities." BLM's NEPA regulations further provide that BLM must invite "eligible government entities" to participate as cooperating agencies when BLM is developing an EIS. The term "eligible government entities" specifically includes local agencies "qualified to participate in the development of an environmental impact statement by virtue of [their] special expertise." By failing to coordinate or even communicate with the Borough in any official capacity regarding the Draft SEIS, BLM has disregarded the Borough's substantive role as a cooperating agency in the development of the EIS for the Leasing Program.	The joint lead agencies invited the North Slope Borough to be a cooperating agencies in August 2021. The North Slope Borough was re-invited to be a cooperating agency in December 2023.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Aullaqsruaq Patkotak	Josiah	North Slope Borough	80351	3	As the Draft SEIS is a continuation of the environmental review and process underlying the EIS for the Leasing Program, and not a new environmental review, the Borough should have been considered a cooperating agency and should have been treated as such in developing the Draft SEIS. If the Department decided to drop the Borough as a cooperating agency as unqualified-a legally and substantively unsupportable decision-NEPA regulations require that BLM state the reasons for doing so in the Draft SEIS. BLM has not done so. Neglecting to conduct any sort of outreach to the Borough, as the impacted local government with special expertise, disregards the Borough's role as a cooperating agency under NEPA, as well as its role as a representative for the people of the North Slope.	The joint lead agencies invited the North Slope Borough to be a cooperating agencies in August 2021. The North Slope Borough was re-invited to be a cooperating agency in December 2023.
Rexford, Sr.	Edward	Native Village of Kaktovik	80353	2	As the only Alaska Native village located inside the Coastal Plain, NVK reluctantly entered into a Memorandum of Understanding with the Bureau of Land Management and the U.S. Fish & Wildlife Service on the Coastal Plain Supplement Environment Impact Statement as a Cooperative Agency (CA) in October 2022. We say reluctantly, because we actively participated in the original 2020 Coastal Plain Oil and Gas Leasing Program Environmental Impact Statement (EIS). Our name is on the document. Since Secretarial Order 3401 was issued in June 2021, NVK has tried to exercise its Tribal government powers to understand what the "alleged legal deficiencies" were in the original EIS (see attached letter dated June 2, 2021). We were not provided with any level of consultation even though we requested it. There was a unilateral effort to ignore us from the beginning of the SEIS that started with Executive Order 13990, issued on January 20, 2021. For an Administration that wants to enhance and strengthen Tribal engagement, this Administration has failed our community at every level. As a Cooperating Agency under the EIS, the Administration failed to consult with us on its decision to initiate the Supplemental EIS and therefore failed in its trust responsibilities regarding our homelands - this decision was not made with our participation. We restated our position during the Public Scoping process for the SEIS (see attached letter submitted on 10.04.2021 to the eplanning.blm.gov site).	Section 4.3 notes the government-to-government meetings that have taken place throughout project development, including meetings with the Native Village of Kaktovik and the Kaktovik Inupiat Corporation.
Rexford, Sr.	Edward	Native Village of Kaktovik	80353	3	NVK has struggled with the current SEIS process that we have found ourselves subjected to as a Cooperating Agency and through our government-to-government (G2G) consultations. In the beginning of our involvement as a Cooperating Agency, we were only able to have limited participation due to the internet latency issues we were experiencing due to our location. We informed the agencies that this was an issue and that we could not actively participate in the video conferencing that was being used as the format for the CA meetings. However, the agencies would continue to set the meetings up as a videoconference, which made our participation meaningless. Our internet issues had a profound impact on our ability to download approximately 51 MB of the three volumes of the Preliminary Draft SEIS (PDSEIS) due to internet outages across the North Slope. Again, this reflects a serious lack of attention and respect to our community since we had been discussing latency issues since the beginning of becoming a CA. By the time we were able to download the 1,163 pages of the DSEIS we were out of time to review the document and requested an extension that was ultimately denied. As the only, real impacted community, of the oil and gas leasing program and the only community that is located within the boundaries of the 1002 Area, we were again thwarted by the agencies that are supposed to be focused on their federal trust responsibilities to us and an Administration that has charged itself with moral obligations of the highest responsibility and trust toward Indian tribes. As a result, we were unable to participate in the first part of the review of the SEIS. In addition to meaningless CA meetings, our G2G consultations were non-productive since all the agencies wanted to focus on was additional inclusion of Indigenous Traditional Ecological Knowledge (ITEK) despite NVK's continued pursuit to understand what the 'alleged' legal deficiencies were with respect to the SEIS. NVK attempted to understand the legalities of the deficiencies since we were part of the process and continued to receive vague responses from the agencies. Inclusion of additional ITEK became the mantra by the agencies throughout our consultation regardless of our comments that we needed to know what they felt was lacking. We offered many examples of our inclusion of ITEK in the original EIS and stated that we felt that our input of ITEK on the FEIS was sufficient and that we wanted to have more meaningful engagement on the topics of the 'alleged legal deficiencies". In fact, in an October 19, 2022 CA meeting, the agencies presented the Framework for the SEIS and that it was necessary to revise the Reasonably Foreseeable Development scenarios to allow for consideration of less than 2,000 acres of surface development, to conduct additional analysis related to foreign greenhouse gas emissions and consider any new information related to subsistence resources, and to reconsider the Lease Stipulation and Required Operating Procedures (including new potential mitigation measures) and consideration of a new range of alternatives (perhaps 1 new alternative).The State of Alaska asked for an explanation of the alleged flaws of the FEIS they were told "to look at the Notice of Intent" and that "today is not the day to work all of this language out and there was still a work to be done." This is another example of how we feel the process was broken and that the CA's were not being treated with respect.	Section 4.3 notes the government-to-government meetings that have taken place throughout project development, including meetings with the Native Village of Kaktovik and the Kaktovik Inupiat Corporation. Secretarial Order 3401 provides information on the legal deficiencies of the 2019 Final EIS. See Section 1.1 for additional information.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Rexford, Sr.	Edward	Native Village of Kaktovik	80353	5	On slide 9 of this presentation, the agencies cite under item 4) "Compliance with section 810 of the Alaska National Interest Lands Conservation Act (ANILCA)." However, when asked what about the ANILCA 810 Consultation was non-compliant NVK did not receive a satisfactory answer and to this day we are still unclear what was meant by this statement. The last slide, slide 17 just states "Indigenous Knowledge Next Steps - Discussion and Reflection... Next Steps....". Again, NVK has been at a loss as to why the pressure to include ITEK in the process.	The joint lead agencies heard concerns from the communities on the incorporation of traditional knowledge into the SEIS and are continuing to learn and modify our processes related to traditional knowledge.
Rexford, Sr.	Edward	Native Village of Kaktovik	80353	6	Another issue that we brought forward throughout the SEIS is that much of the process occurred during our most intense subsistence season, starting in April through where we are presently. We have been overburdened by Secretarial Order 3401 because we have to participate for our tribal members, yet we do not have the financial resources to hire outside contractors to assist us in this process despite the fact that we are recognized as an economically disadvantaged community by the federal government. There are no funds that come with this burden and there is no sensitivity that due to the high cost of store bought food we have to prioritize our time to ensure that we can put away enough of our subsistence foods to make it through the winter. While the agencies seem sympathetic to our lifestyles and needs, which is ITEK, they were not sympathetic enough to provide us with more time for review.	The public comment period was extended from October 23 to November 7, 2023 per requests from cooperating agencies and others.
Rexford, Sr.	Edward	Native Village of Kaktovik	80353	7	Furthermore, the SEIS was released on September 6, 2023, the same day that Secretary Haaland cancelled the leases issued under the 2020 lease sale. We received no consultation on the lease cancellations, suggesting to us that consultation with our community and tribe is not important to this Administration. As we have reviewed the SEIS, we are again frustrated - the SEIS is a 1,447-page (81.5 MB) document that erases us from our homelands. The new Lease Stipulations and Required Operating Procedures are overly burdensome and difficult to understand, and it is clear to us that they in many cases are trying to use impacts to subsistence as a rationale for a lot of the new language. This isn't through our input to the agencies since we haven't really been able to be an active contributor, as previously stated. The new LS and ROPs go beyond the supposed 'alleged legal deficiencies' and create an outcome that does not meet the plain language of the TCJA.	The leases were cancelled in light of serious legal deficiencies identified by the DOI in the underlying record supporting issuance of the leases, thus consultation would not have been helpful to the decision. We invite continued consultation with cooperating agencies on the ultimate decision to be made in the ROD.

U.3.25 Mailing List

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
McCulley	Alice	Tr'ondëk Hwëch'in	80073	12	Please include Alice McCulley, Director of Natural Resources, on future correspondence regarding oil and gas development in ANWR (ahce.mcculley@trondek.CP, 867-993-7100 ext. 240).	This individual has been added to the mailing list.

U.3.26 Marine Mammals

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Durack	Ryan	-	80109	34	The discussion of whales contains one (incorrect(4)) reference to the International Whaling Commission (IWC) established by the International Convention for the Regulation of Whaling. The proposed action alternatives are not anticipated to have population- level impacts on whales or seals in the program area or along the marine transportation route. The International Whaling Commission counts the US, Canada, and Russia among its 88 member countries. It regulates whaling and addresses conservation issues, including bycatch and entanglement, ocean noise, pollution and debris, collision between whales and ships, and sustainable whale watching. There is no similar global commission for pinnipeds; instead they are protected by national laws and bilateral working groups, such as the US- Russia Marine Mammal Working Group. (At 3- 266) (Emphasis added). (4) Canada is not a party to the ICRW and has not been since 1981.	The text has been revised to remove Canada from the list of member countries. Text updated to: "The International Whaling Commission counts the U.S. and Russia among its 88 member countries."
Brisson	Brook	Trustees for Alaska	80131	379	The draft SEIS acknowledged that snow cover is forecasted to be inadequate for ringed seal lair formation in the future and that lethal impacts are possible. Seals need sufficient ice and snow cover not only through the pupping season in March and April but also during pup-rearing and nursing through mid-May and later.(1058) The Arctic is a dynamic area and seals are altering behaviors in response to the changing environment. As sea ice and snow cover are diminishing, the timing of life-cycle activities for seals are changing as well, with basking now sometimes observed before May.(1059) This illustrates the hazards of overreliance on historic temporal data to predict future behavior. Seals will be faced with decreasing snow cover and forced to survive without or with lairs of lesser than historic snow depths in the future.(1060) Similarly, the draft SEIS mentions the increase of landfast ice in the spring during the pupping season but does not accurately assess the impact to changing ice conditions. (1061) The final SEIS should consider climate-driven changes in available seal habitat (for both ringed and bearded seals) and likely behavioral responses as part of the baseline condition and over the program time horizon. (1058) Proposed Rules, Dep't of Commerce, Nat'l Oceanic and Atmospheric Admin, Endangered and Threatened Species; Designation of Critical Habitat for the Arctic Subspecies of the Ringed Seal, 86 Fed. Reg 1452-01, 1,455-56 (Jan. 8, 2021). (1059) Kelly, B. P., et al. 2010. Seasonal home ranges and fidelity of breeding sites among ringed seals. Polar Biology 33:1095-1109. (1060) E.g., Hezel et al., Projected decline in spring snow depth on Arctic sea ice caused by progressively later autumn open ocean freeze-up this century. 2012. Geophysical Research Letters, Vol. 39, L17505. doi:10.1029/2012GL052794. (1061) DSEIS at 3-232.	Bearded and ringed seals are facing reductions in sea ice, lower snow cover, and spatial separation of sea ice resting areas from bottom feeding habitat; this is discussed at length on Draft SEIS page 3-241. The Draft SEIS concludes that according to NMFS's climate model projections, "snow cover is expected to be inadequate for the formation and occupation of lairs during this century over the Alaska stock's entire range (Kelly et al. 2010)" and that "Considering all past, present, and reasonably foreseeable future actions, by far the most significant factor affecting Arctic marine mammals is ongoing climate change from GHG emissions and the resulting loss of sea ice habitat. The effects of climate change would primarily influence the degree and rate of cumulative impacts on polar bears and other marine mammals" Although it is true that over-reliance on historical data can be a problem, historical data and modeled climate change predictions are all the information that is available. Lastly, the Draft SEIS does not state that there is an increase of landfast ice in the spring during pupping season, but it does say "Another result of climate change is earlier breakup of landfast ice and higher drift rates of pack ice (Durner et al. 2017)"
Brisson	Brook	Trustees for Alaska	80131	380	The Quakenbush et al. 2011 report is self-described as a retrospective analysis monitoring program from 1960-2010 which monitors "how parameters that affect [seal] population size and status may vary in time and how current conditions compare with past conditions."(1063) This report predates the dramatic warming effects and rates of climate change seen in the Alaskan Arctic over the past decade. More fundamentally, as noted in previous comments, the conclusion that ocean conditions are "favorable" to ringed seals stands in stark contrast to the fact that they are listed as threatened under the ESA due to unfavorable ocean conditions, i.e., vanishing sea ice. Evidence that seals in one small area are growing faster now than years ago hardly supports a broad assertion that ocean conditions are favorable for seals. (1063) Quakenbush, Citta, and Crawford., The biology of the ringed seal, 1960-2010. 2011. National Marine Fisheries Service. Fairbanks, AK.	Ringed seals were listed under the ESA as threatened, primarily due to predicted long-term threats associated with long-term reductions in sea ice and reduced snowfall. Although no specific population estimate is available, Kelly et al. (2010) suggested that the Arctic subspecies numbers in the millions. The Quakenbush et al. 2011 report does rely on data from 1960-2010 and only from one area. The sentence on Draft SEIS section B.3.5 should be edited to read "There are indications that ocean conditions have been favorable for ringed seals recently: ringed seals near Kaktovik are growing and maturing faster and at a younger age now than 30 years ago (Quakenbush et al. 2011)." There were indications that ocean conditions in some areas were more favorable for ringed seals in the early part of the century than in the 2nd half of the last century, as ringed seals near Kaktovik were growing and maturing faster and at a younger age now than 30 years ago (Quakenbush et al. 2011), however current rates are unknown.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	381	Furthermore, the draft SEIS mischaracterized the NMFS Biological Opinion by stating that ringed seals have demonstrated adaptive capacity to haul out on land or ice that suggests a promising type of resilience for the species. This is inaccurate; the cited document actually states that ringed seals' "broad distribution, ability to undertake long movements, diverse diet, and association with widely varying ice conditions suggest resilience in the face of environmental variability."(1064) The Biological Opinion does not state that ringed seals haulout on land or that they are likely to successfully adapt to the rapid disappearance of sea ice by hauling out on land, as implied in the draft SEIS. Despite our previous comments, BLM and FWS ignored the subsequent line of the Biological Opinion which states, "[h]owever, ringed seals' long generation time and ability to produce only a single pup each year may limit its ability to respond to environmental challenges such as the diminishing ice and snow cover."(1065) The Biological Opinion does not indicate any notable resilience or adaptive ability for ringed seals that would modify the science and findings behind the ringed seals' threatened status under the ESA. The final SEIS should honestly portray the reality of sea ice conditions for ringed seals generally and remove the mischaracterization of, and over-emphasis on, one 2011 study addressing growth rates in one small area. (1064) NMFS Biological Opinion on Oil and Gas Leasing and Exploration Activities in the U.S. Beaufort and Chukchi Seas, Alaska (2013) at 153. (1065) Id.	Although the NMFS Biological Opinion does not state that ringed seals haul out on land, it does clearly state that "broad distribution, ability to undertake long movements, diverse diet, and association with widely varying ice conditions suggest resilience in the face of environmental variability", additionally Lydersen et al. 2017 found that "Land can likely replace sea-ice for many of the ringed seals haul-out needs" although they did note that terrestrial haul-outs may not be a viable solution for pups. The Draft SEIS sentence in question (page 3-241) "The broad distribution, diverse diet, and ability to haul out on land or ice suggest that ringed seals may be resilient to changes in sea ice availability (NMFS 2013), at least in the short term." should be revised to read "the broad distribution, ability to undertake long movements, diverse diet, and association with widely varying ice conditions suggest that ringed seals may be resilient to changes in sea ice availability (NMFS 2013, Lydersen et al. 2017), at least in the short term."
Brisson	Brook	Trustees for Alaska	80131	383	Anthropogenic noise can mask important sound signals for ice seals and affect survivability and reproductive success. Vocalizations, and more specifically, intraspecies cryptic communication strategies are essential life functions for ringed seals that are important for social structure, predator avoidance, and prey detection. Excess background noise, especially of anthropogenic origin, that easily masks intentionally quiet ringed seal vocalizations is of concern to the survivability and reproductive success of the species. Ringed seals are known to vocalize year-round with a substantial increase in calls from March to April (when they rut) suggesting that calling rates increase as the breeding season progresses.(1070) "Masking of signals from conspecifics or environmental cues indicating the presence of prey or predators may result in loss of social cohesion, missed opportunities for feeding, or failure to avoid a predator."(1071) These quiet and short calls have evolved as a result of high predation pressures from polar bears.(1072) The final SEIS must adequately assess impacts to seals from increased noise associated with all stages of oil and gas activities on ringed seals. (1069) Fournet, Michelle E. H. et al. 2021. "Limited Vocal Compensation for Elevated Ambient Noise in Bearded Seals: Implications for an Industrializing Arctic Ocean." Proceedings of the Royal Society B: Biological Sciences 288(1945): 20202712. (1070) Stirling, Ian, Wendy Calvert, and Holly Cleator. 1983. "Underwater Vocalizations as a Tool for Studying the Distribution and Relative Abundance of Wintering Pinnipeds in the High Arctic." ARCTIC 36(3): 262-74. (1071) C. Erbe, C. Reichmuth, K. Cunningham, K. Lucke, R. Dooling, Communication masking in marine mammals: A review and research strategy. Mar. Pollut. Bull. 103, 15-38 (2016). doi: 10.1016/j.marpolbul.2015.12.007; pmid:26707982 (1072) Jones, Joshua M., et al. "Ringed, Bearded, and Ribbon Seal Vocalizations North of Barrow, Alaska: Seasonal Presence and Relationship with Sea Ice." Arctic, vol. 67, no. 2, 2014, pp. 203-222. JSTOR, www.jstor.org/stable/24363701.	The SEIS describes the impact of anthropogenic noise on seals (page 3-252), and details that "Potential noise and disturbance from program-related facilities and activities are likely to affect ringed, spotted, and bearded seals annually while they are in the program area. This could be generated by vessel traffic and coastal facilities, such as the STP during the open-water season. Noise also could be generated by activities in the nearshore coastal or lagoon areas, such as seismic programs, during the ice-covered season; this could affect individual seals by exposing them to noise and lair disturbance. In-air noise would be relatively constant, with wind direction affecting the perception of sounds at haul-out locations and in lairs within a radius of 2.5–3.7 miles from facilities (Kelly et al. 1988). Additional noise could be generated by vessel traffic during barging operations in summer, ice roads in the nearshore environment and mobilization of modular units in winter, and oil spill drills year-round." ROP 10 addresses these impacts: for all action alternatives, ROP 10 would minimize disturbance of seals in lairs by establishing a through-ice sound transmission buffer distance from any open water or ungrounded ice in less than 10 feet of water depth before any seismic surveys. ROP 10 also would limit airborne sound levels of equipment to 120 dB and would ensure that noise lessens to below 100 dB in the vicinity of basking seals. ROP 46 would also minimize noise disturbance of seals by establishing rules of operation, including dedicated PSOs and setting rules of operation in the vicinity of seal haul-outs. The vessel noise and presence would be temporary and limited to affecting a few individuals by eliciting small, behavioral responses. Impacts at the population level for all pinnipeds are not expected. Any specific development plans that have the possibility of lethal take of ringed seals would require an incidental take permit under the MMPA. Additionally, impacts to seals would be reduced by the seasonal timing of barge transport in mid to late summer which is when ringed and bearded seals also tend to occur farther offshore.
Brisson	Brook	Trustees for Alaska	80131	384	While not well documented in scientific literature due to survey and sampling bias, multiple sources of traditional Indigenous Knowledge and local knowledge provide evidence that inshore areas such as river mouths, tributaries, and estuaries are important for ice seals. At a public hearing for proposed ice seal critical habitat on February 26th, 2021, Indigenous commenters from the northern Alaska region offered traditional Indigenous Knowledge indicating that ringed, bearded, and spotted seals use inshore coastal areas during the spring, summer, and fall. The final SEIS should recognize this important information and include it in the discussion about seals' habitat use and identification of important areas.	These statements have been included in Section 3.3.5, Marine Mammals. The Final SEIS has been updated to incorporate additional Indigenous Knowledge from existing data sources as well as new information provided during the public comment period.
Brisson	Brook	Trustees for Alaska	80131	385	Whales in the expansive area impacted by the oil and gas program include bowhead, beluga, humpback, gray, fin, and Pacific right whales. Several of these species are listed under the ESA in addition to being protected under the MMPA. The final SEIS must fully consider impacts to all whales from vessel traffic, oil and hazardous substance spills, noise, and the possibility of ship strikes, in addition to accounting for climate-driven changes in prey availability and habitat use that affect that analysis.	Disturbance and displacement of whales along the marine transport route are discussed in the SEIS Section 3.3.5, as are vessel strikes, and oil and other contaminant spills.

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Brisson	Brook	Trustees for Alaska	80131	386	In its response to comments, BLM stated there is no data that indicate ship strikes north of 60 degrees. The lack of data documenting whale-vessel collisions north of 60 degrees does not indicate that ship strikes would be unlikely to occur throughout the decades-long program, especially given the significant proposed increase of vessel traffic transiting through whale habitat. That additional vessel traffic also poses additive risks of toxic spills and noise pollution to whales. The final SEIS must fully assess and disclose the threat of ship strikes to cetaceans from Dutch Harbor to the Coastal Plain.	Ship strikes along the marine transit route are discussed in the SEIS Section 3.3.5.
Brisson	Brook	Trustees for Alaska	80131	387	The final SEIS also must fully assess the risk of a spill in or near the project area and its impacts on whales. In doing so, BLM should consider detailed comments critiquing the methodology to do so submitted to FWS with regard to the Beaufort Sea Incidental Take Regulation for polar bears and Pacific walrus.(1073) (1073) Lubetkin, Susan C., Critical review of the oil spill risk analysis as presented in the proposed rule concerning incidental take of walruses and polar bears in the Beaufort Sea and adjacent lands, 2021-2026. July 1, 2021.	The risk of an oil spill on whales is discussed in the SEIS Section 3.3.5. The ITR process has been clarified in the SEIS.
Brisson	Brook	Trustees for Alaska	80131	388	The draft SEIS included one paragraph on ocean acidification and its effects on prey availability for marine mammals at large.(1074) This must be expanded in the final SEIS and that analysis should emphasize regional effects of ocean acidification to specific marine species in the area.	Ocean acidification and its effects on prey availability are briefly discussed in the Draft SEIS (see Section 3.3.5, Marine Mammals - Climate Change). The SEIS does acknowledge that ocean acidification could impact invertebrates and decrease prey availability for marine mammals. Text has been edited to further clarify ocean acidification and add the citation AMAP 2013. "Ocean acidification is occurring as a consequence of increasing CO2 in the atmosphere and is predicted to be amplified in the Arctic, resulting in changes in ecosystem processes and increased effects on organisms (AMAP 2013;it is predicted to be amplified in the Arctic, resulting in changes in ecosystem processes and increased effects on organisms (Meltotte 2013). "
Brisson	Brook	Trustees for Alaska	80131	389	The Arctic Ocean is the most susceptible region to ocean acidification and associated ecosystem impacts with the Pacific-Arctic continental shelves being especially vulnerable.(1075) In addition, new studies conclude that there is greater regional anthropogenic carbon storage and ocean acidification than previously suggested. Elevated rates of acidification in the Arctic Ocean in tandem with the rapid physical and biogeochemical changes will intensify and hasten climate change-associated impacts at the ecosystem level.(1076) Additionally, a more acidic ocean creates conditions for a noisier ocean that will affect marine mammals.(1077) The final SEIS must thoroughly discuss ocean acidification in regards to marine mammals in the program area including seals, walrus, sea lions, and whales. (1075) Mathis, J.T., J.N. Cross, W. Evans, and S.C. Doney. 2015. "Ocean acidification in the surface waters of the Pacific-Arctic boundary regions." Oceanography 28(2):122-135, http://dx.doi.org/10.5670/oceanog.2015.36 . (1076) Terhaar, Jens, Lester Kwiatkowski, and Laurent Bopp. 2020. "Emergent Constraint on Arctic Ocean Acidification in the Twenty-First Century." Nature 582(7812): 379-83. (1077) Hester, Keith C., Edward T. Peltzer, William J. Kirkwood, and Peter G. Brewer. 2008. "Unanticipated Consequences of Ocean Acidification: A Noisier Ocean at Lower PH." Geophysical Research Letters 35(19): L19601.	Ocean acidification and its effects on prey availability are briefly discussed in the SEIS (see Section 3.3.5, Marine Mammals - Climate Change). The EIS does acknowledge that ocean acidification could impact invertebrates and decrease prey availability for marine mammals.
Heslep	Alison	-	80164	26	#12 Ch/Sec/Sub-sec 3.3.5 Title Marine Mammals Comment(s) The current section for 3.3.5 does not discuss Indigenous whaling, which is important for subsistence and harvesting activities for Inuvialuit along the SBS [Southern Beaufort Sea](Bowhead and Beluga whales). Whale hunting, particularly Beluga whale hunting, is extremely important to the Inuvialuit people near the SBS. All communities in the Inuvialuit Settlement Region hunt whales, and the Inuvialuit people possess detailed traditional knowledge and cultural connections regarding the whales they hunt(Waugh et al., 2018). Whale parts are an important component of Inuvialuit art, particularly carvings and whale skin (Zschogner, 2022). Worden et al. (2020) use oral history and interviews to demonstrate that the beluga harvest is a central part of Inuvialuit culture both for subsistence and commercial sale. Any potential impact on whales, or access to whaling camps, would thus be cumulative, potentially having a further adverse effect on dependent communities. As such, it is important to emphasize the potential transboundary impacts of the Coastal Plain Leasing Program on whales, and those dependent on them. Recommendation(s) The GNWT recommends adding a component to this section referencing Inuvialuit hunters. Change: "Bowhead and beluga whales represent the strongest connectivity among the Pacific Arctic nations." To: "Bowhead and beluga whales represent the strongest connectivity among the Pacific Arctic nations, and they are an important source of subsistence and income for Indigenous hunters in Alaska and Canada." Additionally, on page no. "3-303" after the word "polar bears" add: "Bowhead whales, beluga whales "and other marine mammals".	Text revised as suggested. Edit 1 (Section B.3.5, Whales and Seals): "Bowhead and beluga whales represent the strongest connectivity among the Pacific Arctic nations, and they are an important source of subsistence and income for Indigenous hunters in Alaska and Canada." Edit 2 (Section B.4.3, Subsistence Uses and Resources - Transboundary Subsistence Uses, 1st paragraph.: "Other transboundary subsistence uses are the Inuvialuit harvests of polar bears, bowhead whales, beluga whales, and other marine mammals and Inuvialuit and Gwich'in uses of waterfowl and fish, which may pass through the program area and be harvested elsewhere."

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	17	Page 3-234, Marine Mammals, Bowhead Whales, 4th paragraph: "Historically, they have largely aggregated in the Canadian Beaufort Sea and Barrow Canyon (US) in deep water, where upwellings concentrate prey species, although some whales remain in the eastern Chukchi and western Beaufort Seas (Ireland et al. 2009; Quakenbush et al. 2010; Clarke et al. 2011)." Comment: This is not entirely accurate. There is little evidence to consider Barrow Canyon a core-use area in summer. Furthermore, the core-use area near Barrow is not in deep water. It is on the shelf and the prey is aggregated on the shelf. Bowheads aggregate in this area from August through October. For accurate information on the Barrow core-use area, see Ashjian et al. (2010). For the wider summer distribution, see Citta et al. (2021) and Olnes (2020). - Ashjian et al. 2010. Climate variability, oceanography, bowhead whale distribution and Inupiat subsistence whaling near Barrow Alaska. Arctic 63(2):179-194. - Citta, J.J., L.T. Quakenbush, and J.C. George. 2021. Distribution and behavior of Bering-Beaufort-Chukchi bowhead whales as inferred by telemetry. Pages 31-56 In: Thewissen, J.G.M. and J.C. George (Eds.), The Bowhead Whale, Elsevier Publishing. ISBN: 978-0-12-818969-6 - Olnes, J., J.J. Citta, L.T. Quakenbush, J.C. Geroge, L. Harwood, E. Lea, and M.P. Heide-Jorgensen. 2020. Use of the Alaskan Beaufort Sea by bowhead whales (Balaena mysticetus) tagged with satellite transmitters, 2006-2018. Arctic. https://doi.org/10.14430/arctic70865	The sentence in section 3.4.3 "Historically, they have largely aggregated in the Canadian Beaufort Sea and Barrow Canyon (US) in deep water, where upwellings concentrate prey species, although some whales remain in the eastern Chukchi and western Beaufort Seas (Ireland et al. 2009; Quakenbush et al. 2010; Clarke et al. 2011)." Should be edited to read "Historically, they have largely aggregated in the Canadian Beaufort Sea and the western Beaufort Sea shelf near Barrow, likely due to predictable and abundant food resources, although some whales remain in the eastern Chukchi and western Beaufort Seas (Ireland et al. 2009; Ashjian et al. 2010; Quakenbush et al. 2010; Clarke et al. 2011; Olnes et al. 2020; Citta et al. 2021)." Ashjian et al. 2010. Climate variability, oceanography, bowhead whale distribution and Inupiat subsistence whaling near Barrow Alaska. Arctic 63(2):179-194. Olnes, J., J.J. Citta, L.T. Quakenbush, J.C. Geroge, L. Harwood, E. Lea, and M.P. Heide-Jorgensen. 2020. Use of the Alaskan Beaufort Sea by bowhead whales (Balaena mysticetus) tagged with satellite transmitters, 2006-2018. Arctic. https://doi.org/10.14430/arctic70865 Citta, J.J., L.T. Quakenbush, and J.C. George. 2021. Distribution and behavior of Bering-Beaufort-Chukchi bowhead whales as inferred by telemetry. Pages 31-56 In: Thewissen, J.G.M. and J.C. George (Eds.), The Bowhead Whale, Elsevier Publishing. ISBN: 978-0-12-818969-6 –
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	18	Page 3-234, Marine Mammals, Bowhead Whale, 5th paragraph: "Fall migrating whales typically reach Cross Island in September and October, although some might arrive as early as late August (BOEM 2018b) and continue on to Point Barrow." Comment: This section implies that bowheads are just passing through the area on their way to Russia. The fall migration is a feeding migration and it occurs between August-November. Whales may stop for extended periods to feed in shelfwaters, including those in the project area. Some of the highest densities of bowhead whales occur in shelfwaters of the Beaufort Sea in Fall. The text should be amended to clarify that bowhead whales are not just passing through on their way to Point Barrow or Russia. - Citta, J.J., L.T. Quakenbush, and J.C. George. 2021. Distribution and behavior of Bering-Beaufort-Chukchi bowhead whales as inferred by telemetry. Pages 31-56 In: Thewissen, J.G.M. and J.C. George (Eds.), The Bowhead Whale, Elsevier Publishing. ISBN: 978-0-12-818969-6 - Okkonen, S.R., J.T. Clarke, and R.A. Potter. 2018. Relationships among high river discharges, upwelling events, and bowhead whale occurrence in the central Alaskan Beaufort Sea. Deep Sea Research II, 152:195-202. https://doi.org/10.1016/j.dsr2.2016.11.015 - Olnes, J., J.J. Citta, L.T. Quakenbush, J.C. Geroge, L. Harwood, E. Lea, and M.P. Heide-Jorgensen. 2020. Use of the Alaskan Beaufort Sea by bowhead whales (Balaena mysticetus) tagged with satellite transmitters, 2006-2018. Arctic. https://doi.org/10.14430/arctic70865	Text revised as suggested. "Fall migrating whales typically reach Cross Island in September and October, although some may arrive as early as late August (BOEM 2018b) and continue on to Point Barrow, <u>where they spend additional time feeding along the continental shelf</u> (Olnes et al. 2020)."
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	19	Page 3-235, Marine Mammals, Bowhead Whales, 1st sentence: "the most recent population estimate is 27,133 individuals (95 percent CI: 14,119-32,407; Givens et al. 2018)." Comment: The estimate provided by Givens et al. 2018 (from data collected in 2011) is 21,391 not 27,133. Regardless, this estimate was never used for management. There were two estimates from data collected in 2019. The ice-based effort yielded 14,025 (CV=0.228) and an aerial survey, also in 2019, yielded 17,175 (95% CI: 10,793-27,330). The aerial survey estimate should be used, as the ice-based estimate was biased low due to poor ice conditions. - Ferguson, M.C., D.L. Miller, J.T. Clarke, A.A. Brower, A.L. Willoughby, and A.D. Rotrock. 2022. Spatial modeling, parameter uncertainty, and precision of density estimates from line-transect surveys: a case study with Western Arctic bowhead whales. Paper submitted to the International Whaling Commission Scientific Committee, SC/68D/ASI/01.	Text revised as suggested (Draft SEIS section 3.4.3): "The Western Arctic population of bowhead whales increased at a rate of 3.2-3.7 percent from 1978 to 2011 (Schweder et al. 2009; Givens et al. 2013), and the most recent population estimate is 17,175 individuals (95 percent CI: 10,793-27,330; Ferguson 2022).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	20	Page 3-235, Marine Mammals, Other Whales, 2nd paragraph: "The most recent population estimate for this stock of 26,960 individuals..." Comment: ENP gray whales have been undergoing an "Unusual Mortality Event" and have declined significantly since 2016. In 2016, there were over 26,000 whales; however, the estimated total abundance of gray whales during the 2021/2022 southbound migration was 16,650 (95% Credible Interval: 15,170 - 18,335, CV = 0.0485, 20th-percentile = 16,050). - Eguchi, Tomoharu, Aimee R. Lang, and David W. Weller. 2022. Abundance and migratory phenology of eastern North Pacific gray whales 2021/2022. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SWFSC-668. https://doi.org/10.25923/x88y-8p07	Text revised as suggested. "The most recent population estimate (2022) for this stock of <u>16,650</u> individuals is based on systematic counts of gray whales migrating south along the central California coast (Eguchi et al. 2022). This population count represents a <u>38.2 percent decline since the survey conducted in 2016 (Durban et al. 2017), reflecting what NOAA believes was an unusual mortality event that may have peaked in 2019 (Eguchi et al. 2022).</u>" Eguchi, Tomoharu, Aimee R. Lang, and David W. Weller. 2022. Abundance and migratory phenology of eastern North Pacific gray whales 2021/2022. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SWFSC-668. https://doi.org/10.25923/x88y-8p07.
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	21	Page 3-236, Marine Mammals, Other Whales, 1st paragraph: "While no gray whales have been observed within 5 nautical miles of the program area, gray whales have been sighted six times in the Canadian Beaufort Sea (Rugh and Fraker 1981; Brower et al. 2015; Clark et al. 2015; Yuka et al. 2016)." Comment: Please see below for an additional source on this topic. - Quakenbush, L.T., R.J. Small, and J.J. Citta. 2013. Satellite tracking of bowhead whales: movements and analysis from 2006 to 2012. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Alaska Outer Continental Shelf Region, Anchorage, AK. OCS Study BOEM 2013-01110. 56 pp.	The suggested report was reviewed as requested and the report provides additional support of gray whales using the Beaufort Sea with one tagged whale reaching Atkinson Point (Canada). The reference has been incorporated.
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	22	Page 3-240, Marine Mammals, Climate Change Comment: Lots of recent work has studied the movements and ecology of bowhead whales relative to a warming climate. Bowhead whales overwinter farther north in years with light sea ice. Furthermore, body condition of post-weaning whales appears to be lower in years characterized by abnormally low winter sea ice. - Citta, J.J., Breed, G.A., Okonnen, S.R., et al. 2023. Shifts in bowhead whale distribution, behavior, and condition following rapid sea ice change in the Bering Sea. Continental Shelf Research. https://doi.or2/10.1016/j.csr.2023.104959 - Insely, S.J., W.D. Halliday, X. Mouy, and N. Diogou. 2021. Bowhead whales overwinter in the Amundsen Gulf and Eastern Beaufort Sea. R. Soc. Open Sci. 8: 202268. https://doi.org/10.1098/rsos.202268 - Szesciorka, A.R., and K.M. Stafford. 2023. Sea ice directs changes in bowhead whale phenology through the Bering Strait. Movement Ecology 11(8). https://doi.org/10.1186/s40462-023-00374-5	Bowhead whale movements appear to be changing in response to changes in ocean conditions. This is addressed in the SEIS. However, the following sentence in section 3.3.5 "Bowhead whales appear to be in better body condition in years of light ice cover (George et al. 2015) and the Western Arctic stock is so far adapting to change in ice cover, as demonstrated by their consistent population increase (Givens et al. 2013; Muto et al. 2018); however, the long-term effect of reductions of sea ice on bowhead populations is not known (George et al. 2015)." should be reworded as follows to include recent work. "Bowhead whales were shown to be in better body condition in years of light ice cover (George et al. 2015), although post-weaning whales had lower body condition after years with abnormally low winter sea-ice concentrations (Citta et al. 2023). It appears that the Western Arctic stock is so far adapting to changes in ice cover, as demonstrated by their consistent population increase (Givens et al. 2013; Muto et al. 2018), and shift to overwintering farther north in years with light sea ice (Insley et al. 2021; Szesciorka and Stafford 2023); however, the long-term effect of reductions of sea ice on bowhead populations is not known (George et al. 2015)." Citta, J.J., Breed, G.A., Okonnen, S.R., et al. 2023. Shifts in bowhead whale distribution, behavior, and condition following rapid sea ice change in the Bering Sea. Continental Shelf Research. https://doi.or2/10.1016/j.csr.2023.104959 Insley, S.J., W.D. Halliday, X. Mouy, and N. Diogou. 2021. Bowhead whales overwinter in the Amundsen Gulf and Eastern Beaufort Sea. R. Soc. Open Sci. 8: 202268. https://doi.org/10.1098/rsos.202268 - Szesciorka, A.R., and K.M. Stafford. 2023. Sea ice directs changes in bowhead whale phenology through the Bering Strait. Movement Ecology 11(8). https://doi.org/10.1186/s40462-023-00374-5
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	23	Page 3-240, Marine Mammals, Climate Change, last paragraph concerning beluga prey and feeding depths Comment: The information on "Arctic cod being most prevalent at 656-984 feet and those being the depth belugas dive to" is overstated. Belugas often dive to those depths, but also target fronts and stratified layers throughout the water column. Furtheiniore, the size of cod that belugas feed upon may not be the most common size caught in research trawls. Last, there is evidence to suggest that beluga diet may be shifting away from Arctic cod and towards capelin (see the Choy paper). We have observed belugas feeding upon capelin nearshore at Utqiagvik. - Choy, E.S., C. Giraldo, B. Rosenberg, et al. 2020. Variation in the diet of beluga whales in response to changes in prey availability: insights on changes in the Beaufort Sea ecosystem. Marine Ecology Progress Series 647:195-210. - Citta, J.J., S.R. Okkonen, R.S. Suydam, L. Quakenbush, A.L. Bryan, and J. Olnes. 2020. Beluga dive behavior relative to fronts and stratified layers near Point Barrow, Alaska. Deep Sea Research I. https://doi.org/10.1016/j.dsr.2020.103392 - Stafford, K.M., J.J. Citta, S.R. Okkonen, and R.S. Suydam. 2016. Wind-dependent beluga whale dive behavior in Barrow Canyon, Alaska. Deep Sea Research I 118:57-65. https://doi.org/10.1016/j.dsr.2016.10.006	The comment about Arctic cod prevalence and diving depths of belugas is inconsequential. However, potential shifts in beluga diet should be included. The sentence "Recent evidence for declining growth, body condition, and blubber thickness suggests that ecosystem changes may be affecting belugas through reduced availability or quality of prey, primarily ice-associated Arctic cod (Harwood et al. 2014, 2015a)." in section 3.3.5 should be revised to read "Recent evidence for declining growth, body condition, and blubber thickness, as well as increased consumption of capelin, suggests that ecosystem changes may be affecting belugas through reduced availability or quality of prey, primarily ice-associated Arctic cod (Harwood et al. 2014, 2015a; Choy et al. 2020)." Choy, E.S., C. Giraldo, B. Rosenberg, et al. 2020. Variation in the diet of beluga whales in response to changes in prey availability: insights on changes in the Beaufort Sea ecosystem. Marine Ecology Progress Series 647:195-210

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Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	24	Page 3-241, Marine Mammals, Climate Change, 3rd paragraph: "Most belugas, however, prefer feeding in deep water near the shelf break, and are capable of diving to 2,950 feet in the Canadian Basin (Hauser et al. 2015); Miller et al. (2010) recorded the maximum dive depth for a killer whale at 833 feet." Comment: It is unlikely that we know how deep belugas or killer whales can actually dive. The data Hauser examined is collated to the nearest 100 meters. What is reported is a single dive of an adult male into the 1000 m depth category, which means one beluga actually dove to somewhere between 901 and 1000 m (i.e., somewhere between 2952 to 3280 feet). Furthermore, it appears that cows with calves may spend more time in shelfwaters than adult males, probably because calves cannot dive as deep as adults (see the Loseto et al. paper below). Regardless, it is unknown if belugas can out-dive killer whales or use diving as a strategy to escape them. It is unlikely it would work for cows with calves. - Loseto, L., P. Richard, G. Stern, J. On, and S. Ferguson. 2006. Segregation of Beaufort Sea belugas whales during the open-water season. Canadian Journal of Zoology 84(12):1743-1751.	Text revised to: "Losses in sea ice could allow marine predators, such as killer whales, to penetrate into the Beaufort Sea for longer distances, increasing the risks of predation on belugas (O'Corry-Crowe et al. 2016). Most belugas, however, prefer feeding in deep water near the shelf break, and are capable of diving to 2,950 feet in the Canadian Basin (Hauser et al. 2015); Miller et al. (2010) recorded the maximum dive depth for a killer whale at 833 feet. <u>Loseto et al. (2006) noted that open-water habitat near mainland shore may be selected by females with calves, possibly to reduce predation risk from polar bears or being entrapped in ice. Additionally, shallow open-water may provide protection from killer whales because the larger whales' mobility would be hampered in shallow waters (Loseto et al. 2006).</u> "
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	26	Page 3-253, Marine Mammals, Whales and Seals, last paragraph: "Whales often show tolerance to vessel activity, but they may react at long distances if they are confined by ice or shallow water or were previously harassed by vessel operators (Richardson et al. 1995)." Comment: Richardson's studies have shown that bowheads are most tolerant (perhaps too tolerant) to ship traffic when they are feeding. Richardson et al. (1984) showed that feeding bowheads will even allow active seismic surveys within 3 km if they are feeding. This tolerance while they are feeding is probably what makes them more susceptible to ship strikes than belugas. The 2020 Halliday et al. (2020) and Richardson and Malme (1993) papers (below) summarize what we know about bowhead whales and the effects of noise. Arctic belugas appear to be much less tolerant to noise than bowhead whales. Belugas with satellite tags begin to show behavioral responses to ship noise as far away as 20 miles and the response gets much stronger as the vessel nears. It is likely that belugas actively avoid ships long before observers on ships notice them (see the Martin et al. 2023 paper below). It is also likely that beluga behavior goes back to normal not long after a ship passes. - Halliday, W.D., M.K. Pine, J.J. Citta, L. Harwood, et al. 2020. Potential exposure of beluga and bowhead whales to underwater noise from ship traffic in the Beaufort and Chukchi Seas. Ocean and Coastal Management. https://doi.org/10.1016/j.ocecoaman.2020.105473 - Martin, M.J., Halliday, W.D., J.J. Citta, et al. 2023. Exposure and behavioral responses of tagged bowhead whales (Balaena mysticetus) to vessels in the Pacific Arctic. Arctic Science 9:3 https://doi.org/10.1139/as-2022-0052 - Martin, M.J., W.D. Halliday, L. Storrie, J.J. Citta, et al. 2023. Exposure and behavioral responses of tagged beluga whales (Delphinapterus leucas) to ships in the Pacific Arctic. Marine Mammal Science. 39(2): 387-421. https://doi.org/10.1111/mms.12978 - Richardson, W.J., Malme, C.I., 1993. Man-made noise and behavioral responses. In: Burns, J.J., Montague, J.J., Cowles, C.J. (Eds.), The Bowhead Whale. Special Publication of the Society for Marine Mammals 2. Society for Marine Mammals, pp. 631-700. - Richardson, J.W., B. Wursig, and C.R. Greene, Jr. 1985. Reactions of bowhead whales, Balaena mysticetus, to seismic exploration in the Canadian Beaufort Sea. Journal of the Acoustical Society of America 79(4):1117-1128.	This sentence in question is now followed by "Bowhead whales may allow seismic surveys as close as 3km likely increasing their risk of a ship strike, while belugas are more sensitive and may show a behavioral response to ship noise as far away as 32 km (Halliday et al. 2020; Martin et al. 2023a, 2023b)." Halliday, W.D., M.K. Pine, J.J. Citta, L. Harwood, et al. 2020. Potential exposure of beluga and bowhead whales to underwater noise from ship traffic in the Beaufort and Chukchi Seas. Ocean and Coastal Management. https://doi.org/10.1016/j.ocecoaman.2020.105473. Martin, M.J., Halliday, W.D., J.J. Citta, et al. 2023a. Exposure and behavioral responses of tagged bowhead whales (Balaena mysticetus) to vessels in the Pacific Arctic. Arctic Science 9:3 https://doi.org/10.1139/as-2022-0052. Martin, M.J., W.D. Halliday, L. Storrie, J.J. Citta, et al. 2023b. Exposure and behavioral responses of tagged beluga whales (Delphinapterus leucas) to ships in the Pacific Arctic. Marine Mammal Science. 39(2): 387-421. https://doi.org/10.1111/mms.12978.

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Grannemann	Ken	-	62117	4	Lack of synthesis and connection between the original EIS and the draft Supplemental: The Supplemental materials expand considerably from what was provided in the original EIS which is commendable; however, the large volume of information is portrayed largely as a laundry list of independent appendices. Little or nothing is done to draw all this information together and synthesize it in a manner that provides unbiased conclusions readily usable by decision-makers.	References to appendixes have been added to the resource sections in Chapter 3, where possible, to better direct readers to supporting information.
Grannemann	Ken	-	62117	5	Lack of context: Neither the original EIS or supplemental materials give good context that compares how much of similar areas have been exploited for oil and gas versus those that have not. The overwhelming majority of Alaska's coastal plain has already been exploited for oil and gas. The Arctic National Wildlife Refuge is the only remaining North Slope area that has not been exploited for oil and gas.	This context is considered in the cumulative impacts sections for each resource, which take into account projects and activities located outside of the program area (see Appendix G). Cumulative impacts sections have been revised to include context of impacts within the cumulative affects area, as appropriate for each resource.
Moriarty	Kara	Alaska Oil & Gas Association	79980	3	As we stated in prior comments submitted in response to BLM's August 4, 2021, Notice of Intent to Prepare a Supplemental Environmental Impact Statement for the Coastal Plain Oil and Gas Leasing Program, Alaska ("2021 NOI"),(2) the preparation of this Draft SEIS is unnecessary and jeopardizes Coastal Plain energy development, which is critical to Alaska's economy and our country's national security. The oil and natural gas industry has a 50-year track record of safe and responsible energy development on the North Slope of Alaska while respecting and often supporting reasonable stipulations to protect the Alaskan environment and wildlife. We look forward to continuing to partner with Alaskan communities and policymakers to leverage innovative technologies and best practices to safely develop oil and gas resources on Alaska's North Slope under the congressionally-mandated Coastal Plain oil and gas leasing program. (2) 86 Fed. Reg. 41,989 (Aug. 4, 2021).	The development of an SEIS was determined necessary as noted in Secretarial Order 3401.
Moriarty	Kara	Alaska Oil & Gas Association	79980	15	To avoid the risk that an agency might use "the power to correct inadvertent ministerial errors . . . as a guise for changing previous decisions,"(51) a change in agency position must include reasoned explanations for the change.(52) DOI has not provided a reasoned explanation for its conclusion that the leases issued under the Coastal Plain Oil and Gas Leasing Program were invalid at inception or that cancellation was warranted. (51) American Trucking Ass'ns, Inc. v. Frisco Transp. Co., 358 U.S. 133, 146 (1958) (citing United States v. Seatrain Lines, Inc., 329 U.S. 424 (1947)). (52) Encino Motorcars, LLC v. Navarro, 579 U.S. 211, 221 (2016). DOI purported to justify cancellation of the leases on the same grounds it has given for undertaking a supplemental EIS: deficiencies in its prior NEPA analysis in the 2019 FEIS and 2020 ROD. Specifically, in the Draft SEIS, BLM has listed three alleged "legal deficiencies in the underlying record supporting the leases": (1) insufficient analysis under NEPA, including failure to adequately analyze a reasonable range of alternatives in the Final EIS; (2) failure in the 2020 ROD to properly interpret Section 20001 of the Tax Act; and (3) the failure of the Final EIS to either give a quantitative estimate of the downstream greenhouse gas ("GHG") emissions that would result from changes in consumption of oil abroad due to the foreseeable production of Coastal Plain oil, or sufficiently explain why the BLM could not give a quantitative estimate and provide a more thorough discussion of how changes in foreign oil consumption might change the GHG emissions analysis.(53) (53) Id. The Associations have previously articulated our view that there are no "legal deficiencies" in the 2019 Final EIS or 2020 ROD to be addressed in a Supplemental EIS.(54) Secretary's Order 3401 identifies no specific "deficiencies" but instead only vaguely refers to "insufficient analysis" under NEPA, including "failure to adequately analyze a reasonable range of alternatives" and a disagreement over the interpretation of the Tax Act. The Order does not adequately explain why the alternatives analyzed are unreasonable, why BLM's Tax Act interpretation was wrong, or otherwise say why the analysis was "insufficient." (54) API and AOGA 2021 NOI Comments at 8-9. Although it is well settled that vague claims of error "may not be used as a guise for changing previous decisions because the wisdom of those decisions appears doubtful in the light of changing policies,"(55) it appears that is precisely what the BLM has done. This administration has made clear it disagrees with the policies underlying the Tax Act.(56) But the "power to correct inadvertent ministerial errors may not be used as a guise for changing previous decisions because the wisdom of those decisions appears doubtful in the light of changing policies."(57) (55) Am. Trucking Ass'ns v. Frisco Transp. Co., 358 U.S. 133, 146 (1958). (56) See Executive Order 13990; see also September 6, 2023 comments of Secretary Haaland as reported by National Public Radio at https://www.npr.org/2023/09/06/1197945859/anwr-alaska-drilling-oil-gas-leases-environment-energy-climate-change#:~:text=The%20administration%20is%20required%20to,lease%20sale%20by%20December%202024 . (57) American Trucking Ass'ns, Inc. v. Frisco Transp. Co., 358 U.S. 133, 146 (1958) (citing United States v. Seatrain Lines, Inc., 329 U.S. 424 (1947)).	The leases were cancelled in light of serious legal deficiencies identified by the DOI in the underlying record supporting issuance of the leases. The decision to cancel the existing leases within the Coastal Plain area is outside the scope of the SEIS.
Moriarty	Kara	Alaska Oil & Gas Association	79980	16	Instead, DOI's development and approval of the Final EIS is "entitled to a presumption of regularity."(58) DOI has also repeatedly defended the Final EIS in response to lawsuits filed in the U.S. District Court for the District of Alaska and defeated motions for preliminary injunction in all cases.(59) To date, no court has identified any deficiencies in the Final EIS. Accordingly, DOI's actions here appear to be the epitome of arbitrary and capricious decision making that is contrary to law. (58) 40 C.F.R. § 1505(2)(b); Citizens to Pres. Overton Park, Inc. v. Volpe, 401 U.S. 402, 415 (1971). (59) See Gwich'in Steering Committee v. Bernhardt, Case Nos. 20-cv-00204, 20-cv-00205, 20-cv-00223, 2021 WL 46703 (D. Alaska Jan. 5, 2021). (BLM may not lawfully change the position it has taken in litigation without acknowledging and explaining the change in position).	The deficiencies in the Final EIS are noted in Secretarial Order 3401 as well as the subsequent lease suspension letters (see Section 1.1 in the SEIS).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Moriarty	Kara	Alaska Oil & Gas Association	79980	17	Even if BLM were to be justified in undertaking a Supplemental EIS to address the alleged deficiencies in the NEPA review process, BLM has not articulated a sufficient (let alone rational) basis for cancelling the leases issued pursuant to the January 6, 2021, lease sale. Vacating the leases under these circumstances is an abuse of the Department's discretion. None of the issues identified by BLM are so egregious to warrant cancellation of the leases and effectively undo the first lease sale mandated by the Tax Act. The "deficiencies" DOI has associated with the original NEPA review process all relate to future actions that will undergo NEPA review according to the plain terms of the 2019 Final EIS and 2020 ROD. Indeed, as BLM has stated, there is no activity that can currently proceed under the Coastal Plain Oil and Gas Leasing Program without additional NEPA review as provided by the Final EIS: Before it conducts the second and each subsequent lease sale, the BLM will evaluate the adequacy of the EIS in light of new information and circumstances to determine whether additional analysis is needed in order to comply with NEPA. Future on-the-ground actions requiring BLM approval, including potential exploration and development proposals, would require further NEPA analysis based on the site-specific proposal. Potential applicants would be subject to the terms of the lease; however, the BLM Authorized Officer may require additional site specific terms and conditions before authorizing any oil and gas activity based on the project level NEPA analysis.(60) (60) Final EIS at 1-5-1-6. Because every alleged "deficiency" DOI has identified will be addressed in the future and vacating the leases violates the Tax Act, it was an abuse of discretion to cancel them. This is especially true because the Tax Act clearly required issuance of the leases, and any purported deficiencies are procedural in nature and easily addressed through further NEPA review.61 Because NEPA is a procedural statute, agencies often address any errors through additional process, rather than vacating agency actions.62 Even if procedural errors occurred, given the Tax Act's mandate to complete a lease sale by December 22, 2021, DOI should have corrected those errors and applied its corrections to future activities under the leases. Cancelling the leases was grossly disproportionate to the magnitude of any alleged procedural deficiency and places BLM firmly in violation of its obligations under the Tax Act. (61) See e.g., Douglas Timbers Operators v. Salazar, 774 F. Supp. 2d 245, 259 (D.D.C. 2011) ("the possibility that BLM's failure to consult under the ESA was unlawful does not render the ROD 'unlawful'"). (62) See, e.g., Clayton W. Williams Jr., 103 IBLA 192, 203 (1988); N. Cheyenne Tribe v. Lujan, 804 F. Supp. 1281, 1285 (D. Mont. 1991); see also Douglas Timber Operators v. Salazar, 774 F. Supp. 2d 245 (D.D.C. 2011); Bd. of Cnty. Comm'r's of Pitkin Cnty., 186 IBLA 288, 293-95 (2015), reconsideration denied, 187 IBLA 328 (2016); S. Utah Wilderness All., 194 IBLA 333, 334, 337 (2019). And, court courts have found that they have discretion about whether to vacate an action or not. E.g., Solar Energy Indus. Ass'n v. Fed. Energy Reg. Comm'n, 80 F.4th 956, 997 (9th Cir. 2023) ("When equity demands, we may leave the action in place on remand while the agency reconsiders the action or cures a procedural defect.") (citation omitted).	The development of an SEIS was determined necessary as noted in Secretarial Order 3401. The deficiencies in the Final EIS are noted in Secretarial Order 3401 as well as the subsequent lease suspension letters (see Section 1.1 in the SEIS).
Proescholdt	Kevin	Wilderness Watch	80104	6	The DSEIS still has serious flaws in spite of the improvements over the earlier EIS. These include but are not limited to: -Failure to include raised pipelines, snow or ice roads, or private lands on the Coastal Plain in surface disturbance in the 2,000-acre maximum under the Tax Act. Further, it appears the acreage number could eventually be exceeded under the action alternatives, as development progresses, rather than a hard limit. -Failure to address factors such as BLM authority over any right-of-way, limiting seismic exploration to leased areas after a decision, and directional drilling outside the Coastal Plain. These factors also affect the range of alternatives analyzed in the DSEIS, which currently lead toward less protection of the Coastal Plain than would occur under a reasonable range of alternatives. -An inadequate analysis, lacking specific detail, of cumulative impacts to all resources. For example, a fifty-year time frame is too short to account for full reclamation (which is doubtful in any case) and ongoing monitoring. Another example is excluding oil and gas development on state or private lands. -The lack of analyzing the effectiveness of mitigation measures. For example, NSO stipulations can be waived. -An inadequate site-specific analysis of impacts. Leasing is the decision stage so the analysis should occur in the leasing document.The DSEIS fails to include the original three purposes when the1960 Arctic Range was designated. They are wildlife, wilderness, and recreation. The DSEIS also fails to show how these purposes will be protected, or even whether they can be, under the action alternatives.	The 2,000-acre facility limit is detailed in the SEIS, Section 1.10.1. The BLM interprets the provision on surface development in Section 20001(c)(3) of PL 115-97 as limiting to 2,000 the total number of surface acres of all federal land across the Coastal Plain, regardless of whether such land is leased, which may be covered by production and support facilities. Once 2,000 acres is reached, no additional disturbance would be allowed, regardless of reclamation of previously disturbed areas. Cumulative impacts have been updated as appropriate. The temporal aspect of the cumulative effects analyses can vary by resources and is considered in defining the analysis area. Requiring mitigation measures in any alternative is decided at the time of the ROD by the DOI decision-maker. Site-specific analysis is not possible at the program level. Site-specific analyses, including those associated with infrastructure in support of oil and gas development, can more realistically be provided when the BLM receives an application to permit such infrastructure. The SEIS details the five current purposes of the Arctic Refuge in Section 1.5.1.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	2	In the 1987 Report to Congress, DOI stated that the Coastal Plain "area is the most biologically productive part of the Arctic Refuge for wildlife and is the center of wildlife activity."(31) Despite the many flaws with the analysis in the Report, it nevertheless concluded that oil and gas production would likely have major effects on the Porcupine Caribou Herd and muskoxen. Specifically, with regards to caribou, those effects include "widespread, long-term change in habitat availability or quality which would likely modify natural abundance or distribution of species."(32) The Report also found that full or even limited leasing would have major impacts on water resources, subsistence for residents of Kaktovik, and recreation, wilderness, and aesthetics.(33) BLM previously failed to explain their contrary findings in the final EIS. Where the agencies' findings in this draft SEIS differ from DOI's findings in the legislative EIS (LEIS), the agencies should explain the basis for this difference. Despite the impacts predicted in the LEIS, the Secretary of the Interior recommended leasing the entire Coastal Plain area.(34) For decades, Congress and the President declined to do so. (31) U.S. Dep't of the Interior, Arctic National Wildlife Refuge, Alaska, Coastal Plain Resource Assessment, Report and Recommendation to the Congress of the United States and Final Legislative Environmental Impact Statement at 46 (Apr. 1987) [hereinafter LEIS]. (32) LEIS at vii, 123, 187. (33) LEIS at 166. (34) LEIS at vii, 188-89, 192. The agencies must recognize and describe this history in the final SEIS to ensure that they are fully considering the purposes and resources of the Coastal Plain, as well as accurately acknowledging the public support for its protection. Accounting for these elements is an essential step in addressing the many legal deficiencies identified in the 2020 Leasing Program, including violations of the Tax Act, NEPA, and ANILCA, and ensuring that any program adopted fully complies with the law.(35) (35) See also Secretarial Order No. 3401, Comprehensive Analysis and Temporary Halt on all Activities in the Arctic National Wildlife Refuge Relating to the Coastal Plain Oil and Gas Leasing Program at 1 (June 1, 2021).	A comparison of the changes between the 2019 Final EIS and the SEIS is outside the scope of the project. The history of the program, including discussion of the 2019 Final EIS and 2020 ROD, along with subsequent Secretarial Orders, are discussed in Sections 1.1 and 1.2.
Brisson	Brook	Trustees for Alaska	80131	3	The draft SEIS acknowledges that FWS will continue to managing the Arctic Refuge under the existing CCP and any amendments.(46) Groups previously asked BLM and FWS to explain how FWS's management under the CCP would be accounted for in the Leasing Program and whether an amendment to the CCP was required. We encourage FWS to provide additional detail on this question in the final SEIS, particularly how FWS will account for inconsistencies between any final leasing program and the CCP, including how the oil and gas program impacts current Refuge management. (46) DSEIS at ES-1.	The USFWS CCP (2015) may be revised to reflect all purposes of the Arctic Refuge. All action alternatives are designed to meet the purpose and need, and to account for all purposes of the Arctic National Wildlife Refuge.
Brisson	Brook	Trustees for Alaska	80131	14	It is unclear what NEPA regulations BLM and FWS are applying to this SEIS process. As discussed in more detail in our scoping comments,(144) and consistent with Secretarial Order No. 3399, BLM and FWS should apply the 1978 Council on Environmental Quality (CEQ) NEPA regulations and the Department of the Interior's 2008 NEPA regulations at 43 C.F.R. part 46 to the SEIS because it represents an ongoing activity begun before the effective date of the 2020 CEQ NEPA regulations. While CEQ has finalized its "Phase 1" NEPA rule restoring certain elements of the 1978 regulations(145) and issued a proposed "Phase 2" rule that will, if finalized, make further changes to the NEPA regulations, including restoring additional elements of the 1978 regulations, retaining certain elements of the 2020 regulations, and implementing the Fiscal Responsibility Act's amendments to NEPA,(146) these actions should not impact this particular SEIS process. Thus, the introductory language in Chapter 2 of the draft SEIS suggesting that CEQ's ongoing regulatory actions are relevant to this process is misleading, confusing, and should be removed from the final SEIS.(147) No other sections of the draft SEIS suggest application of the 2020 regulations, as amended by the 2022 Phase 1 rule. The final SEIS should clarify that BLM and FWS are applying the 1978 regulations, as well as the 2008 departmental regulations that remain in full force and effect. (145) 87 Fed. Reg. 23453 (April 20, 2022). (146) 88 Fed. Reg. 49924 (July 31, 2023). (147) DSEIS at 2-1 (first paragraph of section 2.1).	The NEPA regulatory information included in the introduction of Chapter 2 is intended to provide context for the current definition of a reasonable range of alternatives, which provides the framework for alternative development. As noted in Chapter 2, the recently revised regulations reverted to the 1978 definition of a reasonable range of alternatives. While the current NEPA regulations apply, some aspects of the 1978 regulations remain.
Von Seggern	Dan	Washington State Attorney General's Office	80273	3	Despite the somewhat lower local environmental impacts of alternative D, the DSEIS' analysis shows that adopting this alternative (as with the other action alternatives) would lead to significant increases in global GHG emissions and would undermine efforts to address climate change. Accordingly, the States strongly urge adoption of the no-action alternative. At a minimum, the Agencies should adopt alternative D. If alternative D is selected, the Agencies should include in their ROD a clear explanation of the consequences to the global climate that would flow from the Leasing Program.	Alternative A, the no action, would not meet the purpose and need of the action, which is the BLM's implementation of Section 20001(c)(1) of PL 115-97, including the requirement to hold two lease sales and to permit associated post-lease oil and gas activities. It is carried forward for analysis to provide a baseline for comparing impacts under the action alternatives, as required by the CEQ NEPA regulations. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Von Seggern	Dan	Washington State Attorney General's Office	80273	13	The 2023 DSEIS clearly demonstrates that the only alternative consistent with the critical need and our efforts to combat climate change is the no-action alternative, alternative A. The States strongly urge that the Agencies adopt alternative A. If the Agencies decide to select an action alternative, the States strongly urge that the most protective alternative possible be adopted. Inclusion of reasonable alternatives is the heart of NEPA review, and an agency must "discuss each alternative considered in detail, including the proposed action, so that reviewers may evaluate their comparative merits." (37) The analysis must include the no-action alternative, and must discuss the reasons for eliminating any alternatives that were rejected for detailed study.(38) An EIS must "inform[] decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts . . .".(39) The 2019 FEIS unlawfully limited the scope of alternatives considered in several respects. (37) 40 C.F.R. § 1502.14(b) (38) 40 C.F.R. § 1502.14(a), (c); See also Border Power Plant Working Grp. v. Dep't of Energy, 260 F. Supp. 2d 997, 1030 (S.D. Cal. 2003) (quoting Idaho Conservation League v. Mumma, 956 F.2d 1508, 1520 (9th Cir.1992) (an "agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action")); (39) Klamath-Siskiyou Wildlands Center v. BLM, 387 F.3d 989, 993 (9th Cir. 2004) (quoting former 40 CFR 1502.1; the current regulation is in substance identical ("inform decision makers and the public of reasonable alternatives which would avoid or minimize adverse impacts")). The States' 2021 Scoping Comment letter noted that none of the action alternatives evaluated in the 2019 FEIS would sufficiently avoid, minimize, and mitigate environmental harms to assure compatibility with ANILCA and the Refuge Act.(40) The States therefore asked that BLM develop a new, minimally impactful action alternative, supported by robust and sound legal and technical analysis, and only select it as the preferred alternative if fully compatible with the Arctic Refuge's conservation purposes. The 2023 DSEIS presents a more thorough analysis and a more meaningful range of action alternatives than the prior NEPA analysis. This analysis demonstrates, however, that any Lease Program would have unacceptable impacts on the Coastal Plain and the global climate. Even the least impactful alternative (alternative D), is incompatible with the United States' commitment to reduce GHG emissions, and the States' critical efforts to address climate change. (40) States' Scoping Comments.	Alternative A, the no action, would not meet the purpose and need of the action, which is the BLM's implementation of Section 20001(c)(1) of PL 115-97, including the requirement to hold two lease sales and to permit associated post-lease oil and gas activities. It is carried forward for analysis to provide a baseline for comparing impacts under the action alternatives, as required by the CEQ NEPA regulations. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	3	The Coastal Plain Leasing Program and Requisite Lease Sales are Not a "Major Federal Action" subject to NEPA. The National Environmental Policy Act (NEPA) is implemented through regulations promulgated by the Council on Environmental Quality (CEQ) as well as agency-specific regulations and policies. The Fiscal Responsibility Act (FRA), Pub. Law 118-5, made significant and pertinent amendments to NEPA, including thresholds and the definition of "major federal action." The CEQ regulations in place in 2021 when BLM issued its NOI for the SEIS also include this definition. The effective date of the FRA NEPA amendments was June 3, 2023 when the statute was signed into law, as acknowledged by the CEQ's publication in the Federal Register on July 31, 2023. 88 Fed. Reg. 49924. In the ANWR SEIS, issued on September 6, 2023, BLM failed to apply the appropriate NEPA threshold to the Coastal Plain Leasing Program. BLM failed to apply the CEQ regulations in place at the time the supplemental NEPA process was initiated in 2021. It also failed to apply the FRA amendments to NEPA that went into effect in June 2023, before BLM published the SEIS. Under the 2020 CEQ Regulations, a "major federal action" requiring environmental review does not include, "[a]ctivities or decisions that are non-discretionary and made in accordance with the agency's statutory authority." 40 CFR 1508.1(q)(1)(ii); see 42 U.S.C. § 4332 for the agencies' statutory authority. Effective June 2023, the FRA reconfirmed this point by providing that the definition of a major federal action does not include "activities or decisions that are nondiscretionary and made in accordance with the agency's statutory authority." § 111(10)(B)(vii) (codified at 42 U.S.C. § 4336e(10)(B)(vii)). Further, the FRA states that an agency is not required to prepare an environmental document when the result of the threshold determination is that "the proposed agency action is a nondiscretionary action with respect to which such agency does not have authority to take environmental factors into consideration in determining whether to take the proposed action." § 106(a)(4) (codified at 42 U.S.C. § 4336(a)(4)). The regulations that implement NEPA, which were revised in 2020 and 2022, state that in assessing whether NEPA applies, "Federal agencies should determine ... whether compliance with NEPA would clearly and fundamentally conflict with the requirements of another statute." 40 CFR 1501.1. Congress strengthened this regulatory requirement by amending the NEPA statute to state that "[a]n agency is not required to prepare an environmental document with respect to a proposed agency action if ... the preparation of such document would clearly and fundamentally conflict with the requirements of another provision of law." FRA § 106(a) (codified at 42 U.S.C. § 4336(a)(3)). This statutory reform was effective in June of 2023, before this SEIS was issued, so the SEIS should have been issued in compliance with these statutory changes. The SEIS clearly appears not to have considered the new reforms.	Major federal action includes any action with effects that may be major and subject to Federal control and responsibility. While the development of the oil and gas program is non-discretionary, defining the areas available for leasing as well as the leasing stipulations and ROPs that would apply to those areas are subject to BLM control and responsibility. Therefore, the development of an oil and gas program is a major federal action per NEPA and amendments to NEPA in the FRA. The SEIS does comply with amendments to NEPA per the FRA.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	4	The 2017 Tax Cuts and Jobs Act (TCJA) required the Secretary of the Interior to offer the initial lease sale not later than December 22, 2021. The DOI has spent six years trying to comply with NEPA since the passage of the TCJA. The end result is that the Department has effectively not leased any of the Coastal Plain. Therefore, BLM, by attempting to comply with NEPA, has created a conflict with the TCJA. The Department was without discretion in creating a leasing program and holding two lease sales, with certain parameters prescribed by Congress. The Secretary's decision to sua sponte direct further environmental review violated current regulation in 2021 and now violates the basic parameters of NEPA as amended by the FRA.(8) (8) Judge Gleason in her August 7, 2023 decision affirmed DOI's decision to pause the program while DOI undertook further review. AIDEA v. Biden, 2023 WL 502155 (D. Alaska). AIDEA notes that it disagrees with that decision, and the decision remains subject to appeal.	The decision to cancel the existing leases within the Coastal Plain 1002 area and/or set aside approximately 13 million acres within the NPR-A is outside the scope of the SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	5	The SEIS states that the decisions to be made are a) which tracts to offer for leases, and b) the terms and conditions to be applied to the leases. SEIS p. 1-2. It goes on to state, "The decisions evaluated in this Leasing EIS and its ROD would not authorize any on-the-ground activity associated with the exploration or development of oil and gas resources in the Coastal Plain." The TCJA requires BLM to "lease those areas that have the highest potential for the discovery of hydrocarbons." § 20001(c)(1)(B)(i)(II). Consequently, the SEIS should have been focused on and be limited to those areas defined in the act that have the highest potential for the discovery of hydrocarbons. The purpose of the lease program is only to allow for exploration of the ANWR leasing area to determine if further development should occur. Moreover, the terms and conditions should focus on and be limited to activities that do not involve the impacts of production and should address the environmental impacts of exploration. The subsequent site-specific ground disturbing exploration activities fall within the umbrella of this EIS and can be authorized by a lesser follow-up NEPA document such as an EA / FONSI, without having to wait for another full blown EIS. Our comments below include examples of impact analyses contained within the SEIS that are currently not relevant to reaching these two decisions, and more importantly that confuse the decision-making process for these decisions by incorporating potential adverse environmental impacts not pertinent to these two decisions. As a result, much of the analysis in the SEIS is surplusage.	Each action alternative includes high hydrocarbon potential lands. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. As noted in Section 1.3 of the SEIS, the purpose of the oil and gas program is to allow for the leasing, development, production, and transportation of oil and gas. The program is not limited to exploration and therefore, the incorporation of conditions related to all phases of development and analysis of impacts is appropriate.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	6	The Congressional mandate in the TCJA relies on and is supported by the U.S. Geological Survey's (USGS) conclusion that there is a 95 percent or greater probability of there being at least 4.3 billion barrels of technically recoverable oil in the Coastal Plan, and that 3.4 billion of those barrels (more than 75 percent) are in the western part of the Coastal Plain called the "undeformed part." USGS Arctic National Wildlife Refuge, 1002 Area, Petroleum Assessment, 1998. There are a substantial number of wells that found oil just to the west of the western boundary of the Coastal Plain, near the parts of the Coastal Plain leased by AIDEA in January 2021. As discussed in greater detail below, by defining a decision that is inappropriately broad and consequently creating an overly broad purpose and need, alternatives that are loaded with constraints on production, and analyses based on activities that are not ripe for decision, BLM has failed to follow the Congressional mandate in the unambiguous TCJA to "lease those areas that have the highest potential for the discovery of hydrocarbons." Supra. But ultimately the language in section 321(10)(b)(7) (codified at 42 USC 4336(e)) of the NEPA statutes provides that the term "Major Federal Action" required to trigger NEPA does not include any "activities or decisions that are non-discretionary and made in accordance with the agency's statutory authority."	While all alternatives include areas of high hydrocarbon potential, Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain while also focusing on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Major federal action includes any action with effects that may be major and subject to Federal control and responsibility. While the development of the oil and gas program is non-discretionary, defining the areas available for leasing as well as the leasing stipulations and ROPs that would apply to those areas are subject to BLM control and responsibility.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	7	With respect to the ANWR leases, the preparation of an SEIS does not excuse BLM from its duty under the 2017 TCJA to hold a lease sale and issue leases by December 2021, TCJA §20001(c). Particularly now that BLM has cancelled AIDEA's leases, the further delay caused by BLM still continuing to work on an SEIS while the leases required by the TJCA to be in place by December 2021 are not in place as of November 2023 reflects a fundamental conflict between NEPA and "the requirement of another provision of law," the TCJA.	The BLM conducted its first lease sale in the Coastal Plain on January 6, 2021. A total of nine tracts were leased in this first lease sale. This sale met the requirements of the Section 20001(c)(1) of PL 115-97 .
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	8	There is no basis for a NEPA environmental document to address any issues other than mitigation, because the TCJA mandates the oil and gas program occur and mandates the issuances of leases and necessary rights-of-way. TJCA § 20001. Legal changes both by statute and by Supreme Court decision obviate any need for a SEIS, especially when the scope of the proposed exploration has not changed since the issuance of the ROD; commercial oil production will be authorized only after separate NEPA analysis devoted to that subject and only after successful exploration; and there is no connected action between the two potential events. The SEIS repeatedly states that when BLM is presented with proposals for exploration or development, those decisions by BLM for specific authorizations will also be subject to project specific analysis, including compliance with NEPA and other laws. This is a common programmatic approach to NEPA compliance. For example, BOEM does similar programmatic analyses at this stage in determining lease areas for wind farm developments. If an interested party wants to do subsequent exploration, BOEM conducts another NEPA review. 30 CFR 585.	While the development of the oil and gas program is non-discretionary, defining the areas available for leasing as well as the terms and conditions that would apply to those leases are subject to BLM control and responsibility
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	9	By including in the SEIS issues and impacts that are currently not ripe for the two stated decisions, there is the strong possibility that potential adverse impacts not ripe for consideration will affect the decision-making process. In a decision by the U.S. District Court for the District of Alaska, Chilkat Indian Village of Klukwan, et. al. v. BLM, 399 F.Supp.3d 888 (2019), Judge Timothy Burgess stated: "...the sole issue of whether NEPA requires consideration of future impacts from potential mine development as part of the environmental review for exploration activities." Id. at 915 (emphasis added). This is essentially the same issue presented by the standards and analysis applied in the pending ANWR SEIS. The Court noted that CEQ regulations implementing NEPA require that the agency consider connected actions if "the two actions '[c]annot or will not proceed unless other actions are taken previously or simultaneously.'" Id at 916, citing 40 C.F.R. § 1508.25(a)(ii). The Court noted that the Ninth Circuit "appl[ies] an 'independent utility' test to determine whether multiple actions are so connected as to mandate consideration in a single EIS." Id at 916-7. Such is not the case with the consideration of an ANWR Leasing Program. Leasing simply does not equate to development. And as is explained latter in these comments, the leases actually provide for another layer of environmental review before disturbances of the leasehold interest occur. The configuration of the action alternatives is also affected by the ripeness question. For example, is there a supportable rationale for including alternative well numbers in order to make the two decisions?	The decision to be made is described in Section 1.4 of the SEIS. The potential impacts of those decisions include the consideration of all phases of an oil and gas program, to include leasing, development, production and transportation. The RFD provides a framework for considering impacts during these phases, including well numbers by alternative.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	10	BLM did not start the SEIS until 2021. Section 1506.13 of the 2020 regulations states: "The effective date of these regulations in this subchapter apply to any NEPA process begun after September 14, 2020." The conclusion by DOI is that an SEIS for the ANWR Leasing Program is needed is premature, since it failed to follow the changes in the law and implement in the SEIS the requirements of the regulations. The TCJA mandates that DOI issue the Coastal Plain oil and gas leases, so there was no opportunity for DOI to avoid the alleged greenhouse gas effects through declining to issue leases, and so any asserted shortcoming in NEPA analysis regarding that issue is not an agency error. Department of Transportation v. Public Citizen, 541 U.S.752, 776-78 (2005); see 42 U.S.C. § 4336(a)(4). Like the proposed action at the heart of Public Citizen (opening the Mexican border to long-haul trucks and buses), in this situation, Congress passed legislation that the President signed, directing that there shall be an ANWR Leasing Program. In clear words, an ANWR Leasing Program will determine future mitigation and exploration requirements SHOULD that occur. The SEIS should address the impacts of the leasing program, not exploration or development impacts should they occur. The SEIS on the leasing program should note the leasing program will not produce any greenhouse gases.	Section 20001(c)(1) of PL 115-97 requires the establishment of an oil and gas program on the Coastal Plain for the leasing, development, production, and transportation of oil and gas. The program is not limited to leasing and therefore, the SEIS accounts for potential impacts at each phase of the program. While GHG emissions would not occur with leasing, they would during development, production, and transportation of oil and gas. The establishment of the oil and gas program is considered a major federal action subject to NEPA, as enacted in 1970 and subsequent updates and changes to NEPA regulations.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	25	AIDEA contends in the ANWR SEIS that the agency, in developing the mitigation options and the proposed alternatives, overreaches the issues that need to be addressed to consider the ANWR leasing as required by the Tax Cuts and Jobs Act (P.L. 115-97). The purpose of the lease program is to allow for exploration of the ANWR leasing area to determine IF further development should occur. The leases by their express terms do not allow for exploration without further NEPA review. The express terms in the AIDEA leases that set out contractual rights between the parties are not referenced or discussed in the SEIS. No ground disturbing activity is allowed without further NEPA review. Should further development be determined to be appropriate, that development will be subject to a new and different Environmental Impact Statement. In effect, there is, as recognized by the Ninth Circuit, an independent utility for just the exploration allowed under the initial leasing program.	Section 20001 of PL 115-97 requires the establishment of an oil and gas program on the Coastal Plain for the leasing, development, production, and transportation of oil and gas. The program is not limited to leasing and therefore, considers impacts from each phase of development. Lease terms are not included in the SEIS as they are finalized when the tracts are leased.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	38	The ANWR SEIS essentially is an exercise in unreasonable decision making. It applies NEPA to a simple leasing program which is not a major federal action. It wrongly ignores the express lease terms that would require NEPA analysis for future activities. It relies on an alternatives analysis that is confusing and contrary to CEQ regulations. It wrongly assumes, contrary to the applicable case law, that exploration and any future production are connected actions and its assumptions about the amount of oil production are not supported by any empirical data. The SEIS's impacts are based on assumed oil production levels that are not based on any referenced data, and that are speculative and capricious.	Section 20001 of PL 115-97 requires the establishment of an oil and gas program on the Coastal Plain for the leasing, development, production, and transportation of oil and gas. The program is not limited to leasing and therefore, considers impacts from each phase of development. Impacts, including those related to production levels, are based on the best available science. The development of an oil and gas program on the Coastal Plain is considered a major federal action subject to NEPA. While the development of the oil and gas program is non-discretionary, defining the areas available for leasing as well as the terms and conditions that would apply to those leases are subject to BLM control and responsibility.
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	2	We firmly believe that the final environmental impact statement (EIS) and record of decision (ROD) for the Program does not contain the alleged "deficiencies" BLM refers to and accurately reflect Congress' intent in passing that legislation. Given our substantial interest in ensuring that BLM administers a competitive oil and gas leasing program in the Coastal Plain of ANWR (1002 Area) pursuant to section 20001 of the Tax Cuts and Jobs Act (the Tax Act), we ultimately urge BLM to abandon this effort and use its administrative powers to re-adopt Alternative "B" - BLM's "preferred alternative" - from the final EIS and ROD in 2020 and reinstate the cancelled leases.	Deficiencies in the 2019 Final EIS were identified by the Secretary of Interior and therefore, necessitate preparation of a SEIS.
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	17	The draft SEIS remains a non-solution to a non-problem-a waste of Department resources and taxpayer dollars. The Department fails to articulate a clear need for the draft SEIS and further fails to outline deficiencies in the Program that supposedly justify its existence. The Department's proposals are inconsistent with both congressional intent and the plain text of the Tax Act, seeking to turn the Program on its head from competitive to deliberately unattractive leasing. The Department pays no attention to the impacts those changes would have on Alaskans, especially the Alaska Natives who live on the North Slope who stand to be most negatively impacted by them. The Department has not ever bothered to engage in meaningful consultation with those Alaskans. All of this cements the notion that decisions on the SEIS have already been made at DOI Headquarters in Washington, D.C., with Alaska BLM and FWS left to go through the motions to try to explain and justify them. Suffice to say, this is not how Americans expect the Department to implement the laws that Congress passes, nor is it how we expect the Department to engage with Alaskans. We therefore insist that BLM rescind the draft SEIS and reinstate the final EIS and ROD that your career staff prepared in 2020, selecting BLM's same "Preferred Alternative B" for the responsible development of a small portion of the non-wilderness 1002 Area.	Details on the deficiencies in the 2019 Final EIS are provided in Chapter 1, Section 1.1, page 1-1 and are referenced directly from Secretarial Order 3401 and the lease suspension letters issued by the Principal Deputy Assistance Secretary for Land and Mineral Management in June 2021. Potential impacts, including subsistence sociocultural, economic and environmental justice are detailed in Chapter 3 and public outreach and tribal consultation efforts are detailed in Chapter 4.

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Freitas	Benjamin	World Wildlife Fund	79957	7	The purpose of NEPA is twofold - 1. to ensure that federal officials fully take into account the environmental consequences of a federal action before reaching major decisions and 2. to involve the public, Congress, and other agencies in considering those consequences.(9) Central to the agency's decision-making and NEPA compliance is the analysis of alternatives(10) and the agency's use of high quality data and accurate scientific analysis.(11) NEPA requires that agencies take a "hard look" at all foreseeable environmental consequences.(12) (9) See Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 349 (1989); Baltimore Gas and Elec. Co. v. NRDC, Inc., 462 U.S. 87, 97 (1983). (10) 40 C.F.R. § 1502.14. Throughout this letter, WWF is utilizing the NEPA regulations in place prior to new NEPA regulations promulgated in July 2020. The agencies' SEIS cannot rely on new NEPA regulations promulgated in July 2020. (11) The environmental information made available to the public "must be of high quality." 40 C.F.R. § 1500.1(b). NEPA therefore requires "[a]ccurate scientific analysis," which is "essential to implementing NEPA." Id. Analyses contained in an EIS must ensure "scientific integrity." 40 C.F.R. § 1502.24. (12) See Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989). As Secretary Haaland set out in her Secretarial Order, in its 2019 Final EIS BLM failed to consider a range of reasonable alternatives and also failed to acknowledge and address the considerable missing information, data, and analysis.(13) In its Draft SEIS, the agencies have revised the alternatives analysis and updated its analysis of impacts. While WWF is encouraged by the agencies' efforts, more can be done for the agencies to analyze a range of more protective alternatives and utilize robust data and accurate scientific analysis. (13) Secretarial Order 3401 (June 1, 2021).	In response to public input requesting additional protections, the BLM and USFWS has developed Alternative D2, a sub-alternative of D, which provides increased protections for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.

U.3.28 Notice of Appeal or Litigation

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	1	However, since AIDEA lawfully obtained oil leases on the Coastal Plain, DOI has imposed moratoriums on all oil and gas leasing and directed further NEPA review of programs already addressed by records of decision issued by the prior administration, including the Coastal Plain Program. Then DOI unlawfully canceled AIDEA's leases in an announcement by the Secretary of Interior and in a written order signed by then DOI Deputy Secretary Beaudreau. A September 6, 2023, Press Release issued by DOI stated that: "In the Arctic Refuge, Secretary of the Interior Deb Haaland has authorized the cancellation of the remaining seven oil and gas leases issued by the previous administration in the Coastal Plain. The leases were suspended in June 2021 following the issuance of Secretary's Order (S.O.) 3401(4), which identified 'multiple legal deficiencies in the underlying record supporting the leases.'". At a press conference on September 6, 2023, Secretary Haaland stated that: "With today's action, no one will have rights to drill in one of the most sensitive landscapes on Earth."(5) On September 6, 2023, Deputy Secretary Tommy Beaudreau sent AIDEA a decision notifying AIDEA that its lease had been cancelled. See, Exhibit B. (4) https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3401-comprehensive-analysis-andtemporary-halt-on-all-activities-in-the-arctic-national-wildlife-refuge-relating-to-the-coastal-plain-oiland-gas-leasing-program.pdf (5) A media report by National Public Radio containing this quotation is available at: https://www.npr.org/2023/09/06/1197945859/anwr-alaska-drilling-oil-gas-leasesenvironmentenergyclimatechange In AIDEA's view, the cancellation of its ANWR leases it had lawfully acquired was illegal, and AIDEA is pursuing its legal remedies. AIDEA's ability to develop the leases into oil production and provide project financing for that development as a lease owner has been illegally ended. Further, in the Lease Cancellation Decision, DOI stated that it is considering taking acreage that had been included in AIDEA's leases and offering it to bidders in a lease sale in 2024. This subjects AIDEA to the risk that other bidders will obtain the acreage for which AIDEA bid, paid, and was subsequently awarded. Other bidders might outbid AIDEA for the most economically valuable western portion of the Coastal Plain. Further, Defendants are subjecting AIDEA to the risk that they will not offer to any bidder the acreage that AIDEA bid upon and was awarded in the January 2021 lease sale.	The leases were cancelled in light of serious legal deficiencies identified by the DOI in the underlying record supporting issuance of the leases. The decision to cancel the existing leases within the Coastal Plain area is outside the scope of the SEIS.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	2	On the day, September 6, 2023, DOI cancelled the leases, BLM issued a Supplemental Environmental Impact Statement for the Coastal Plain Oil and Gas Leasing Program (SEIS).(6) (6) https://eplanning.blm.gov/public_projects/2015144/200492847/20085216/250091398/Coastal_Plain_Draft_SEIS_Vol1_508.pdf . Despite the leases' cancellation, AIDEA, in conformity with the ongoing NEPA SEIS process (DOI-BLM-AK-0000-2021-0006-EIS), now submits the following comments on the SEIS for the Coastal Plain Leasing Program, initiated at the Secretary of Interior's direction in 2021 and published in August 2023. By doing so, AIDEA is not agreeing that an SEIS is needed or appropriate under current law. Further, AIDEA again repeats that the cancellation of its leases by BLM and DOI was unlawful.(7) (7) In recently-filed litigation before the U.S. District Court for the District for The District of Columbia (Case BO: 1:23-cv-03126) (filed Oct. 18, 2023), AIDEA challenges the cancellation of its leases prior to the completion of the supplemental NEPA process on several grounds. Specifically, AIDEA asserts: (1) that the leases were unquestionably legal, because Congress directed DOI to issue them; (2) DOI's decision to cancel the leases on the basis of issues collateral to the non-discretionary issuance of the leases was an abuse of discretion; (3) the "legal errors" identified in the initial NEPA process did not require the termination of AIDEA's leases; (4) the termination of AIDEA's leases prior to the completion of the supplemental NEPA process violated AIDEA's due process rights; and (5) the cancellation of the leases violated the Naval Petroleum Reserves Production Act ("NPRPA"), because the leases, believed to contain valuable oil and gas deposits, could not be cancelled absent a court order. A copy of the complaint is attached as Exhibit C and is hereby incorporated by reference into these comments.	The leases were cancelled in light of serious legal deficiencies identified by the DOI in the underlying record supporting issuance of the leases. The decision to cancel the existing leases within the Coastal Plain area is outside the scope of the SEIS.

U.3.29 Other Laws and International Agreements

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Kingett	Kathie	-	22504	1	I oppose all oil and gas drilling in the Arctic Refuge. Congress and President Biden need to work together to repeal the "Tax Act" provision that opened the refuge to oil and gas leasing. The whole Arctic Refuge needs Wilderness designation. With drilling, Polar Bears cannot survive, Caribou cannot migrate and survive, and the native Gwich'in Nation would not have both an important food source and cultural identity. This native Nation should have a voice in all future plans. The draft SEIS fails to truthfully explain what would be lost by opening the Arctic Refuge to oil leasing and development. The quality of both the coastal plain and adjacent designated Wilderness lands in the Arctic Refuge would be destroyed by opening the Arctic Refuge to that development. In that climate, recovery would be extremely slow.	Impacts of the proposed leasing program on specific resources are detailed in Chapter 3 of the SEIS and include potential impacts on caribou, polar bears, subsistence, and sociocultural systems, among others.
Corcoran	JC	-	22531	1	I firmly oppose any drilling activities for oil and gas in the Arctic Refuge. To ensure lasting protection for this region, it's essential for President Biden to collaborate with Congress to repeal the "Tax Act" provision that opened the Refuge to oil and gas leasing. Additionally, permanent safeguards through Wilderness designation for the entire 19.2 million-acre Arctic Refuge should be established. The oil leasing and development proposed would irreparably harm the natural and untouched quality of both the coastal plain and the nearby designated Wilderness lands within the Arctic Refuge. The Draft SEIS fails to accurately convey the extent of what would be lost by permitting oil leasing and development in the Arctic Refuge. I express gratitude towards the Biden administration for canceling the existing leases in the Arctic Refuge. However, I believe that the protection of onshore denning habitat for polar bears is inadequate. The Draft SEIS demonstrates inconsistency in safeguarding polar bear denning habitat, leaving some areas vulnerable, particularly for denning sows and cubs. Enhanced protections are necessary, especially for the Canning River delta and the Camden Bay area.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears.
Hodges	Karen	-	22567	1	I am grateful to the Biden adminstration for canceling exiting oil leasing in the Arctic Refuge, however, it is important that lasting protection be insured by President Biden's working with Congress to repeal the "Tax Act" provision that opened the Refuge to oil and gas leasing, and to pass permanent protections through Wilderness designation for the entire 19.2 million-acre Arctic Refuge. The Refuge and preservation of its wild quality is crucial for environmental reasons, to protect biodiversity threatened by habitat loss and climate change, and also because the area is sacred to the Gwich'in Nation, whose vital interests the Draft SEIS fails to acknowledge. How can the survival of Gwich'in culture be sacrificed just to create profits for the oil and gas industry? Our government has a responsibility not to let that happen and to close loopholes existing even under the most protective alternative put forth in the draft SEIS (broad and undefined "no surface occupancy" stipulations). Just one specific environmental value that must not be overlooked is the importance of maintaining conditions that allow the Porcupine caribou herd to adapt its migration routes to conditions changing with global warming. Pulling out to the big picture, oil and gas extraction itself contributes to the climate emergency. that our best science tells us represents an existential threat to peoples around the globe. The bottom line is that the coastal plain draft SEIS is completely inadequate and must not be accepted as is.	Repealing PL 115-97 is beyond the scope of this project as it would need to occur at the Congressional level. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
Snook	Clifford	-	22747	1	I oppose all oil and gas drilling in the Arctic Refuge. Congress: Repeal the "Tax Act" provision that opened the Refuge to oil and gas leasing. Designate the 19.2 million acre refuge as Wilderness. Pass permanent protections for the Arctic Refuge.	Repealing PL 115-97 is beyond the scope of this project as it would need to occur at the Congressional level. The USFWS 2015 CCP ROD recommended wilderness designation by Congress and that USFWS has been managing the Coastal Plain to maintain wilderness characteristics. An act of Congress is needed to formally designate a wilderness area.
Fadden	Delmar	-	22821	1	I believe there should be NO oil or gas drilling in the Arctic Refuge and support efforts to repeal the Tax Act provisions that mandate leasing. The draft EIS needs to go further and clearly state the environmental consequences of drilling in this fragile landscape. The EIS needs to provide additional protection for: onshore polar bear denning habitat, the indigenous population, and the native caribou. The EIS also must anticipate the probable changes resulting from climate change in all the alternative assessments.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. The potential impacts of each alternative, including those related to climate change and development of oil and gas, are detailed in Chapter 3. Site-specific analyses of impacts can more realistically be provided when the BLM receives an application to permit oil and gas development.
Tullius	Michael	-	22848	1	All oil and gas drilling in the Arctic Refuge should be banned. And to ensure lasting protection from drilling President Biden should work with Congress to repeal the provision of the Tax Act that opened the Refuge to oil and gas leasing, and to pass permanent protections through Wilderness designation for the entire 19.2-million-acre Arctic Refuge.	Repealing PL 115-97 would need to occur at the Congressional level. The USFWS 2015 CCP ROD recommended wilderness designation by Congress and that USFWS has been managing the Coastal Plain to maintain wilderness characteristics. An act of Congress is needed to formally designate a wilderness area.

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Roberts	Paul	-	23359	1	I am opposed to all oil and gas drilling the the Arctic Refuge because of the inevitable destructive impact such exploitation would have on the arctic ecosystem and the people who reside there, particularly on the coastal plain but also in the mountainous portions of the refuge. The draft SEIS is deficient in failing to fully account for the costs of petroleum development on the plain, particularly the loss of the wild quality of the coastal plain and adjacent designated Wilderness lands. The plan also lacks sufficient protection for denning habitat for polar bears, particularly in the Canning River Delta and Camden Bay areas; and should provide stronger measures, including consideration of impending climate change, for protection of the Porcupine caribou herd, which is of enormous economic importance to the people residing on and near the coastal plain. The draft plan makes "no surface occupancy" stipulations, but even under the most restrictive alternatives these stipulations are vague and contain loopholes for development. In view of inevitable economic pressures, it is critical that these stipulations be well-defined and unwaivable. I am grateful to the Biden administration for cancelling existing oil and gas leases within the Refuge. But lasting protection for the refuge will only come if President Biden works with Congress to repeal the "Tax Act" provision that opened the Refuge to oil and gas leasing, and to pass permanent protections through Wilderness designation for the entire 19.2 million-acre Arctic Refuge.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears. Finally, language has been added to D2 that addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures. Potential impacts on the oil and gas program on wilderness as well as other special designations, such as wild and scenic rivers, is detailed in Section 3.4.7.
Tussing	Katharine	-	23407	1	I oppose all gas and oil drilling in the Arctic Refuge. Lasting protection for the refuge will only come if President Biden works with Congress to repeal the "Tax Act" provision that opened the Refuge to oil and gas leasing and to pass permanent protection through Wilderness designation for the entire 19.2 million acre Arctic Refuge.The very name "refuge" means a protected place.	Repealing PL 115-97 is outside the scope of this plan. The USFWS 2015 CCP ROD recommended wilderness designation by Congress and that USFWS has been managing the Coastal Plain to maintain wilderness characteristics. An act of Congress is needed to formally designate a wilderness area and is outside the scope of this plan.
Rogers	Stephanie	-	23414	1	Permanently end all oil and gas drilling in the Arctic Refuge. I appreciate what the Biden administration has done so far to stop the reckless changes made during the Trump administration, but they must complete the job to fully protect the Arctic Refuge. This includes repealing the "Tax Act" provision and permanently designating all of the Arctic Refuge as Wilderness, with all possible protections. We must protect this wilderness for the wildlife and indigenous people that reside there. This means removing all loop holes that could lead to the desecration of this area now and in the future. It means permanent protection of habitat, and conservation of species through research and best practices. We must protect the few truly wild places we have left.	Repealing PL 115-97 is outside the scope of this plan. The USFWS 2015 CCP ROD recommended wilderness designation by Congress and that USFWS has been managing the Coastal Plain to maintain wilderness characteristics. An act of Congress is needed to formally designate a wilderness area and is outside the scope of this plan.
Hilton	Bill	-	23557	1	I write today to share my opposition to all oil and gas leasing in the Arctic Refuge. The Refuge needs lasting protection, which requires repeal of the "Tax Act" that opened it to leasing. I strongly favor permanent protections by designation of the entire Refuge as Wilderness. I appreciate that the Biden Administration has cancelled the existing leases, yet the Draft SEIS is inadequate in several respects. The SEIS as drafted fails to explain what would be lost by opening the Refuge to oil and gas extraction. It is inconsistent in protecting polar bear habitat through out the Refuge; stronger protection is needed in the Canning River Delta and the Camden Bay area. And it must do a better job of planning for and addressing future climate change impacts, in particular but not only for caribou migrations.	Repealing PL 115-97 is outside the scope of this plan. The USFWS 2015 CCP ROD recommended wilderness designation by Congress and that USFWS has been managing the Coastal Plain to maintain wilderness characteristics. An act of Congress is needed to formally designate a wilderness area and is outside the scope of this plan. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears.
Miller	Lester	-	24190	1	Further, drilling would violate President Biden's Executive Order to protect 30% of U.S. land and water by 2030 to save our climate, environment, and wildlife.	Under Alternative D2, no leasing would be allowed in more than 30 percent of the program area.
Dunson	Debra	-	32367	4	To fully protect the Arctic Refuge's vital habitat and Indigenous resources will require the Biden Administration and Congress to cancel the "Tax Act" provision that opened the Refuge to oil and gas leasing. Last month, when the Biden administration canceled the existing leases in the Arctic Refuge it was a first step in the right direction. Evidence of the failure of the 2021 lease sale to bolster our federal finances proves that future lease sales will perpetuate a financial fiasco, as well as environmental disaster. I believe that the Arctic Refuge should be off-limits to oil and gas development, and that the Biden Administration should designate it as a protected Wilderness of the United States.	Repealing PL 115-97 is outside the scope of this plan. The USFWS 2015 CCP ROD recommended wilderness designation by Congress and that USFWS has been managing the Coastal Plain to maintain wilderness characteristics. An act of Congress is needed to formally designate a wilderness area and is outside the scope of this plan.
Latner	Nancy	-	34236	2	Drilling would force changes to migration patterns, and imperil at-risk wildlife like polar bears, which are listed as threatened under the Endangered Species Act and are federally protected under the Marine Mammal Protection Act.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears.
Sorge	Sven	-	39438	1	The SEIS does not adequately consider international Indigenous rights of free, prior, and informed consent (FPIC) for any development on ancestral lands. This consent is not merely a moral obligation, it is a legal necessity with regards to Indigenous sovereignty.	Inupiat and Gwich'in communities are specifically considered in the environmental justice section based on their identified use of relevant subsistence resources in Section 3.4.5. Other Gwich'in community impacts are discussed in the subsistence and sociocultural analyses (Sections 3.4.3 and 3.4.4, respectively), including indigenous Canadian communities.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Sorge	Sven	-	39438	3	BLM Must Comply with International Treaty Obligations: There is a treaty between the United States and Canada regarding conservation of the Porcupine Caribou Herd and its habitat: the 1987 Porcupine Caribou Herd Conservation Agreement.	As noted in Section 1.9, the BLM would comply with all applicable international agreements, including the International Porcupine Caribou Herd Agreement, which is summarized in Appendix E.
Hayward	Michelle	-	39606	1	If President Biden can work with Congress to repeal the Act, this would help protect the region. Ideally, he needs to ensure the entire 19.2 million-acre Arctic Refuge is designated as Wilderness. Oil and gas leasing and development would cause irreversible damage to the area. It would interfere with the behavior of the wildlife along the coastal plain and within the existing designated Wilderness.	Repealing PL 115-97 is outside the scope of this plan. The USFWS 2015 CCP ROD recommended wilderness designation by Congress and that USFWS has been managing the Coastal Plain to maintain wilderness characteristics. An act of Congress is needed to formally designate a wilderness area and is outside the scope of this plan.
Batten	Alan	-	44792	1	The 2017 legislation adding "provision of an oil and gas program" to the purposes of the Refuge is a travesty and flies in the face of the principles underpinning the entire US Fish and Wildlife Service. An amendment is urgently needed to remove this language.	Repealing PL 115-97 is outside the scope of this plan.
Van Atta	Karen	-	44964	8	Lasting protection is needed. Repeal of the "Tax Act" provision that opened the Refuge to oil and gas leasing is essential. It is time for permanent protections through Wilderness designation for the entire 19.2 million-acre Arctic Refuge.	Repealing PL 115-97 is outside the scope of this plan. The USFWS 2015 CCP ROD recommended wilderness designation by Congress and that USFWS has been managing the Coastal Plain to maintain wilderness characteristics. An act of Congress is needed to formally designate a wilderness area and is outside the scope of this plan.
Parrish	David	-	45244	1	Consequently I urge President Biden to work with Congress to repeal the "Tax Act" provision that opened the Refuge to oil and gas leasing, and to pass permanent protections through Wilderness designation for the entire 19.2 million-acre Arctic Refuge. To even the most casual visitor, it is abundantly clear that oil leasing and development would destroy the wild quality of both the Arctic coastal plain and adjacent designated Wilderness lands in the Arctic Refuge.	Repealing PL 115-97 is outside the scope of this plan. The USFWS 2015 CCP ROD recommended wilderness designation by Congress and that USFWS has been managing the Coastal Plain to maintain wilderness characteristics. An act of Congress is needed to formally designate a wilderness area and is outside the scope of this plan.
Warren	Greg	-	72931	4	Draft SEIS: Decisions to Be Made at 1-3 states, "The BLM's decisions will include which lands will be available for lease and the terms and conditions to be applied to leases and authorizations for oil and gas activities... The USFWS continues to manage all federal lands in the Arctic Refuge Coastal Plain, including both potential leased and unleased areas; however, the BLM manages all aspects of the oil and gas program, including the issuance and administration of oil and gas leases, and permitting of all oil and gas activities... Although Section 20001(a)(2) and (b)(2)(A) of PL 115-97 assigns sole responsibility to the BLM for administering the oil and gas program, it is understood that all activities, including plan development, study development, and consideration of exceptions, modifications, waivers, or any operations that will be conducted on the surface of the Arctic National Wildlife Refuge would include coordination with the USFWS to ensure that its considerations as the surface management agency are taken into account..." Comment: Public Law 115-97 grants the BLM limited legal authority across the Coastal Plain for the purpose of administering oil and gas leasing programs. The U.S. Fish and Wildlife Service has the primary obligation for protecting surface resources of the Arctic National Wildlife Refuge. The FWS is responsible and the authority for determining if a proposed development or survey action would materially interfere with and detract from the fulfillment of the National Wildlife Refuge System mission and the Arctic Refuge purposes of conserving fish and wildlife populations and habitats, water quality and necessary water quantity within the refuge. The primary decision to be made is a leasing availability decision that addresses the requirements of Public Law 115-97, including providing for the collective purposes of the Arctic National Wildlife Refuge and the Refuge Act on the Coastal Plain. A leasing availability decision-the tracts of land that will be offered for lease and the terms and conditions to be applied to such leases-must ensure that any oil and gas program on the Coastal Plain will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission and the Arctic Refuge purposes of (1) conserving fish and wildlife populations and habitats in their natural diversity, (2) ensuring to the maximum extent practicable and in a manner consistent with the purposes of conserving fish and wildlife populations and habitats, water quality and necessary water quantity within the refuge, and (3) protecting other surface resource values. The Refuge Act mandates that each national wildlife refuge "shall be managed to fulfill the mission of the [National Wildlife Refuge] System, as well as the specific purposes for which that refuge was established" (16 U.S.C. § 668dd(a)(3)(A)). A refuge's purposes include "purposes specified in or derived from the . . . public land order . . . establishing . . . a refuge" (16 U.S.C. § 668 ee(10)). Similarly, ANILCA requires the national wildlife refuges to be managed in accordance with the laws governing the administration of the National Wildlife Refuge System and pursuant to all consistent provisions of previously applicable public land orders (ANILCA §§ 304(a), 305). The Refuge Act provides, in part, that "the Secretary shall not initiate or permit a new use of a refuge or expand, renew, or extend an existing use of a refuge, unless the Secretary has determined that the use is a compatible use" (16 U.S.C. § 668dd(d)(3)(A)(i)). The BLM should comply with 43 CFR § 3101.5-3, which describes that no lands within a refuge in Alaska open to leasing shall be available until the Fish and Wildlife Service has first completed a compatibility determination.	Section 20001(a)(1) of PL 115-97 requires the development of an oil and gas program on the Coastal Plain and explicitly directs that the oil and gas program be managed by the Secretary of the Interior, acting through the BLM. Therefore, that authority cannot be delegated to USFWS. However, stipulations and ROPs have been updated to reflect that the BLM Authorized Officer will coordinate with the USFWS.
Alliance	Alaska	The Alliance	79123	1	- The Leasing SEIS proposes several alternatives, however, Alternative B is the only alternative that complies with the directive of the 2017 Tax Cuts and Jobs Act which "directs the Secretary of the Interior, acting through the Bureau of Land Management (BLM), to establish and administer a competitive program for the leasing, development, production, and transportation of oil and gas in and from ANWR's Coastal Plain." - Alternatives C & D are cost-prohibitive and do not comply with the 2017 Tax Cuts and Jobs Act.	Per 40 CFR 1502.22, agencies are not required to weigh the merits and drawbacks of the various alternatives in a monetary cost-benefit analysis and should not do so when there are important qualitative considerations

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Allen	Mark	Government of Canada	79200	1	Since 1987, Canada has stated that it does not support development in the Arctic National Wildlife Refuge Coastal Plain. That position has not changed. Canada has consistently opposed development in the Coastal Plain, and has provided strong diplomatic, regulatory, scientific interventions and public statements to support this position during the current process. Canada made seven formal written submissions to the United States government during various stages of the recent Coastal Plain regulatory reviews for leasing and seismic surveys (geophysical surveys). Canada also sent two diplomatic notes, had a formal bilateral meeting with the Assistant Secretary of the U.S. Department of the Interior, and had two face-to-face meetings with the International Porcupine Caribou Board. Canada remains concerned about the potential transboundary impacts of oil and gas exploration and potential development on the Coastal Plain, including impacts on species shared by countries, as well as impacts on Indigenous Peoples in Canada, including their customary and traditional use of Porcupine Caribou. Canada remains particularly concerned that oil and gas exploration and development (including pre- and post-lease activities such as seismic, exploration drilling, and production and transportation of oil and gas from the Coastal Plain) will negatively affect the long-term reproductive success of the Porcupine Caribou herd. This would adversely affect the neighbouring Indigenous People in Canada's ability to maintain their cultural and spiritual identities and food security. As elaborated on near the end of this submission, Canada's commitment to the conservation of the Porcupine Caribou herd is demonstrated by the complete protection of the calving grounds along with substantial surrounding areas.	The SEIS has been revised to more fully consider transboundary impacts, where applicable.
Allen	Mark	Government of Canada	79200	2	Treaty and Bilateral Engagement Canada and the United States have a long and successful history of cooperation and coordination for activities that can have transboundary impacts. The following agreements relating to shared species form the basis for our comments on the SEIS: - Porcupine Caribou (the 1987 Agreement Between the Government of Canada and the Government of the United States of America on the Conservation of the Porcupine Caribou Herd [herein the 'Porcupine Caribou Agreement']); - Polar bears (the multilateral 1973 Agreement on the Conservation of Polar Bears, and the 2008 Memorandum of Understanding between Environment and Climate Change Canada and the United States Department of the Interior for the Conservation and Management of Shared Polar Bear Populations); and - Migratory birds (the 1916 Convention for the Protection of Migratory Birds in the United States and Canada and the amendments under the Parksville Protocol that came into force in 1999). Our two Nations have agreed to jointly manage the Porcupine Caribou herd through the Porcupine Caribou Agreement as a recognition of the importance of cooperation and coordination for the long-term conservation of the herd and its habitat, a shared natural resource. Further, as part of President Biden's March 2023 visit to Canada, Canada and the United States committed to advancing conservation and protecting ecosystems in the Arctic. This includes supporting Indigenous-led conservation efforts and furthering work under agreements and treaties established around the movement of shared species ¹ . Under the 2021 Roadmap for a Renewed Canada-United States Partnership ² , the leaders also recognized the ecological importance of the Arctic National Wildlife Refuge. In particular, they agreed to work together to help safeguard the Porcupine Caribou herd calving grounds that are invaluable to the Gwich'in and Inuvialuit peoples' culture and subsistence. While Canada welcomes the opportunity to contribute to the important SEIS process, it nevertheless views it as an internal U.S. process, distinct and separate from the treaty-based and high-level mechanisms that bind our two countries. Canada therefore requests that the United States engage Canada directly through a meeting of our officials in the coming months. This would be separate from the International Porcupine Caribou Board. ¹ https://www.pm.gc.ca/en/news/statements/2023/03/24/prime-minister-trudeau-and-president-biden-joint-statement ² https://www.pm.gc.ca/en/news/statements/2021/02/23/roadmap-renewed-us-canada-partnership The Porcupine Caribou Agreement created the International Porcupine Caribou Board. In order for this board to contribute to the SEIS, it would be useful for the U.S. to appoint its remaining three vacant members in a timely fashion to meet and have discussions with Canadian members.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.
Allen	Mark	Government of Canada	79200	27	As described in previous submissions, Canada also notes that the International Porcupine Caribou Board, formed under the Porcupine Caribou Agreement, is a key bilateral mechanism to advise the Governments of Canada and the United States on the impact of proposed development and to share information and consider actions for the conservation of the herd and its habitat. Canada continues to hold the view that advice to the Parties on this matter is central to the role of the Board in supporting the treaty and will continue to welcome advice from the Board.	The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.
Robertson	C.K.	The Episcopal Church	79229	3	Because the 2017 Tax Cuts and Jobs Act did not override the laws that protect the Coastal Plain, it must adopt measures to protect this sacred land and ensure compliance with the law.	The BLM/USFWS have developed alternatives with associated stipulations and ROPs to provide for protection of Coastal Plain resources. The agencies would comply with all applicable laws and regulations as described in Section 1.9.
Wolf	Meghan	Patagonia	79580	3	Finally, we ask you to work with Congress to repeal the Tax Act's leasing program.	Repealing PL 115-97 is outside the scope of this plan.
McDonnell	Tracey	-	79779	1	Alternatives B, C, and D do not balance the purpose of oil and gas development that the Tax Act of 2017 added to the Refuge purposes with the original four conservation purposes specified in ANILCA. This fifth purpose is inherently incompatible with the other four. Oil and gas development would take priority and precedence over the conservation purposes for which the Refuge was established in all of these alternatives by causing irreversible environmental changes (including additional carbon emissions that contribute to global warming) as projected in the environmental analysis.	All action alternatives are designed to meet the purpose and need, and to account for all purposes of the Arctic National Wildlife Refuge, without weighing one purpose over another.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Moriarty	Kara	Alaska Oil & Gas Association	79980	4	Through the Tax Act's establishment of a competitive oil and gas program in the 1002 Area, Congress struck a balance between promoting oil and natural gas development in the Coastal Plain and protecting the environmental resources of the Refuge. While requiring at least two area-wide lease sales in the 1002 Area-the first within four years of the Act's enactment and the second within seven years-Congress also included certain limitations. The program authorizes only up to 2,000 surface areas of federal lands to be covered by production and support facilities during the term of the leases, and directs that the program be managed in a manner similar to the administration of lease sales under the Naval Petroleum Reserves Production Act of 1976. These protections strike the necessary balance without the need for further restrictions on surface activity. The State of Alaska and the people of the North Slope support the program, and the Alaska congressional delegation has recognized that it will help refill Trans Alaska Pipeline System ("TAPS") while creating high-paying jobs, generating revenues for local, state, and federal treasuries, keeping energy prices affordable, and strengthening our national energy security. The Associations recognize that politics have shifted since the Tax Act's enactment, and the Secretary has publicly stated her disagreement with policies underlying the required leasing program. Canceling the leases issued on January 6, 2021, put the DOI out of compliance with the Tax Act's mandate to complete at least one lease sale within four years. Furthermore, in doing so, DOI acted beyond its legal authority. Notwithstanding, even if the purported "deficiencies" with the Draft SEIS had merit, they could be easily addressed through future processes without any need to cancel existing and completed leases.	The BLM conducted its first lease sale in the Coastal Plain on January 6, 2021. This sale met the requirements of the Section 20001(c)(1) of PL 115-97. While the development of the oil and gas program is non-discretionary, defining the areas available for leasing as well as the terms and conditions that would apply to those leases are subject to BLM control and responsibility. Therefore, the development of an oil and gas program on the Coastal Plain is considered a major federal action subject to NEPA.
Moriarty	Kara	Alaska Oil & Gas Association	79980	11	Having reviewed the Draft SEIS, DOI appears to have used the NEPA review process as pretext to unlawfully cancel leases with which it no longer politically agrees, even though those leases were lawfully issued pursuant to Congress's mandate. The procedural "deficiencies" the Draft SEIS purports to correct are not true deficiencies and, regardless of their merit, have no bearing on the lawfulness of the initial leases or their terms. By canceling them, the agency acted beyond the scope of its authority and fell out of compliance with the Tax Act. Although the Draft SEIS acknowledges that the Tax Act requires the Secretary to conduct at least two lease sales by December 22, 2024, it fails to acknowledge that the first of those sales needed to have been completed by December 22, 2021, and that the DOI's cancellation of the issued leases conflicts with its congressional obligations.	The BLM conducted its first lease sale in the Coastal Plain on January 6, 2021. This sale met the requirements of the Section 20001(c)(1) of PL 115-97. The leases were cancelled in light of serious legal deficiencies identified by the DOI in the underlying record supporting issuance of the leases. The decision to cancel the existing leases within the Coastal Plain area is outside the scope of the SEIS.
Moriarty	Kara	Alaska Oil & Gas Association	79980	12	Section 20001(c) of the Tax Act directs the Secretary to conduct at least two area-wide Coastal Plain lease sales, each of at least 400,000 acres, by December 22, 2024.(40) Despite BLM's efforts in the Draft SEIS to gloss over the leasing schedule required by the Act, the Tax Act specifically mandates that the first sale occur no later than December 22, 2021, and the second no later than December 22, 2024.(41) The Draft SEIS improperly-and presumably intentionally-conflates these separate obligations by simply describing the Tax Act as requiring "that at least two lease sales be held by December 22, 2024 . . ."(42) (40) Pub. L. No. 115-97 § 20001(c). (41) Pub. L. No. 115-97 § 20001(c) (emphasis added). (42) Draft Coastal Plain Oil and Gas Leasing Program Supplemental Environmental Impact Statement (Aug. 2023) at 1.3. The Associations note that because BLM has vacated the "initial" lease sale the Tax Act requires, its obligation to conduct the first lease sale by December 22, 2021 remains unmet. The Department is therefore still obligated to conduct two separate lease sales offering a minimum of 400,000 acres each, with the second no later than December 22, 2024, and it should be clear as to its plans to remedy its violation of the congressionally-mandated leasing requirement and schedule. Any contrary interpretation would conflict with Congress's very plain directive with regard to the establishment of the Coastal Plain Oil and Gas Leasing Program.	The BLM conducted its first lease sale in the Coastal Plain on January 6, 2021. A total of nine tracts were leased in this first lease sale. This sale met the requirements of Section 20001(c)(1) of PL 115-97 to hold the first lease sale by December 22, 2021.
Moriarty	Kara	Alaska Oil & Gas Association	79980	13	When DOI cancelled the initial leases issued on January 6, 2021 due to alleged deficiencies it identified in its prior NEPA analysis, it fell out of compliance with Congress's mandate under the Tax Act to complete at least one lease sale by December 22, 2021. The Tax Act provides no authority for the Secretary to cancel any leases issued pursuant to its provisions. Instead, Section 20001(b)(3) of the Tax Act directs the Secretary to "manage the oil and gas program on the Coastal Plain in a manner similar to the administration of lease sales under the Naval Petroleum Reserves Production Act of 1976 [NPRPA] . . . (including regulations)." The NPRPA, in turn, authorizes the Secretary only to "direct or assent to the suspension of operations and production."(43) The only provision within the NPRPA that does speak to lease termination prohibits it, stating that "[n]o lease issued under this section covering lands capable of producing oil or gas in paying quantities shall expire because the lessee fails to produce the same due to circumstances beyond the control of the lessee."(44) While the NPRPA contemplates that a lease may be terminated, it is only under circumstances specifically proscribed by that act and not at the discretion of the Secretary. (45) (43) 42 U.S.C. § 6506a(k)(2) (emphasis added). (44) 42 U.S.C. § 6506a(i)(6). (45) 42 U.S.C. § 6506a(i)(5) (providing for lease expiration "if no oil or gas is produced from a lease within 30 years after the date of the issuance of the lease").	The BLM conducted its first lease sale in the Coastal Plain on January 6, 2021. A total of nine tracts were leased in this first lease sale. This sale met the requirements of Section 20001(c)(3) of PL 115-97.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Moriarty	Kara	Alaska Oil & Gas Association	79980	14	Recently, the Alaska District Court found that "Congress authorized DOI to suspend leases by virtue of the Tax Act's reference to the NPRPA, which expressly allows the Interior Secretary to 'direct or assent to the suspension of operations and production on any lease or unit.'"(46) That same reasoning should be applied here; Congress did not authorize DOI to cancel leases "by virtue of the Tax Act's reference to the NPRPA," which provides no authority to the Secretary to cancel leases, and instead specifically proscribes the circumstances under which a lease may terminate. (46) Alaska Indus. Dev. & Exp. Auth. v. Biden, 2023 WL 5021555, at *22 (D. Alaska Aug. 7, 2023) (citing 42 U.S.C. § 6506a(k)(2)). In a press release announcing the cancellation of the seven remaining leases issued pursuant to the January 6, 2021 lease sale, BLM asserts that "[t]he Secretary of the Interior has the authority to cancel or suspend oil and gas leases issued in violation of a statute or regulation," that "the 2021 lease sale was seriously flawed and based on a number of fundamental legal deficiencies," and that the leases issued pursuant to that lease sale therefore would be cancelled.(47) (47) BLM, "Biden-Harris Administration Takes Major Steps to Protect Arctic Lands and Wildlife in Alaska" (Sept. 6, 2023) (emphasis added), available at https://www.doi.gov/pressreleases/biden-harris-administration-takes-major-steps-protect-arctic-lands-and-wildlife-alaska#:~:text=Lease%20Cancellations%20in%20the%20Arctic%20National%20Wildlife%20Refuge&text=3401%20directed%20a%20new%2C%20comprehensive,the%20request%20of%20the%20lessees . In apparent recognition of the limits on its inherent authority, BLM's argument has drifted from an assertion that the NEPA review process was deficient to an assertion that the issuance of the leases represented a serious "violation [of federal law]." However, none of the three process deficiencies identified by BLM in the Draft SEIS-including the purported failure to adequately analyze a reasonable range of alternatives in the Final EIS, purported failure of the 2020 ROD to properly interpret Section 20001 of the Tax Act,(48) and purported failure of the Final EIS to properly analyze GHG emissions-have any bearing on the issuance of or terms set forth in the leases issued pursuant to the January 6, 2021 lease sale. We have seen no suggestion-other than in the press release referenced above-of any legal deficiencies associated with the 2021 lease sale itself or in the leases issued pursuant to that lease sale. (48) Although BLM does not explain why the ROD (which it prepared) fails to properly interpret Section 20001 of the Tax Act, we presume based on changes in the Draft SEIS that BLM primarily takes issue with the 2,000 acre limitation, which is irrelevant to the issuance of leases as part of a lease sale. Whatever limited legal support there may be for BLM's authority to "correct administrative errors . . . by cancellation of leases,"(49) that authority is limited and "do[es] not open the door to administrative abuses."(50) Here, BLM has offered no reasoned explanation suggesting that the cancellation of leases as a result of alleged deficiencies in the original NEPA analysis resulted in any administrative "error" at all. None of the three deficiencies BLM cites have any bearing on the issuance (or terms) of the leases issued pursuant to the 2021 lease sale. Because DOI lacks authority to vacate the leases, they must be reinstated. (49) Boesche v. Udall, 373 U.S. 472, 485 (1963). (50) Id.	The leases were cancelled in light of serious legal deficiencies identified by the DOI in the underlying record supporting issuance of the leases. The decision to cancel the existing leases within the Coastal Plain area is outside the scope of the SEIS.
McCulley	Alice	Tr'ondëk Hwëch'in	80073	2	International treaty obligations are referenced in the purposes set forth for ANWR in the Alaska National Interest Lands Conservation Act (ANILCA) (1980) Section 303(2)(B): "(i) to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to, the Porcupine caribou herd (including participation in coordinated ecological studies and management of this herd and the Western Arctic caribou herd), polar bears, grizzly bears, muskox, Dall sheep, wolves, wolverines, snow geese, peregrine falcons, and other migratory birds and Arctic Char and grayling; (ii) to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;" It is important that these purposes are not overshadowed by the addition of Sec. 303(2)(B): "(v) to provide for an oil and gas leasing program on the Coastal Plain". Unfortunately, The United States failure to appoint members to the IPCB for the past several years is contrary to President Biden's statements regarding the importance and value of ANWR, and casts doubt on the U.S. government's commitment to fulfilling the terms of the international treaty and ANILCA.	The appointment of members to the IPCB is beyond the scope of this project. The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.
Durack	Ryan	-	80109	11	The SDEIS fails to come to refer to and analyse the specific obligations of the United States under relevant international environmental treaties. In previous submissions we have identified the following relevant environmental treaties that are binding on the United States: - Agreement between the Government of Canada and the Government of the United States on the Conservation of the Porcupine Caribou Herd (PCH Agreement) - Agreement on the Conservation of Polar Bears (ACPB) - The Migratory Birds Convention and Protocol (MBC & P) - The Ramsar Wetlands Convention And we have urged the relevant agencies to take these treaties into account as part of preparing the EIS and now the DSEIS. However, while the current DSEIS references the PCH Agreement, the ACPB, the Ramsar Convention and, collectively, the US s migratory bird agreements, it does so at a high level of generality that fails to come to grips with the specific obligations contained in these agreements. Appendix 1 contains the relevant discussions from the SDEIS. It is our respectful submission that this is completely inadequate. Accordingly, we formally request that the lead agencies address the following types of questions when finalizing the SEIS.	The Migratory Birds Convention is the Canadian equivalent of the MBTA. Text to this effect has been added to Appendix E, Laws and Regulations.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Durack	Ryan	-	80109	12	Agreement between the Government of Canada and the Government of the United States on the Conservation of the Porcupine Caribou Herd For the PCH Agreement, describe how each of the Alternatives is consistent or not with the recognition in the Preamble of the PCH that: ..."the Porcupine Caribou Herd regularly migrates across the international boundary between Canada and the United States of America and that caribou in their large free-roaming herds comprise a unique and irreplaceable natural resource of great value which each generation should maintain and make use of so as to conserve them for future generations"; And ..."the importance of conserving the habitat of the Porcupine Caribou Herd, including such areas as calving, post- calving, migration, wintering and insect relief habitat".	All alternatives are designed be compliance with federal laws and policy, including the Porcupine Caribou Herd Agreement. The Agreement between the Government of Canada and the Government of the United States on the Conservation of the Porcupine Caribou Herd (1987) does not preclude development.
Durack	Ryan	-	80109	13	For the PCH Agreement, describe how each of the Alternatives is consistent or not with the objectives of the Agreement, and, in particular, "To conserve the Porcupine Caribou Herd and its habitat through international cooperation and co- ordination so that the risk of irreversible damage or long- term adverse effects as a result of use of caribou or their habitat is minimized".	All alternatives are designed be compliance with federal laws and policy, including the Porcupine Caribou Herd Agreement, therefore, a crosswalk of each alternative with those laws is not necessary. The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada.
Durack	Ryan	-	80109	14	For the PCH Agreement provide an assessment of how the Draft SEIS ensures that the Porcupine Caribou Herd, its habitat and the interests of users of Porcupine Caribou are given effective consideration in evaluating proposed activities within the range of the Herd within the meaning of Article 3(b) of the Agreement. The draft SEIS fails to provide an assessment of the significance of the impact of any of the four options for the PCH, its habitat or Indigenous communities in Canada.	The Final SEIS has been revised to include additional discussion of transboundary impacts in Chapter 3, where applicable.
Durack	Ryan	-	80109	15	For the PCH Agreement provide an assessment of whether the proposed program as implemented through any of the four Alternatives is "likely to cause significant long- term adverse impact on the Porcupine Caribou Herd or its habitat" within the meaning of Article 3(d) of the Agreement.	All alternatives are designed be compliance with federal laws and policy, including the Porcupine Caribou Herd Agreement. The Agreement between the Government of Canada and the Government of the United States on the Conservation of the Porcupine Caribou Herd (1987) does not preclude development.
Durack	Ryan	-	80109	16	For the PCH Agreement provide an assessment of whether the proposed program, as implemented through any of the four Alternatives, is consistent with the obligation to avoid or minimize activities that would significantly disrupt migration or other important behavior patterns of the Porcupine Caribou Herd or that would otherwise lessen the ability of users of Porcupine Caribou to use the Herd within the meaning of Article 3(f) of the Agreement. In particular, please explain how each of the Action Alternatives (B, C and D) can be reconciled with this obligation.	All alternatives are designed be compliance with federal laws and policy, including the Porcupine Caribou Herd Agreement. The Agreement between the Government of Canada and the Government of the United States on the Conservation of the Porcupine Caribou Herd (1987) does not preclude development.
Durack	Ryan	-	80109	17	As noted in all of our submissions, Article II of the ACPB contains an important commitment to protect the habitat of polar bear as well as the ecosystem of which polar bears are a part. "Each Contracting Party shall take appropriate action to protect the ecosystems of which polar bears are a part, with special attention to habitat components such as denning and feeding sites and migration patterns, and shall manage polar bear populations in accordance with sound conservation practices based on the best available scientific data". Please provide an assessment of how each of the four Alternatives is consistent (or not) with the due diligence obligation of the United States to protect the ecosystem and habitat components, including denning sites, of the shared Southern Beaufort population of polar bears - especially given the cultural significance of the polar bear (Nanuq) to the Inuvialuit people and as recognized in the Inuvialuit- I upiat Polar Bear Management Agreement.	All alternatives are designed be compliance with federal laws and policy, including the Agreement on the Conservation of Polar Bears (see Section 1.10).
Durack	Ryan	-	80109	18	For the Migratory Birds Convention and Protocol, please provide an assessment of how each of the leasing Alternatives is consistent (or not) with the underlined portion of the Preamble of this agreement, in that the Governments of the United States and Canada are: ..."committed to the long- term conservation of shared species of migratory birds for their nutritional, social, cultural, spiritual, ecological, economic, and aesthetic values through a more comprehensive international framework that involves working together to cooperatively manage their populations, regulate their take, protect the lands and waters on which they depend, and share research and survey information" (underlining added).	All alternatives are designed be compliance with federal laws and policy, including the Migratory Bird Treaty Act. The Migratory Bird Treaty Act and corresponding Migratory Bird Connection Act (in Canada), are discussed in Section B.3.3. Potential impacts on migratory birds are analyzed in the SEIS by alternative in Section 3.3.3. Appropriate mitigations are considered in the ROD.
Durack	Ryan	-	80109	19	For the MBC & P please indicate how each of the leasing Alternatives is consistent (or not) with the obligations under Article IV (interpreted as due diligence obligations) to the effect that: "Each High Contracting Power shall use its authority to take appropriate measures to preserve and enhance the environment of migratory birds. In particular, it shall, within its constitutional authority: (a) seek means to prevent damage to such birds and their environments, including damage resulting from pollution; ... and (d) pursue cooperative arrangements to conserve habitats essential to migratory bird populations".	All alternatives are designed be compliance with federal laws and policy, including the Migratory Bird Treaty Act. The Migratory Bird Treaty Act and corresponding Migratory Bird Connection Act (in Canada), are discussed in Section B.3.3. Potential impacts on migratory birds are analyzed in the SEIS by alternative in Section 3.3.3. Appropriate mitigations are considered in the ROD.
Durack	Ryan	-	80109	20	As noted in Appendix 1, the SDEIS mentions the Ramsar Convention only once notwithstanding the fact that 99% of the 1002 area is classified as wetland. Consequently, we recommend that the SEIS be revised to respond to the following comments. For the Ramsar Wetlands Convention, detail the due diligence obligations of the United States under this agreement and assess each of the leasing Alternatives in light of those due diligence obligations. More specifically, please detail how each of the leasing options is consistent (or not) with the "wise use" of wetlands as understood by the parties to the Ramsar Convention.	Wetlands are considered in detail in Section 3.3.1 as well as Appendix B, Section B.3.1.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Durack	Ryan	-	80109	21	In sum it is our position that it is not enough for the SDEIS to recite the existence of these four international agreements. The SDEIS must also engage with the actual terms of these agreements and assess each leasing Alternative in light of the due diligence obligations of the United States under those agreements and under customary international law. Such an assessment is necessary in order to ensure that the ultimate Record of Decision is fully informed by the implications of each leasing Alternative for the observance of the legal obligations of the United States.	All alternatives are designed be compliance with federal law and policy. Specific impacts to species considered in these four agreements are detailed, by alternative, in their respective resource sections.
Durack	Ryan	-	80109	22	The SDEIS fails to acknowledge the relevance of the United States obligations under international human rights law, specifically with respect to the International Covenant on Civil and Political Rights. In previous submissions we have noted that the EIS should pay particular attention to the effects of any development of the 1002 lands that might impair the subsistence harvesting interests of Indigenous communities on both sides of the international boundary. The lead agencies are obliged to do so with respect to the interests of native communities in Alaska by the terms of s 810(a) of ANILCA. But the United States also has a legal obligation to consider the effects of any development of the 1002 lands that might impair the subsistence harvesting interests of Indigenous communities in Canada as a result of the commitments that it has made as a party to the International Covenant on Civil and Political Rights (ICCPR) and in particular the right to culture recognized in Article 27. The original Final EIS did acknowledge the relevance of the ICCPR in the section of the EIS dealing with cultural resources: Several international laws also address cultural considerations that are relevant and should be taken into account during the decision- making process: the Migratory Birds Convention and Protocol, Inuvialuit- I upiat Polar Bear Management Agreement in the Southern Beaufort Sea, Ramsar Wetlands Convention 1971, and International Covenant on Civil and Political Rights. (Emphasis added.) This was an important acknowledgement even though the Final EIS did not go on to explore the implications of US obligations under the ICCPR. Unfortunately, the current DSEIS does not mention the ICCPR. In other words, the DSEIS is a step backwards not a step forward. This omission is particularly surprising given the importance that the DSEIS otherwise attaches to culture, cultural transmission and subsistence harvesting especially in relation to the interests of indigenous communities in Alaska. Accordingly, we recommend that the DSEIS be revised to recognize the relevance of the ICCPR as well as the UN Declaration on the Rights of Indigenous Peoples. And further to that we invite the lead agencies to describe how each of the leasing Alternatives is consistent, or not, with the obligations of the United States under Articles 1(2) and Article 27 of the ICCPR and Articles 25, 29(1) and 32(2) of the UN Declaration. Such an assessment is necessary in order to ensure that the ultimate Record of Decision is fully informed by the implications of each option for the observance of the legal obligations of the United States. We rely upon our submissions on the original Draft EIS (attached as Appendix 2) for the proper interpretation of these provisions of the ICCPR and the UN Declaration.	All alternatives are designed be compliance with federal law and policy. The International Covenant on Civil and Political Rights, and other relevant laws, has been added to Chapter 1, Section 1.10.
Durack	Ryan	-	80109	23	The SDEIS fails to assess the risk of significant impact of any of the leasing alternatives for Inuvialuit communities and harvesters. As we have noted in previous submissions, it is not enough for an EIS to describe the impacts of the leasing options for Inuvialuit communities and harvesters; it must also assess the significance of those impacts. This is important for at least three reasons. First, under customary international law, the significance of impact is an important factor in determining what additional duties the source state owes to the state whose interests may be harmed.(1) Second, significance of impact is an important trigger under the terms of the PCH Agreement, specifically paragraphs (d), (e) and (f). d. Where an activity in one country is determined to be likely to cause significant longterm adverse impact on the Porcupine Caribou Herd or its habitat, the other Party will be notified and given an opportunity to consult prior to final decision. e. Activities requiring a Party s approval having a potential significant impact on the conservation or use of the Porcupine Caribou Herd or its habitat may require mitigation. f. The Parties should avoid or minimize activities that would significantly disrupt migration or other important behavior patterns of the Porcupine Caribou Herd or that would otherwise lessen the ability of users of Porcupine Caribou to use the Herd. (Emphases added.) (1) Certain Activities Carried out by Nicaragua in the Border Area (Costa Rica v Nicaragua) and Construction of a Road in Costa Rica along the San Jun River (Nicaragua v Costa Rica) (2015), [2015] ICJ Rep 665 available online https://www.icj- cij.org/public/files/case- related/150/150- 20151216- JUD- 01- 00- EN.pdf Third, significance of impact is also important as a matter of international human rights law in order to assess whether interference with cultural rights amounts to a denial of culture within the meaning of Article 27 of the ICCPR.	The transboundary impacts have been revised, where applicable. Decisions regarding the significance of impacts are included in the ROD, not the SEIS. Site-specific analyses of subsistence uses and resources, sociocultural systems, and environmental justice, including impacts associated with infrastructure in support of oil and gas development, can more realistically be provided when the BLM receives an application to permit such infrastructure.
Durack	Ryan	-	80109	25	In previous submissions we have emphasised that the United States has a legal obligation under both customary international law and relevant agreements to conduct its assessment of the impact of the leasing Alternatives in a non- discriminatory manner. See in particular our submission on the original Draft EIS. What we mean by this is that the EIS should be equally rigorous in its assessment of the impacts of the leasing alternatives for shared resources and subsistence users and Indigenous communities in Canada as it is for subsistence users and Indigenous communities in Alaska. In other words, the United States cannot effectively discount the negative impacts of the leasing alternatives because those impacts occur within Canada or to resource users and communities in Canada rather than in Alaska. And neither can the United States discount those impacts by failing to assess impacts in Canada in as rigorous a manner as that used to assess impacts in Alaska.	Inupiat and Gwich'in communities are specifically considered in the environmental justice section based on their identified use of relevant subsistence resources in Section 3.4.5. Other Gwich'in community impacts are discussed in the subsistence and sociocultural analyses (Sections 3.4.3 and 3.4.4, respectively), including indigenous Canadian communities.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Durack	Ryan	-	80109	26	It is our assessment that the SDEIS still fails to meet this standard. Here are some examples. - As noted in the previous subsection, the SDEIS provides an assessment of significance of impact of the leasing Alternatives for Alaska subsistence communities but fails to do the same for subsistence (or Indigenous) communities in Canada. - The SDEIS provides an assessment of the importance of subsistence harvests for subsistence communities in Alaska that is significantly more detailed (qualitatively and quantitatively) than is any similar assessment for Indigenous subsistence user communities in Canada. For example, the SDEIS continues to acknowledge that Canadian users account for 85% of the PCH harvest (at 3- 305) but there is no detailed assessment of the cultural (sharing), participation, and nutritional significance of this harvest for Indigenous communities in Canada as there is for the caribou study communities in Alaska and especially for the four primary subsistence communities in Alaska (see for example, Arctic Village at 3- 297 to 3- 299). There are eight Indigenous user communities in Canada, including the Inuvialuit user communities of Aklavik, Inuvik and Tuktoyaktuk. - The SDEIS is more selective of resource implications for Indigenous communities in Canada than it is for Alaskan communities. For example, at 3- 303 the DSEIS confirms that it will provide only an overview of impacts in relation to Arctic cisco, waterfowl and polar bears (and other harvested species are not even mentioned) while focussing on the PCH. - The SDEIS confirms that In all cases, future development would affect subsistence uses of resources of major importance for the subsistence study communities (At 3- 308) By contrast, the section on transboundary impacts is more speculative: Impacts on subsistence may extend outside the US to the Inuvialuit, Gwich in, and other user groups of Canada. (At 3- 324). Given that the SDEIS has already acknowledged the greater intensity of the PCH harvest by Indigenous communities in Canada it is hard to see how this more speculative assessment can be justified. Accordingly, we request that the SDEIS be revised to respond to these concerns since, unless the SDEIS applies the same level of coverage and rigour to its assessment of the transboundary impacts of the leasing Alternatives, the result will necessarily be to discount those transboundary impacts. Notably, Canadian harvest data and traditional knowledge studies for Indigenous user communities of Porcupine caribou and South Beaufort polar bears are available to contribute to a reassessment of transboundary impacts and their significance.	Inupiat and Gwich'in communities are specifically considered in the environmental justice section based on their identified use of relevant subsistence resources in Section 3.4.5. Other Gwich'in community impacts are discussed in the subsistence and sociocultural analyses (Sections 3.4.3 and 3.4.4, respectively), including indigenous Canadian communities.
Durack	Ryan	-	80109	27	Enhanced protections for Porcupine caribou and other North Slope wildlife habitat continue to advance in Canada at a time of possible diminished protection in ANWR with the prospect of future oil and gas lease sales and elevated adverse cumulative impacts resulting from accelerating climate- induced habitat change. - Federal, territorial and Indigenous governments and authorities in Canada continue to enhance contiguous protections for Porcupine caribou habitat across the herd s Canadian range, notably in the northern Yukon. (see Map 1 on following page). These include Ivavik National Park, Vuntut National Park and Old Crow Flats Special Management Area. An agreement to enhance habitat protection for Porcupine caribou and other wildlife across 8,400 square kilometres of the eastern half of the Yukon North Slope (Aullaviat/Aguniarvik) is pending final approval. Under the agreement the area would contribute to meeting Target 1 conservation thresholds and associated commitments under the Convention on Biological Diversity and, more specifically, Objective 2(a) under the International Agreement on the Porcupine Caribou Herd. - It would be a grave error in judgment to treat Canadian initiatives as habitat offSEIS that would rationalize or mitigate the impacts of decreased protections in ANWR given the unique habitat characteristics and the timing of their seasonal availability in ANWR in supported shared wildlife populations across the adjoining Alaska and Yukon North Slope.	The SEIS does not include measures to minimize impacts, including the use of Canadian initiatives to rationalize or mitigate impacts in the Arctic Refuge.
Durack	Ryan	-	80109	33	The draft SEIS does not indicate how it determined which agreements were relevant or why, for example, neither this section nor Appendix D references the Ramsar Convention. The final EIS for the first lease sale did reference the International Covenant on Civil and Political Rights (ICCPR) but there is no reference to the ICCPR in this document.	The Ramsar Convention has been added to Appendix E. The Final SEIS has been updated to note the ICCPR.
Brisson	Brook	Trustees for Alaska	80131	9	The Tax Act directs the Department of Interior to "manage the oil and gas program on the Coastal Plain in a manner similar to the administration of lease sales under the Naval Petroleum Reserves Production Act of 1976 (42 U.S.C. 6501, et seq.) (including regulations)."(129) To date, BLM has not clearly or comprehensively set out how it interprets or applies this mandate. In some areas, BLM has followed lease-related provisions of the NPRPA and its regulations; in others, it has deviated from the regulations and past practice. The Alaska District Court recently held that the suspension provisions in the statute and regulations apply to the Coastal Plain Leasing Program, determining that they are "an essential component of the 'administration of lease sales.'"(130) Building on the District Court's decision, BLM should comprehensively set out what provisions of the NPRPA and is regulations apply to the Leasing Program for all phases of oil and gas development. Where BLM believes that it can deviate from its interpretation and application of the NPRPA and its regulations, BLM should set that out so that the public is fully aware of the process BLM will follow as well as how the agency understands it authority to ensure that it is consistent with Congressional intent. (129) Pub. L. 115-97, Title II, sec. 20001(b)(3). (130) AIDEA v. Biden, 2023 U.S. Dist. LEXIS 136474, *24 (quoting Tax Act §10001(b)(3)).	PL 115-97 directs the BLM to implement the oil and gas program in a manner similar to the NPRPA, but does not dictate it be followed exactly. In order to manage the Coastal Plain oil and gas program similarly, the joint lead agencies have modeled many of the lease stipulations and ROPs after those in the NPR-A Integrated Activity Plan.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	69	The draft SEIS still fails to discuss how BLM will ensure compliance with the Marine Mammal Protection Act (MMPA).(365) BLM must ensure that the leasing program meets the agency's obligations under the MMPA, and this is a key issue to address in the SEIS. Similar to the ESA, jurisdiction of the MMPA is shared by NMFS and FWS (generically, "the Service"). For marine mammal resources relevant to the Coastal Plain, FWS has jurisdiction over polar bears and walrus while NMFS has jurisdiction over seals, porpoises, and whales. (365) 16 U.S.C. §§ 1361-1389.	In response to public comments, the FSEIS contains revised discussion clarifying the interplay between the leasing program and MMPA processes. Several lease stipulations and ROPs pertain to the protection of marine mammals. Alternative D2 was designed in part to maximize protection of polar bears specifically.
Brisson	Brook	Trustees for Alaska	80131	70	The MMPA achieves its purpose of protecting marine mammals from unpermitted incidental take through this process of ITRs and IHAs. The draft SEIS raises - but still does not answer - many questions as to how BLM and future lessees will be able to comply with these important procedural and substantive requirements.	In response to public comments, the FSEIS contains revised discussion clarifying the interplay between the leasing program and MMPA processes. Various lease stipulations and ROPs associated with one or more alternatives would impose mitigation, monitoring, and reporting requirements similar to those imposed through ITRs and IHAs concerning oil and gas activities occurring elsewhere in the Beaufort Sea region. Many questions concerning how BLM and future lessees (and other operators) will be able to comply with MMPA requirements cannot be answered until the nature, scope, location, and timing of proposed activities become known.
Brisson	Brook	Trustees for Alaska	80131	71	Regarding polar bears, though BLM acknowledges the MMPA protections for this species, its analysis fails to acknowledge that FWS has already authorized an extensive amount of take of the Southern Beaufort Sea (SBS) population. FWS has issued incidental take regulations for the taking of polar bears by oil and gas activities in the Beaufort Sea and along the coast, but these regulations expressly exclude and do not take into consideration potential oil and gas activities in the Arctic Refuge.(375) The current 2021-2026 Beaufort Sea ITR authorizes take of approximately half the SBS population by level B harassment making it unclear how any additional take of this population could be lawfully authorized for the Coastal Plain Leasing Program. As such, BLM should acknowledge this limitation and consider alternatives which would ensure no such lethal take would occur from the Leasing Program in the final SEIS. (375) 86 Fed. Reg. 42982 (Aug. 5, 2021).	The RFD scenarios created for the FSEIS entail various activities unfolding over the course of decades. It is premature, and beyond the scope of this NEPA analysis, to speculate on whether FWS could authorize the incidental take of polar bears resulting from hypothetical program-related activities in light of other hypothetical incidental take authorizations for polar bears that may or may not be in effect during the relevant timeframe.
Brisson	Brook	Trustees for Alaska	80131	72	As a practical matter, BLM does not expressly state whether the agency believes an ITR will be required for oil and gas leasing on the Coastal Plain. Groups are not aware at this time of any application for an ITR under consideration by the FWS for purposes of the Coastal Plain Leasing Program. Thus, BLM's repeated references to the ITR process and the protections it provides to polar bears on the Coastal Plain are improper and misleading to the public. BLM must clarify that ITRs or IHAs will be required for any ground-disturbing or other activities on leases with a potential to harass polar bears. Without clearly articulating when and for what activities ITRs or IHAs will be issued, BLM cannot assume future mitigation measures will be put in place via the ITRs and IHAs or fully comply with its NEPA obligation to "state how alternatives considered in it and decisions based on it will or will not achieve the requirements [of] other environmental laws and policies."(376) (376) 40 C.F.R. § 1502.2(d).	In response to various comments, portions of the Final SEIS discussing the ITR/LOA process and the potential influence of MMPA ITAs on impacts to polar bears have been revised for clarity and precision. The agencies maintain that information concerning other, similar North Slope oil and gas activities, including monitoring reports submitted pursuant to past MMPA ITAs, enhances our understanding of potential impacts to SBS polar bears from Program-related activities. Various lease stipulations and ROPs applicable to one or more alternatives would impose the types of mitigation, monitoring, and reporting requirements currently required by the FWS via incidental take authorization concerning other oil and gas activities outside of the program area but within the Beaufort Sea region. As noted in a separate comment response, it is premature to speculate on whether MMPA incidental take authorizations would be required for hypothetical activities of unknown type, scope, location, and timing (this will be considered on a case-by-case basis upon receipt of proposals), or to assume which mitigation measures will be prescribed in any MMPA ITAs for specific Program-related activities in the future (this is considered on a case-by-case basis pursuant to the Least Practicable Adverse Impact standard).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	73	Finally, BLM relies on future ITR protections for polar bears without articulating what specific measures would be necessary or effective or explaining at what stage of oil and gas activities it assumes which ITR protections would be required.(377) Similar to our concerns described in the ESA section above, BLM assumes for purposes of the draft SEIS that leasing itself presents no direct impacts on the environment. Thus, it is not clear at what stage - pre-leasing seismic testing, post-lease exploration, development, and/or production - that the potential protections from IHAs or ITRs (that are not yet developed) would apply. BLM further seems to assume that any mitigation required by ITRs would preclude negative impacts to polar bears, which is unrealistic and contrary to recent studies and research.(378) For example, BLM offers the conclusory assertion that future ITRs would ensure that oil and gas activities would only result in negligible impacts to polar bears, despite acknowledging that disturbance to denning females from seismic could cause major to moderate impacts where dens go undetected.(379) BLM cannot abdicate its responsibilities under NEPA to assess reasonably foreseeable impacts by relying on a future permitting process, undertaken by a private applicant and conducted under a different statute, to preclude those impacts. The SEIS must plainly state what specific mitigation measures it believes will be in place at which phase of oil and gas activities to protect marine mammals. BLM cannot not treat the MMPA as a loophole to avoid its obligation to fully consider impacts to marine mammals in this SEIS. (377) Infra Section VI.K (378) See infra Section VI.K.2 (379) DSEIS at 3-251.	In response to various comments, portions of the Final SEIS discussing the ITR/LOA process and the potential influence of MMPA ITAs on impacts to polar bears have been revised for clarity and precision. The agencies maintain that information concerning other, similar North Slope oil and gas activities, including monitoring reports submitted pursuant to past MMPA ITAs, enhances our understanding of potential impacts to SBS polar bears from Program-related activities. Various lease stipulations and ROPs applicable to one or more alternatives would impose the types of mitigation, monitoring, and reporting requirements currently required by the FWS via incidental take authorization concerning other oil and gas activities outside of the program area but within the Beaufort Sea region. As noted in a separate comment response, it is premature to speculate on whether MMPA incidental take authorizations would be required for hypothetical activities of unknown type, scope, location, and timing (this will be considered on a case-by-case basis upon receipt of proposals), or to assume which mitigation measures will be prescribed in any MMPA ITAs for specific Program-related activities in the future (this is considered on a case-by-case basis pursuant to the Least Practicable Adverse Impact standard). The effects analysis in the FSEIS does not rely on any measures that may or may not be required via future MMPA incidental take authorization processes.
Brisson	Brook	Trustees for Alaska	80131	74	The agencies must address how it will ensure compliance with the MBTA for an oil and gas program on the Coastal Plain, in particular with regards to the identification of the tracts to offer for lease.	The BLM requires operators to comply with all applicable federal, state, and local laws. Compliance with the MBTA only requires that no birds are deliberately killed and no nests deliberately destroyed, but there are no penalties for incidental take. None of the proposed actions include the deliberate destruction of birds or nests.
Brisson	Brook	Trustees for Alaska	80131	76	As it stands, it is very unclear what role the Board is playing in the development of the SEIS and how it is being consulted. Adopting an oil and gas program in the calving, post-calving, insect-relief, and migratory habitat of the Porcupine Caribou Herd is an activity that is "likely to cause significant long-term adverse impact on the Porcupine Caribou Herd or its habitat."(396) As such, the consultation process set out in the Agreement must be adhered to. The agencies and the Department of State should fully engage with the Board to solicit recommendations for the Leasing Program. Without doing so, it is unclear how BLM and FWS can ensure that the Arctic Refuge's purposes will be achieved, and importantly, how the United States will comply with its international obligations. (396) Agreement Between the Government of Canada and the Government of the United States of America on the Conservation of the Porcupine Caribou Herd.	The SEIS give due consideration to the IPCA and the joint lead agencies have coordinated with the IPCB. The joint lead agencies will continue to coordinate with the IPCB and work through DOI and the State Department to coordinate with the Government of Canada.
Brisson	Brook	Trustees for Alaska	80131	76	In addition, we note that while BLM and FWS acknowledge this purpose and identify specific resource sections where impacts to relevant treaties are analyzed,(397) the agencies do not separately evaluate whether they meet this individual purpose for each alternative. This additional analysis is critical and should be included in the final SEIS. (397) DSEIS at 1-5.	All alternatives are designed be compliance with federal law and policy. Specific impacts to species considered in these four agreements are detailed, by alternative, in their respective resource sections.
Brisson	Brook	Trustees for Alaska	80131	78	In assessing the effects of an oil and gas program on the Coastal Plain, BLM is required to consider the transboundary impacts on polar bears in the context of our international obligations under the 1973 Agreement on the Conservation of Polar Bears and the 1988 Inuvialuit-Inupiat Polar Bear Management Agreement in the Southern Beaufort Sea. (398) (398) Council on Environmental Quality Guidance on NEPA Analyses for Transboundary Impacts, http://ceq.hss.doe.gov/nepa/regs/transguide.html .	Transboundary impacts on polar bears are considered in Section 3.3.5 of the SEIS. The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada in relation to the Coastal Plain oil and gas program.
Brisson	Brook	Trustees for Alaska	80131	79	Unlike the 2020 Leasing Program, BLM acknowledges in the draft SEIS that it is obligated to consider how an oil and gas program in the Coastal Plain and its impacts on SBS polar bears will affect the quotas and management protocols established through the I-I Agreement. (406) But the SEIS nonetheless fails to analyze how the proposed oil and gas leasing program will affect polar bears and subsistence users in Canada because it simply points to requirements in future MMPA processes as precluding impacts to polar bears.(407) Again, BLM cannot abdicate its responsibilities under this treaty to assess and prevent impacts by relying on a future permitting process undertaken by a private applicant. Additionally, the draft SEIS fails to address how BLM will ensure adequate coordination with Canada to protect polar bears that will be affected by oil and gas leasing in the Arctic Refuge Coastal Plain. (406) DSEIS at 3-266. (407) Id.	Transboundary impacts on polar bears are considered in Section 3.3.5 of the SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Darvesh	Adil	-	80163	1	What happens to the coastal plains of the Arctic Refuge affects everyone, not just Americans. As Canadians, our values, our culture, and our heritage are inextricably tied to the future of the Arctic. The Porcupine Caribou Herd is both a wonder of the natural world, and an invaluable resource—one our two nations agreed to manage together under the International Porcupine Caribou Agreement. Choosing to unilaterally open the calving grounds of the Arctic Refuge to oil and gas leasing flies in the face of this agreement, and threatens the environmental and cultural future of all Canadians.	Inupiat and Gwich'in communities are specifically considered in the environmental justice section based on their identified use of relevant subsistence resources in Section 3.4.5. Other Gwich'in community impacts are discussed in the subsistence and sociocultural analyses (Sections 3.4.3 and 3.4.4, respectively), including indigenous Canadian communities.
Baran	Eleanor	-	80165	6	The Paris Agreement requires countries to submit NDCs on a five-year basis to communicate updates on increasing efforts to mitigate climate change for the global community. NDCs include actions each nation will assume to meet the Agreement's goals and establish greater climate resilience. The U.S.'s NDC, valid through 2030, states an economy-wide GHG reduction goal of 50 to 52% below 2005 levels in 2030, with 100% clean electricity by 2035. This target is reiterated in President Biden's 2022 Executive Order (EO) 14057 on Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability, which establishes several commitments by the Federal Government: "carbon pollution-free electricity sector by 2035 and net-zero emissions economy-wide by 2050." Development of the Leasing Program in the Coastal Plain threatens the U.S.'s stated goals under the NDC and both objectives of EO 14057, as the continued expansion of oil and gas projects delay electrifying the grid and emits GHGs that could otherwise be avoided. The most recent U.S. NDC also includes a commitment to reforestation, acknowledging the role maintaining natural vegetation plays in reducing GHG emissions and curbing climate change. Fulfilling this goal includes investing in federal and state forest protection and management programs. Though more specific details were not included in the NDC, it is evident that the development of the Coastal Plain would disrupt the natural ecosystem, destroying natural vegetation in the process. Once again, the Leasing Program would be noncompliant with the U.S.'s commitment to the Paris Agreement.	All alternatives are designed be compliance with federal law and policy.
Baran	Eleanor	-	80165	7	Beyond internal commitments stated in EOs, the US signed the Agreement on the Conservation of Polar Bears, along with Canada, Denmark, Norway, and the former USSR, in 1973. Article II of the Agreement asserts that participating countries shall take appropriate measures to protect the ecosystems of polar bears, a threatened species under the ESA. It expressly prohibits the "taking" of polar bears, including hunting, killing, and capturing. The agreement considers exceptions, including for scientific purposes, conservation, indigenous subsistence, and protection of other living organisms. Notably, the SEIS does not list oil and gas extraction as a viable exception. As such, it is assumed that if the Leasing Program ensues, the US will violate the Agreement on the Conservation of Polar Bears. Signed in 1987, the Agreement between the Government of Canada and the Government of the United States on the Conservation of the Porcupine Caribou Herd is, as the name suggests, to protect caribou. It aims to reduce the risk of disturbing the caribou and their habitat and associated long-term adverse effects, including cumulative impacts. The Agreement established a board with equal representation from Canada and the U.S., whose objective is to recommend actions that will serve the conservation goals of the Agreement. When the Coastal Plain Program was brought to the board's attention, U.S. board members deemed providing formal advice to the BLM was out of the scope of their jurisdiction, though the Canadian members unanimously disagreed. Though the Board announced no internal or external advice on the matter, the underlying tension between the U.S. and Canadian board members is evident, and moving forward with the Coastal Plain Program will jeopardize the integrity of this Agreement.	As noted in Section 1.9, the BLM would comply with all applicable international agreements, including the Agreement on the Conservation of Polar Bears, which is summarized in Appendix E. The U.S. imposes conservation measures for the polar bear under the MMPA and the ESA, as described in the SEIS. The joint lead agencies will continue to coordinate with the IPCB and work through DOI and the State Department to coordinate with the Government of Canada. The Final SEIS considers a multitude of mitigation measures designed to protect polar bears while complying with Section 20001(c)(1) of PL 115-97.
Baran	Eleanor	-	80165	13	Further, the Tax Act conflicts with the founding principles of the Arctic Refuge, which was established with non-market environmental values, focusing on protecting wildlife and natural processes, known as non-use values. Non-use values are characterized in three ways: existence, bequest, and option values. Existence values recognize a region's existence even if one never sees it first-hand. Bequest values ensure the area is protected for future generations, and option values require that the area be maintained to give people the option to visit in the future. These values prioritize the preservation of natural spaces for future enjoyment, which is fundamentally at odds with the oil and gas lease sale requirements under the Tax Act.	All action alternatives are designed to meet the purpose and need, and to account for all purposes of the Arctic National Wildlife Refuge, without weighing one purpose over another.
Baran	Eleanor	-	80165	14	The Tax Act, signed in 2017, overwrote not just the Alaska National Interest Lands Conservation Act (signed in 1980) but also ignored decades of international agreements protecting the environment and indigenous subsistence, including the Agreement between the Government of Canada and the Government of the United States on the Conservation of the Porcupine Caribou Herd, the Agreement on the Conservation of Polar Bears, and the Paris Agreement. If the development of the Coastal Plain Program ensues, irreparable damage to the U.S.'s international commitments will occur, and thus damage the country's international reputation.	The joint lead agencies are complying with international agreements between the U.S. and Canadian governments.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	42	While the Tribes agree with the overall interpretation of the 2,000-acre limitation, there are several specific areas where the draft SEIS is unclear regarding how BLM and USFWS intend to administer the 2,000-acre limitation. The agencies should adopt the following recommendations: -Clarify whether acres counted are "gravel surface acres" as measured at the top of gravel roads and pads or "tundra covered acres" as measured at the toes of the slopes of gravel fill areas. The Tribes urge the agencies to utilize "tundra covered acres" in the SEIS. -Regarding the exclusion of "elevated pipelines" from the 2,000-acre limit, the agencies should distinguish between single pipelines and multi-pipeline "pipe racks" as these have entirely different geometries and surface disturbance profiles when counting acreage for the 2,000-acre limit. Additionally, when pipelines intersect, extra disturbance acreage would be needed for valve nests, power transmission nodes, operator access platforms and walkways, and other maintenance infrastructure. -Ensure that the following infrastructure is included in the 2,000-acre limit calculation: 1. the entire base area of buildings constructed on piers elevated over tundra; 2. all structures directly in contact with the land surface (including snow fences, powerlines, telecom towers, bridge abutments and pilings); 3. all gravel fill footprints not specifically mentioned in the draft SEIS including construction equipment storage and materials laydown pads, ancillary gravel areas for gravel sorting, overburden storage; and 4. unintentionally expanded gravel road and pad surface areas due to maintenance practices.	Regardless of which alternative is selected in the ROD, per Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section." Project-specific NEPA would take into account acres of disturbance for facilities and infrastructure, such as those noted in the comment.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	44	BLM's 2018-2020 NEPA process did not adequately address international obligations. When drafting the final SEIS, BLM must take into account the Porcupine Caribou Herd Conservation Agreement, polar bear treaty obligations, and migratory bird treaty obligations. We appreciate that the draft SEIS contains sections on transboundary impacts to specific resource categories; however, more should be done to tie these transboundary impacts sections to compliance with international obligations. Moreover, while the draft SEIS acknowledges the need for an oil and gas leasing program to comply with international agreements, the draft SEIS fails to incorporate these obligations into its analysis, or the lack of compliance with such obligations, and instead relies on "subsequent NEPA processes before oil and gas activities are authorized, to ensure all requirements are met."(138) (138) Draft SEIS at 1-8.	The joint lead agencies are complying with international agreements between the U.S. and Canadian governments. All alternatives are designed be compliance with federal law and policy. Specific impacts to species considered in these agreements are detailed, by alternative, in their respective resource sections.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	45	One of Congress's express purposes for the Refuge is "to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats."(139) The Agreement was signed on July 17, 1987, by United States Secretary of the Interior Don Hodel and his Canadian counterpart Thomas McMillan. The Agreement recognizes that the Porcupine Caribou Herd: (139) Pub L. No. 96-487, § 303(2)(B)(ii). [R]egularly migrates across the international boundary between Canada and the United States of America and that caribou in their large free-roaming herds comprise a unique and irreplaceable natural resource of great value which each generation should maintain and make use of so as to conserve them for future generations. (140) (140) Agreement between the Government of Canada and the Government of the United States of American on the Conservation of the Porcupine Caribou Herd (July 17, 1987), www.treaty-accord.gc.ca/text-texte.aspx?id=100687 .	The joint lead agencies are complying with international agreements between the U.S. and Canadian governments.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	45	The agencies must address each of the Agreement's seven conservation obligations in the development of the final SEIS and the action alternatives' Lease Stipulations and Required Operating Procedures. Oil and gas leasing, together with subsequent related activities, would have significant long-term impacts on the Porcupine Caribou Herd and its calving and post-calving habitat. As such, the agency must, pursuant to the Agreement, notify and consult with Canada while developing its final SEIS. This effort needs to be done well in advance of the agencies' publication of the final SEIS in order to integrate information and data obtained during the consultation process into the SEIS.	The joint lead agencies are complying with international agreements between the U.S. and Canadian governments. The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada in relation to the Coastal Plain oil and gas program
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	46	The Agreement specifies several topics for the Board to address in its recommendations and advice. These topics raise relevant issues that should be considered in the SEIS: 1. The sharing of information and consideration of actions to further the objectives of this Agreement at the international level; 2. The actions that are necessary or advisable to conserve the Porcupine Caribou Herd and its habitat; 3. Cooperative conservation planning for the Porcupine Caribou Herd throughout its range; 4. When advisable to conserve the Porcupine Caribou Herd, recommendations on overall harvest and appropriate harvest limits for each of Canada and the United States of America taking into account the Board's review of available data, patterns of customary and traditional uses and other factors the Board deems appropriate; and 5. The identification of sensitive habitat deserving special consideration. In developing the final SEIS, the agencies must comply with the Agreement and utilize the Board to obtain its recommendations and advice regarding the proposed oil and gas leasing program in the Coastal Plain. In doing so, it is critically important that the Board have adequate opportunity to collect, share, and discuss all the relevant and most up-to-date information pertaining to the effects of oil and gas development on the Porcupine Caribou Herd and to make its recommendations before the agencies complete the final SEIS. Otherwise, the agencies' proposed action and alternatives would not reflect the input and recommendations of the Board. Furthermore, the agencies should develop additional Lease Stipulations and Required Operating Procedures beyond ROP 23.1, in consultation with the Board, that incorporate the Board's oversight and expertise into the action alternatives to ensure compliance with the Agreement.	The SEIS give due consideration to the IPCA and the joint lead agencies have coordinated with the IPCB. The joint lead agencies will continue to coordinate with the IPCB and work through DOI and the State Department to coordinate with the Government of Canada.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	47	The 1976 Agreement on the Conservation of Polar Bears between the United States and the governments of Canada, Denmark, Norway, and Russia recognizes the responsibilities of these circumpolar countries for coordinating actions to protect polar bears. Specifically, this multinational agreement commits each associated country to sound conservation practices by protecting the ecosystem of polar bears, with special attention to denning areas, feeding sites, and migration corridors based on best available science through coordinated research. The agencies must consider the United States' obligations under this treaty and ensure that any action taken in the leasing and potential development of the Coastal Plain complies with the treaty. The Tribes note that the Coastal Plain of the Arctic Refuge provides very important habitat for polar bears. The Coastal Plain has the highest density of onshore polar bear dens found anywhere in America's Arctic, and more and more bears are using onshore habitat as sea ice diminishes due to climate change. In developing the final SEIS's Lease Stipulations, Required Operating Procedures, and alternatives, the agencies must consider how such actions would affect polar bear denning areas, feeding sites, and migration corridors, including corridors between Alaska and Canada.	The joint lead agencies are complying with international agreements between the U.S. and other governments. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	48	All bird species that utilize the Arctic Refuge, with the exception of grouse and ptarmigan, are covered by the Migratory Bird Treaty Act of 1918 and its amendments.(147) Multiple species of migratory waterfowl from six continents rely upon the Coastal Plain lagoon and wetlands for nesting and breeding grounds, including threatened vulnerable species of Steller's Eiders. The migratory waterfowl flying north to the Coastal Plain represent one of the most important historic and contemporary subsistence species to the Neets'aai Gwich'in. Historically, the spring waterfowl harvest presented the first opportunity of the year to take fresh game after a long winter, ensuring that Tribal citizens avoided hunger during spring break-up. The return of waterfowl in the spring continues to be celebrated in Venetie and Arctic Village, with traditional lotteries and games associated with the first harvests of the year. (147) 16 U.S.C. §§ 703-712. Because of the critical importance of migratory birds to the Neets'aai Gwich'in, the agencies must conduct a comprehensive analysis in the final SEIS to ensure the impacts from leasing and infrastructure to all species are fully understood and mitigated, and to ensure compliance with the Migratory Bird Treaty Act of 1918.	The impacts of the proposed oil and gas program on migratory birds is detailed in Section 3.3.3, Birds. Additionally, Section 3.4.4, Subsistence, and Appendix F, ANILCA 810 evaluation, have been updated to consider impacts associated with subsistence use of waterfowl.
Adoko	Ashlee	State Of Alaska	80221	3	Section 1 - The State continues to maintain that the Leasing SEIS is unnecessary. The 2019 Coastal Plain Oil and Gas Leasing Program Environmental Impact Statement (2019 Leasing EIS) and resulting Record of Decision (2019 ROD) comply with applicable laws, are based upon decades of reliable data, and followed a federal National Environmental Policy Act (NEPA) process that involved State, federal, and local agencies, and stakeholders. In carrying out its directive under the Tax Act to develop and manage "a competitive oil and gas program for the leasing, development, production, and transportation of oil and gas in and from the Coastal Plain,"(2) over the course of more than two years, the BLM collaborated with the State as a Cooperating Agency,(3) and with federal and local agencies and stakeholders to conduct a robust evaluation of the potential effects of the Program. These efforts culminated in the 2019 Leasing EIS and 2019 ROD, which are based upon decades of reliable data and comply with all applicable laws. They lay the foundation for scientifically driven permitting processes for future oil and gas activities, which will require additional, project-specific analysis. And they provide lease stipulations and ROPs with which leaseholders must comply to ensure protection of the environment and other resources. (2) Pub. L. No. 115-97, Sec. 20001(b)(2)(A). Further, Congress directed that the prohibition in Alaska National Interest Lands Conservation Act (ANILCA) section 1003 on development and production of oil and gas "shall not apply to the Coastal Plain" (Pub. L. No. 115-97, Sec. 20001(b)(1)) and made it an ANWR purpose under ANILCA section 303(2)(B) "to provide for an oil and gas program on the Coastal Plain" (Pub. L. No. 115-97, Sec. 20001(b)(2)(B)). (3) Including the technical and regulatory experts of DNR, DEC, DFG, the State's ANILCA Program, and the Departments of Health and Social Services (ADHSS), Commerce, Community, and Economic Development (ADCCED), and Law. These significant efforts should be defended, not ignored and discarded. Requiring a new analysis, based upon no new environmental or social considerations but solely for policy purposes, has dismissed these significant efforts made to date by all stakeholders and brings needless regulatory costs and uncertainties. Claimed deficiencies (the purported justifications for the Leasing SEIS) have still not been articulated with any specificity and are pretextual. Secretarial Order 3401, drawing on the language of Executive Order 13990, claims to have identified legal deficiencies "in the underlying record," but goes no further than to identify them as insufficient analysis under NEPA by failing to analyze a range of alternatives and failure to properly interpret the surface use limitation in federal law. If there is any substance to this review, it has not been provided to the State or the public despite the exhaustive public process that produced the "flawed" result. By contrast, the Department of the Interior has defended the 2019 Leasing EIS and 2019 ROD in litigation, and no court has determined they are deficient.(4) (4) See Gwich'in Steering Comm. v. Bernhardt, Nos. 3:20-cv-00204-SLG, 3:20-cv-00205-SLG, 3:20-cv-00223-SLG, 2021 U.S. Dist. LEXIS 1471 (D. Alaska Jan. 5, 2021).	BLM development of a leasing program, to include the identification of lands available for leasing, is considered a major federal action pursuant to NEPA (see 40 CFR 1508.1).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Adoko	Ashlee	State Of Alaska	80221	6	Section 4 - The State encourages BLM's prioritization of lease sales. The Tax Act includes the binding legal mandate that there be multiple lease sales in the Coastal Plain, the first to be held not later than December 21, 2021, the second not later than December 21, 2024, and that at least 400,000 acres of the highest prospectivity acreage be offered in lease sales.(13) (13) Pub. L. No. 115-97, Sec. 20001(c)(1)(B)(ii), 131 Stat. 2054 (2017). Although the first lease sale was held within the deadline, Department of the Interior's obstructionist policy (Secretary Order 3401, June 1, 2021(14)) caused relinquishment of leases and the improper(15) termination of the remaining leases in 2023. Because the Department of the Interior's policy and actions nullified the first lease sale, two lease sales must be held by December 22, 2027, for the Department to adhere to the spirit of the Tax Act's mandates. (14) https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3401-comprehensive-analysis-and-temporary-halt-on-all-activities-in-the-arctic-national-wildlife-refuge-relating-to-the-coastal-plain-oil-and-gas-leasing-program.pdf . (15) https://www.aidea.org/Portals/0/PressReleases/10-18-2023%20AIDEA%20Holds%20DOI%20Accountable%20Press%20Release%20Final.pdf The first lease sale saw little participation, and no participation from major oil and gas companies. Future lease sales may not see any participation at all. This is not because there is no interest or potential in the Coastal Plain area. It is because the federal government has shown itself to be a bad-faith partner in exploration and development of resources. This process for the Coastal Plain is exacerbating that perception and thwarting Congress' clear intent that the Secretary lease the Coastal Plain for oil and gas development. Policies that discourage exploration and development have lasting effects on industry and the economy and endanger the energy security of our nation. The State encourages BLM's prioritization of lease sales in the Coastal Plain in fulfillment of the Tax Act, to honor needed investments, to allow critical revenues to flow to both Alaska and the U.S. Treasury, to support enhanced North Slope infrastructure, and to keep TAPS fully operational.	The BLM conducted its first lease sale in the Coastal Plain on January 6, 2021. A total of nine tracts were leased in this first lease sale. This sale met the requirements of Section 20001(c)(3) of PL 115-97.
Adoko	Ashlee	State Of Alaska	80221	10	The interpretation of the 2,000-acre facility limit is faulty. In the Tax Act, Congress directed that the prohibition in ANILCA section 1003 on development and production of oil and gas "shall not apply to the Coastal Plain"(30) and instead announced an Arctic National Wildlife Refuge (ANWR) purpose under ANILCA section 303(2)(B) "to provide for an oil and gas program on the Coastal Plain."(31) Further, Congress affirmatively mandated establishment of an "oil and gas program for the leasing, development, production, and transportation of oil and gas in and from the Coastal Plain."(32) To carry out these provisions, Congress directed that the Secretary "shall issue any rights-of-way or easements across the Coastal Plain...necessary to carry out this section"(33) and "shall authorize up to 2,000 surface acres of federal land on the Coastal Plain to be covered by production and support facilities..."(34) (30) Pub. L. No. 115-97, Sec. 20001(b)(1), 131 Stat. 2054 (2017). (31) Pub. L. No. 115-97, Sec. 20001(b)(2)(B), 131 Stat. 2054 (2017). (32) Pub. L. No. 115-97, Sec. 20001(b)(2)(A), 131 Stat. 2054 (2017). (33) Pub. L. No. 115-97, Sec. 20001(c)(2), 131 Stat. 2054 (2017). (34) Pub. L. No. 115-97, Sec. 20001(c)(3), 131 Stat. 2054 (2017). In the 2019 ROD, BLM correctly interpreted Section 20001(c)(3) as Congress' "directive" that BLM "must not deny or unreasonably limit development of production and support facilities on the Coastal Plain until 2,000 surface acres are covered by production and support facilities."(35) Furthermore, BLM correctly concluded that "exploration facilities" do not constitute "production and support facilities" and therefore are not subject to the 2,000-acre limitation.(36) The plain and unequivocal language of the Tax Act does not allow BLM to reach an alternative interpretation of Section 20002(c)(3). Moreover, no court has invalidated or even criticized BLM's interpretation of Section 20002(c)(3). (35) 2019 ROD at 10. (36) 2019 ROD at 11.	Per Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section." See Section 1.10.1 of the Final SEIS
Adoko	Ashlee	State Of Alaska	80221	11	Additionally, in the 2019 Leasing EIS, BLM properly assumed, for analytical purposes, that reclamation of federal land formerly containing production and support facilities would free up additional acreage to be subject to the 2,000-acre limit in Section 20001(c)(3) once the land is reclaimed. BLM, however, declined to either adopt or reject this interpretation in the 2019 ROD.(37) Although the State maintains that the analytical assumptions in the 2019 Leasing EIS correctly apply the 2,000-acre limit, the State respects BLM's decision to defer determining how to apply the limit until it is reached and, further, lands are reclaimed. The 2019 Leasing EIS, however, properly analyzed the impacts of the more flexible application of the 2,000-limit in the interest of administrative efficiency to avoid later triggering the need for additional environmental review. (37) 2019 ROD at 13.	Section 1.10.1 details the 2,000 acre facility limit per Section 20001(C)(3) of PL 115-97; the analyses in the Final SEIS reflect this interpretation.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Adoko	Ashlee	State Of Alaska	80221	12	Finally, Section 20001(c)(2) of the Tax Act requires BLM to authorize rights-of-way (ROWs) and easements for exploration and production facilities that are in addition to the 2,000 acres of federal land on the Coastal Plain for production and support facilities. In Section 20001(c)(2), Congress required that BLM "issue any rights-of-way or easements across the Coastal Plain for the exploration, development, production, or transportation necessary to carry out" the Program.(38) Such ROWs and easements are not subject to the 2,000-acre limitation.(39) As BLM recognized in the 2019 Leasing ROD, "[c]learly Congress intended that successful implementation of the mandated [Program] should not be frustrated by an unavailability of necessary access." Because inclusion of ROWs or easements for exploration and production purposes in the 2,000-acre authorization would frustrate adequate access to federal land on the Coastal Plain, this access cannot count against the 2,000-acre limitation. (38) Pub. L. No. 115-97, Sec. 20001(c)(2), 131 Stat. 2054 (2017). (39) These are separate and distinct statutory provisions, each addressing independent and mandatory requirements for executing the Program. By addressing the 2,000 surface acres to be covered by "production and support facilities" separate and distinct from ROWs or easements, Congress intended that such "production and support facilities" on ROWs or easements not count toward the 2,000-acre limitation, but be in addition to any federal lands subject to ROWs or easements "for the exploration, development, production, or transportation necessary to carry out" the Program. This is consistent with the Joint Explanatory Statement of the Committee of Conference, which says, "The legislation directs the Secretary to issue any necessary rights-of-way or easements across the Coastal Plain for the exploration, development, production, or transportation associated with the oil and gas program. Additionally, the section authorizes the development of up to 2,000 surface acres of federal land on the Coastal Plain." H.R. Rep. No. 115-466, at 675 (2017) (emphasis added). For this reason, surface acres needed for seismic activities cannot be counted against the 2,000-acre limit. Similarly, the Lead Agencies must give the State and private owners "such rights as may be necessary to assure adequate and feasible access for economic and other purposes to State owned and privately owned land"(40) without counting against the surface acres needed therefore against the surface acres cap. (40) ANILCA Sec. 1110(b).	Per Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section." As noted in Section 1.10.1, the BLM interprets this to include ROW, which are considered production and support facilities.
Adoko	Ashlee	State Of Alaska	80221	18	The State's input on areas to include in lease sales. The total acreage of the Coastal Plain should be open to lease sales to ensure BLM's full compliance with the Tax Act. The State supports environmentally responsible oil and gas activities, consistent with the State's mandate under the Alaska Constitution, Article 8, Section 1, that it is to "encourage...the development of its resources by making them available for maximum use consistent with the public interest." To functionally allow leasing of the highest prospectivity acreage, all areas of the Coastal Plain must be open for leasing given the limited modern data and information about its resource potential. The Lead Agencies should not rely on limited or outdated subsurface data to determine which acreage of the Coastal Plain to open, close, or limit to surface occupancy, because such reliance does not fully allow for identification or development of "those areas that have the highest potential for the discovery of hydrocarbons," as are required to be included in the upcoming mandatory lease sale.(50) (50) Pub. L. No. 115-97, Sec. 20001(c)(1)(B)(i), 131 Stat. 2054 (2017). Instead, the Lead Agencies should open the total acreage of the Coastal Plain to oil and gas leasing and allow early area-wide exploratory seismic work so that the highest prospectivity acreage can be identified. Without the future ability to lease, companies are unlikely to expend resources conducting exploratory seismic surveys in the unleaseable areas, thus eliminating a valuable opportunity to update assessments of the subsurface resource potential. The Lead Agencies should also recognize that any activity beyond leasing would be subject to additional, robust, site-specific NEPA analyses and permitting processes that establish the terms and conditions and mitigation measures, and thus those considerations are not appropriate at the Leasing SEIS stage. Because Alternatives C and D would close large areas to leasing, the State opposes these alternatives. The State does not object to including in lease sales the area (formerly Tract 29; the disputed area) subject to administrative appeals brought by the State, pending before the Interior Board of Land Appeals (IBLA 2016-109 and IBLA 2017-55), as well as the subject of a lawsuit filed by the State in the U.S. District Court of Alaska (State of Alaska v. U.S. Department of the Interior; Docket No. 3:22-cv-00078-SLG); however, subject to the State's reservation of its position that the disputed area is not part of the Coastal Plain. The State's consent to including the disputed area in lease sales is subject to the State's reservation of its position that the disputed area is not within the boundaries of ANWR, and therefore is not part of the Coastal Plain under the Tax Act. The State's position that the disputed area is outside the boundaries of ANWR is the subject of an ongoing litigation between the State and BLM.	Alternative B considers the entire Coastal Plain as available for leasing. The SEIS provides a range of alternatives, all of which are in compliance with Section 20001(C)(3) of PL 115-97.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Grafe	Erik	Earthjustice	80222	1	Under the Refuge Act, the Secretary cannot "initiate or permit a new use of a refuge . . . unless the Secretary has determined that the use is a compatible use."(1) This finding must be made in writing, after adequate opportunity for notice and comment.(2) The 2020 FEIS and record of decision (ROD) violated the Refuge Act by failing to include a compatibility determination for the Program, and the Secretary was sued over that failure.(3) The DSEIS repeats that error. (1) 16 U.S.C. § 668dd(d)(3)(A)(i). (2) Id. § 668dd(d)(3)(B); 50 C.F.R. § 26.41. (3) See, e.g., Compl. (paragraph) 62-66, Nat'l Audubon Socy' v. Bernhardt, No. 3:20-cv-00205-SLG. (D. Alaska filed Aug. 24, 2020) (ECF No. 1); First Amended Compl.(paragraph) 67-71, Nat'l Audubon Socy' v. Bernhardt, No. 3:20-cv-00205-SLG (D. Alaska filed Nov. 16, 2020) (ECF No. 21). The Tax Act did not negate the requirement for a compatibility finding. Congress made clear, in the Alaska National Interest Lands Conservation Act (ANILCA), that "oil and gas leasing" is the type of "use" for which a compatibility finding is required.(4) The Tax Act added "an oil and gas program on the Coastal Plain" as a Refuge purpose.(5) But the Refuge Act distinguishes between a "purpose" and a "use."(6) The Program is the "use" to the Tax Act's added "purpose," and, as such, the Secretary must make a compatibility determination before approving that "use."(7) The time to do so is the final supplemental environmental impact statement for the Program. (4) Pub. L. No. 96-487, § 304(b), 94 Stat. 2371 (1980). (5) Pub. L. No. 115-97, § 20001(b)(2)(B), 131 Stat. 2054, 2236 (2017). (6) See 16 U.S.C. § 668dd(d)(1)(A). (7) In particular, the Program is "Refuge use" because it would be a "Refuge management economic activity" intended to "result[] in generation of a commodity which is or can be sold for income or revenue or traded for goods or services." See 50 C.F.R. § 25.12. Even if the Secretary could somehow delay the compatibility finding until after the ROD, it is important that she not do so. The Secretary is setting the contours of the Program now. Now-before any leases are offered or commitments made-is the time for the Secretary to ensure that the Program as adopted is compatible with all the Refuge's purposes.(8) The Program will be "compatible" only if "in the sound professional judgment of the Director, [it] will not materially interfere with or detract from the fulfillment of the mission of the System or the purposes of the [R]efuge."(9) The DSEIS, like the FEIS before it, contains information documenting the tradeoffs between oil and gas development and the other Refuge purposes. What is absent, however, is formal documentation that the Secretary has considered those tradeoffs and found that all aspects of the Program-from exploration through development and production-will not materially interfere with or detract from the Refuge's purposes. Without that determination up front, the Program-or at least any "uses" under it-cannot proceed. (8) This includes the original wildlife-, wilderness-, and recreational-preservation purposes set forth in Public Land Order 2214, 25 Fed. Reg. 12,598, 12,598-99 (Dec. 9, 1960), as well as those set forth in ANILCA § 303(2)(B): conserving fish and wildlife populations and their habitats; fulfilling U.S. treaty obligations related to fish, wildlife, and their habitats; providing, consistent with other ANILCA provisions, "the opportunity for continued subsistence uses by local residents"; and ensuring necessary water quality and quantity within the Refuge. (9) 16 U.S.C. § 668ee(1).	The Coastal Plain oil and gas program will be managed by the BLM, under Section 20001(a)(1) of PL 115-97. Compatibility determinations stem from the Refuge Administration Act, which only applies to the USFWS' management of refuges. All action alternatives are designed to meet the purpose and need, and to account for all purposes of the Arctic National Wildlife Refuge. The USFWS CCP (2015) may be revised in the future to address the five purposes of the Refuge, as amended by Section 20001(c)(1) of PL 115-97, and their management strategies.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Grafe	Erik	Earthjustice	80222	12	Interior has authority to impose a measure restricting the exploration and development of leases pending a conclusion that fossil fuel production on the leases is consistent with reducing greenhouse gas emissions to meet climate commitments. Including a climate measure in Refuge leases is compelled by the principle that must guide Interior's development and adoption of a Program-its compatibility with all Refuge purposes, as described above.(30) It also furthers the other land-management authorities that inform Interior's development of the Program: (30) Supra p. 2-3. -It is consistent with the Tax Act, which SEIS a schedule for lease sales but does not require exploration or development of leases on any schedule.(31) It also would help Interior meet its obligations under the Refuge Act to fulfill the Refuge's non-oil purposes, kept in place by the Tax Act,(32) by reducing the damage done to the Refuge by greenhouse gas-induced climate change. (31) See Pub. L. 115-97, § 20001(c)(1)(B)(ii) scheduling lease sales only). Indeed, while the Tax Act requires holding a lease sale, it does not require issuing leases at all. Interior recognized this during its initial lease sale, where it explicitly noted it "reserved [] the right to reject any and all bids received for any tract, regardless of the amount offered." Interior, Coastal Plain Oil and Gas Leasing Program, Amendment to the Detailed Statement of Sale at 3 (Dec. 18, 2020). This approach is consistent with Interior's general authority to decide which bids to accept, see 43 C.F.R. § 3132.5(b), and obligation to ensure the federal government receives fair value for all use of public lands, see 43 U.S.C. §§ 1701(a)(9), 1713(d). (32) Supra pp. 2-3. -It is consistent with the Mineral Leasing Act, which requires that all leases include "provisions as [the Interior Department] deem[s] necessary . . . for the protection of the interests of the United States . . . and for the safeguarding of the public welfare."(33) (33) 30 U.S.C. § 187. -It is consistent with the Federal Land Policy and Management Act, which declares a national policy that "public lands be managed in a manner that will protect the quality of . . . air and atmospheric . . . values,"(34) and directs Interior "by regulation or otherwise, [to] take any action necessary to prevent unnecessary or undue degradation of the lands."(35) (34) 43 U.S.C. § 1701(a)(8). (35) 43 U.S.C. § 1732(b). Congress also directed the BLM to manage public lands to prevent "permanent impairment of the . . . quality of the environment." Id. § 1702(c); see also Mineral Poly' Ctr. v. Norton, 292 F.Supp.2d 30, 42 (D.D.C. 2003) ("FLPMA, by its plain terms, vests the Secretary of the Interior with the authority-and indeed the obligation-to disapprove of an otherwise permissible mining operation because the operation . . . would unduly harm or degrade the public land."). -It is also consistent with the Naval Petroleum Reserves Production Act, which provides that "[oil and gas a]ctivities . . . shall include or provide for such conditions, restrictions, and prohibitions as the Secretary [of the Interior] deems necessary or appropriate to mitigate reasonably foreseeable and significantly adverse effects on the surface resources of the [National Petroleum Reserve-Alaska (Reserve)]."(36) Interior's regulations for the Reserve provide that Interior "shall take such action . . . as [the authorized officer] deems necessary to mitigate or avoid unnecessary surface damage and to minimize ecological disturbance throughout the reserve."(37) Consistent with this authority, standard leases in the Reserve provide that Interior may "specify rates of development and production in the public interest" and impose measures to "minimize[] adverse impacts" to ecological and cultural resources.(38) (36) 42 U.S.C. § 6506a(b); see also id. §§ 6503(b), 6504(a). (37) 43 C.F.R. § 2361.1(a); see also id. § 2361.1(e)1.; id. § 3135.2(a)1., 3.; N. Alaska Env't Ctr. v. Kempthorne, 457 F.3d 969, 976 (9th Cir. 2006) (BLM "can condition permits for drilling [in the Reserve] on implementation of environmentally protective measures"). The unitization regulations also acknowledge "BLM's authority to set or modify the quantity, rate, and location of development and production," 43 C.F.R. § 3137.21(a)4., and to reject development plans, id. § 3137.73(b). (38) See, e.g., Interior, National Petroleum Reserve - Alaska, Oil and Gas Lease Sale 2019, Detailed Statement of the Sale, Ex. I §§ 4, 6 (2019).	Section 20001(a)(1) of PL 115-97 requires the development of an oil and gas program on the Coastal Plain that allows for exploration, development and production. Additionally, protections or restrictions are best considered when specific projects are proposed and project-specific analyses can be completed.
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	8	Though not the direct inquiry of this comment period, we must address this Administration's action to cancel leases in ANWR. The Department has simply claimed that the Secretary's action was permissible because she has the legal authority to cancel oil and gas leases issued in violation of a statute or regulation. Claiming that this present Draft SEIS demonstrates that the 2021 lease sale was flawed and based on legal insufficiencies, the Secretary determined that the leases would be canceled. However, in the absence of any public documentation outlining the legal reasoning behind (and authorities supporting) this determination-which, for the reasons stated above, our entities take serious issue with-we cannot properly respond to such claims, and we therefore reject them. In taking such drastic action as to cancel lawfully issued leases, this Administration must provide the basis for such conclusions and consider the implications of such actions on the people of the North Slope.	The leases were cancelled in light of serious legal deficiencies identified by the DOI in the underlying record supporting issuance of the leases. The decision to cancel the existing leases within the Coastal Plain area is outside the scope of the SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	9	Although the Draft SEIS acknowledges that "this Leasing SEIS will guide one or more future oil and gas lease sales," the Draft SEIS also "assumes" that the next lease sale "following issuance of the Leasing SEIS ROD . . . would be offered in the second lease sale required by the Tax Act." (15) We think this is in error. The January 6, 2021 lease sale was nullified by the Secretary, and the Agencies must acknowledge that the next lease sale will constitute the "initial" lease sale directed by Congress in the Tax Act. Given Congress's directive to conduct two lease sales totaling "not fewer than 400,000 acres area-wide in each lease sale" within seven years of the enactment of the Tax Act. the Agencies should also articulate a plan for the second lease sale. Relatedly, Alternative D, as drafted, makes available only 765,800 acres for lease, which appears to account for the "seven lease tracts that are under lease, totaling 365,755 acres" and an additional 400.000 acre lease sale. In light of the fact that the seven lease tracts are no longer under lease, and the fact that the original lease sale has been voided by the Department. Alternative D must be amended to make available at least 800.000 total acres for lease so that the Agencies are able to comply with Congress' directive. (15) Draft SEIS at 1-8 (emphasis added).	Sections 1.1 and 1.2 have been updated to reflect the current status of leases on the Coastal Plain and the second lease sale. The BLM conducted its first lease sale in the Coastal Plain on January 6, 2021. A total of nine tracts were leased in this first lease sale. This sale met the requirements of Section 20001(c)(3) of PL 115-97.
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	11	BLM's Interpretation of the 2,000 Surface Acre Limitation We disagree with key aspects of the Agencies' interpretation of the 2,000 surface acre limitation established in the Tax Act. The relevant statutory language states: SURFACE DEVELOPMENT-In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section.(16) (16) Pub. L. No. 115-97 at § 20001(c)(3). As an initial matter, we strongly disagree with the Agencies' decision to cap total surface disturbance at 1,464 acres under Alternative C and at 1,040 acres under Alternative D. The Final EIS evaluated the potential environmental impacts of action alternatives up to 2,000 acres of surface development, representing the upper limit on the potential for surface disturbance from development. Contained within that analysis were options to develop less than this upper limit on surface development. In other words, BLM does not need to conduct further analysis of lesser acreage of surface development in the SEIS it has already completed this analysis in the Final EIS. There is simply no reason, at this stage of the environmental analysis and in the absence of any project-specific analysis, to arbitrarily limit total surface acre beyond the statutory limit already in place. The Agencies also conclude that "[o]nce 2,000 acres of disturbance are reached, no additional disturbance would be allowed, regardless of reclamation of previously disturbed areas."(17) We disagree with this approach. The phrase "during the term of the leases". simply imposes a temporal framework for the calculation of surface acreage; the phrase "covered by" makes clear that the 2,000 acre limitation reaches only those acres actually covered, and not to the cumulative existence of all such facilities over time. (17) Draft SEIS at 1-9. We disagree with the Agencies' interpretation that the 2,000 surface acre limitation in Section 20001(c)(3) would apply to facilities that are "primarily used for the purpose of development, production, and transportation of oil and gas in and from the Coastal Plain."(18) This interpretation is contrary to the explicit terms of the statutory provision, and erroneously expands the scope of facilities subject to the acreage limit beyond the "production and support facilities" identified by Congress. We also disagree with the Agencies that gravel mines should count towards the limit. As such, only oil and gas production facilities, and the facilities that support such production, should be included within the 2,000 surface acre limit. (18) Id. at 1-6 (emphasis added). As support, BLM appears to rely on Section 20001(c)(2) of the Tax Act. which allows BLM to issue rights-of-way or easements for "the exploration, development. production. or transportation necessary to carry out this section." This is a separate authorization that is distinct from the 2,000 surface acre limit imposed by Section 20001(c)(3).	Regardless of which alternative is selected in the ROD, per Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section." The BLM interprets this provision as limiting to 2,000 the total number of surface acres of all federal land across the Coastal Plain, regardless of whether such land is leased, which may be covered by production and support facilities. Once 2,000 acres of disturbance are reached, no additional disturbance would be allowed, regardless of reclamation of previously disturbed areas.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Wardlow	Cyndi	The Wildlife Society- Alaska Chapter	80261	4	Compliance with Caribou Treaty Obligations. One of ANILCA's four added values of the Refuge includes "to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats." Such an international agreement exists currently between the governments of Canada and the United States for the conservation of the Porcupine Caribou Herd, signed in 1987.(7) This agreement obliges both countries to enact important protections for caribou and subsistence caribou users on both sides of the Canada-US border. It states that "the Porcupine Caribou Herd regularly migrates across the international boundary between Canada and the United States of America and that caribou in their large free-roaming herds comprise a unique and irreplaceable natural resource of great value which each generation should maintain and make use of so as to conserve them for future generations." This agreement identifies the importance of conserving habitat on an landscape level in order to protect this long-ranging, migratory species. This "include[es] such areas as calving, post-calving, migration, wintering and insect relief habitat," and specifically defines the herd's habitat as "the whole or any part of the ecosystem, including summer, winter and migration range, used by the Porcupine Caribou Herd during the course of its long-term movement patterns." The agreement contains language that imposes stipulations for both nations, should the PCH potentially be affected. It mandates "tak[ing] appropriate action to conserve the Porcupine Caribou Herd and its habitat." It further requires consultation between countries should one country take any action that "is determined to be likely to cause significant long-term adverse impact". (7) Agreement Between the Government of Canada and the Government of the United States of America on the Conservation of the Porcupine Caribou Herd, U.S.-Can. July 17, 1987, E100687-CTS 1987 No. 31, available at http://www.treaty-accord.gc.ca/text-texte.aspx?id=100687 . The agreement established a board to make recommendations on any activities that "could significantly affect the conservation of the Porcupine Caribou Herd or its habitat." While they have developed comments that adopting an oil and gas program will "likely to cause significant long-term adverse impact on the Porcupine Caribou Herd or its habitat," notably absent in the draft SEIS is the incorporation of the board's recommendation or meaningful commentary therein, especially as relates to each proposed alternative. The agencies should fully engage with the board to inform decisions for a potential leasing program. Without doing so, it is uncertain how Agencies can ensure that all the Refuge's purposes will be achieved with no purpose being "superseded" by any others, without compliance to its international treaty obligations.	The SEIS give due consideration to the IPCA and the joint lead agencies have coordinated with the IPCB. The joint lead agencies will continue to coordinate with the IPCB and work through DOI and the State Department to coordinate with the Government of Canada.
Von Seggern	Dan	Washington State Attorney General's Office	80273	5	The 2023 DSEIS correctly applies the 2000-acre limit as a maximum, and includes two alternatives that would limit surface occupancy to less than 2000 acres. The DSEIS also properly clarifies that the 2000-acre limitation includes facilities such as gravel pads for production, processing, or lodging facilities, gravel airstrips or roads, and gravel berms or piers that support pipelines, which the 2020 ROD unlawfully excluded from inclusion as "production and support facilities" for purposes of the 2017 Tax Act.(65) The DSEIS also correctly includes roads authorized by a right of way (ROW) grant towards the 2000-acre limit.(66) The States agree that these facilities are properly included within the 2000-acre limit under the plain language of the 2017 Tax Act. The States remain concerned over the exclusion of ephemeral facilities from the 2000-acre limit. For example, ice roads, which would not count toward the limit in BLM's calculation, can have lasting effects on local hydrology.(67) Minimizing use of such ephemeral structures would minimize these impacts. 62 Section 20001(c)(1)(B)(3) of Public Law (PL) 115-97. (65) 2023 DSEIS at 1-9. (66) Id. (67) See 2023 DSEIS at 3-98 ("[i]ce roads and pads may alter natural drainage patterns, obstruct flow, affect channel stability or alignment, and lead to erosion and sedimentation" (internal citation omitted)).	Potential impacts from construction and use of ice roads on resources are considered in Chapter 3. Project-specific impacts would be considered when there is a application for specific activities.
Miller	Debbie	-	80286	2	In reading the SEIS, it's clear that oil and gas exploration, development and production, under alternatives B, C, and D will violate the existing purposes of the Arctic Refuge: 1) conserve fish and wildlife populations and their habitats in their natural diversity; 2) fulfill international treaty obligations, such as the 1973 Polar Bear Treaty signed by five nations, and the U.S.-Canada Porcupine Caribou Herd Treaty; 3) to provide an opportunity for local residents to continue their subsistence way of life, and 4) to protect water quality and its quantity within the Refuge Unless BLM and the USFWS desire to intentionally break our treaty obligations, our purposes for establishment, the Endangered Species Act, the Marine Mammal Protection Act, and the National Wildlife Administrative Act, you must recommend to the Biden administration that Alternative A is the only valid alternative.	All action alternatives are designed to meet the purpose and need, and to account for all purposes of the Arctic National Wildlife Refuge, without weighing one purpose over another.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	14	The SEIS ignores each of these statutory provisions in the 2027 Tax Act. AIDEA requested permission from BLM to commence exploratory work on its leases, but was denied access. The SEIS does not acknowledge that the Secretary is required to issue AIDEA an ROW for exploration, for example.	Authorizations for exploration or ROWs would require site-specific analyses and can more realistically be provided when the BLM receives an application to permit such infrastructure. The Leasing SEIS makes no decisions on such infrastructure, except to prohibit it in specified areas of particularly high value surface resources under some alternatives.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	17	Section 20001 further requires the Secretary to conduct at least two area-wide lease sales within the 10-year budget window-the first lease sale within four years of the Act's enactment and the second lease sale within seven years of enactment. Each lease sale must contain not fewer than 400,000 acres and be comprised of those areas that have the highest hydrocarbon potential. The legislation directs the Secretary to issue any necessary rights-of-way or easements across the Coastal Plain for the exploration, development, production, or transportation associated with the oil and gas program. Additionally, the section authorizes the development of up to 2,000 surface acres of federal land on the Coastal Plain. The statute mandates the DOI to issues rights of way for exploration, development, production, or transportation necessary to get oil and gas out of the Coastal Plain in a commercially reasonable way under reasonable conditions. It does the same for the mandatory language on surface development. This is particularly important because DOI in the SEIS asserts it has discretion to limit the amount of area developed to UNDER 2,000 acres, but this is not what the statute provides. The Secretary "shall authorize up to 2,000 surface acres of federal land" (emphasis added) to be used for development. There is no discretion granted to authorize a lesser amount than 2,000 acres if 2,000 acres is requested. The SEIS should assume 2,000 acres will be developed. See FRA § 2001 (c)(3).	Per Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section."
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	18	In the 2017 TCJA, the Secretary has to offer the leases up for sale, has to administer a program of oil and gas development, has to approve rights-of-way, has to include a minimum of 400,000 acres per sale, and has to authorize up to 2000 acres of surface development at the "production" stage. TCJA § 20001(c). The Secretary lacks discretion to undercut the direction from Congress to have a program, to offer the leases, to include at least 400,000 acres, etc., and therefore, under the FRA § 111(10), codified at 42 U.S.C. § 4332(e)(10), defining "major federal action," the ANWR lease sale is not subject to NEPA. See 42 U.S.C. § 4332(2)(C) (requiring EISs be prepared for "major Federal actions"). Also, the analysis of alternatives used in the SEIS with less than 2000 acres "for production and support facilities" is premature. TCJA § 20001(c)(3). Construction of production and related support facilities only occurs at the production stage. AIDEA is at the leasing stage, which is not even at the exploration stage yet. Because there will be no surface development for purposes of production or related support facilities at this time, the alternatives used in the SEIS are inapplicable to the facts presented. Further, any surface disturbance limited to exploration will require follow-up NEPA approvals.	Per Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section."
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	19	One issue of the ANWR SEIS is how to interpret the 2017 TCJA's clause allowing "up to" 2,000 acres of production and support facilities. TCJA § 20001(c)(3). DOI correctly interpreted the 2,000-acre clause in the 2020 ROD. The clause allows the leaseholder(s) to construct production and support facilities covering "up to" 2,000 acres, leaving the leaseholders discretion to utilize less acreage. Thus, the statutory discretion to disturb less than 2,000 surface acres in the phrase "up to" lies with the Lessee(s), not DOI. However, the SEIS misinterprets the "up to" 2,000 acres provision. SEIS 1.9.1. The "up to" language of the clause cannot be read as allowing DOI the discretion to defeat the Congressionally-mandated oil and gas program through DOI capping the leaseholder(s) at some arbitrary figure substantially less than 2,000 acres. Moreover, no provision in the leases addressed interpretation of the 2,000-acre clause. Although this comment is redundant to a prior comment above, the statute mandates the DOI to issue rights of way for exploration, development, production, or transportation necessary to get oil and gas out of the Coastal Plain in a commercially reasonable way under reasonable conditions. It does the same for the mandatory language on surface development. This is particularly important because DOI in the SEIS asserts it has discretion to limit the amount of area developed to UNDER 2,000 acres. This is not what the statute provides. The Secretary is mandated to "authorize up to 2,000 surface acres of federal land" to be used for development. There is no discretion granted to authorize a lesser amount than 2,000 acres if 2,000 acres is requested. The EIS should assume 2,000 acres will be developed. See FRA § 2001 (c)(3).	Per Section 20001(C)(3) of PL 115-97, "In administering this section, the Secretary shall authorize up to 2,000 surface acres of Federal land on the Coastal Plain to be covered by production and support facilities (including airstrips and any area covered by gravel berms or piers for support of pipelines) during the term of the leases under the oil and gas program under this section."
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	20	Another flaw in the SEIS is that it does not address and ignores the binding compact that made Alaska a State. Congress offered Alaska statehood on certain terms, including that Alaska would receive not only lands but also the minerals on those lands, the right to develop those resources, and the right to regulate that development. Alaskans accepted that offer via a statewide vote. Alaska Division of Elections, Statehood Election Final Results, https://perma.cc/86TW-CHAB . This compact binds all components of the United States-including Congress and federal agencies-and cannot be unilaterally changed by the federal government. The Statehood Act's text, context, and legislative history all confirm that Congress's intent was to give Alaska the prerogative to use and develop natural resources on the lands granted or leased to the State. And Congress reiterated later in the Alaska National Interest Lands Conservation Act (ANILCA) that no more federal withdrawals of land from resource development would occur. The SEIS effectively prevents any development of the ANWR leases held by AIDEA, and the subsequent cancellation of the AIDEA lease, in effect, breaches the compact with the State of Alaska and AIDEA as a wholly owned entity of the State of Alaska.	The leases were cancelled in light of serious legal deficiencies identified by the DOI in the underlying record supporting issuance of the leases. The decision to cancel the existing leases within the Coastal Plain area is outside the scope of the SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	22	The SEIS also ignores the pertinent 9th Circuit case law. The Thomas v. Peterson decision's discussion regarding connected action is still good law. 753 F.2d 754 (9th Cir. 1985). As recently as 2020, the Ninth Circuit has cited Thomas for the proposition that an action is "connected" when the record reveals that it is at "an advanced stage of planning." See Chilkat Indian Village of Klukwan v. Bureau of Land Management, 825 Fed.Appx. 425, 429 (9th Cir. 2020) (citing Thomas, 753 F.2d at 760-61; Sierra Club v. Bureau of Land Mgmt., 786 F.3d 1219, 1225 (9th Cir. 2015), and observing that "Because Appellants fail to demonstrate that the exploration plans "would [not] have taken place ... without" the future development of a mine, at 1226, BLM did not act arbitrarily by failing to consider those future impacts within a single EA.") Exploration does not necessarily lead to production, albeit that AIDEA anticipates based on the available science that there is a very reasonable likelihood that production will occur. Thus, exploration and production may not be connected actions, meaning NEPA reviews relative to production can be deferred until later. For instance, the impacts of a leasing and exploration program do not warrant an analysis of the impacts of leasing and exploration on greenhouse gases.	The level of specificity necessary to determine impacts from exploration would occur at the project-level authorization. Site-specific analyses can more realistically be provided when the BLM receives an application to permit activities such as exploration. As these details and timeline are not known at the programmatic level, leasing and exploration are not considered connected actions.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	37	The issue of the downstream effect of greenhouse gasses cannot block the ANWR Coastal Plain oil and gas program from going forward. The case cited in opposition to the project, Center for Biological Diversity v. Bernhardt, 982 F.3d 723, 736 (9th Cir. 2020), concerned leasing on the Outer Continental Shelf, a place in which DOI has substantial discretionary control over whether to let oil and gas projects proceed. See 43 U.S.C. § 1344(a)(1).(14) By contrast, the TCJA mandates DOI administer an oil and gas program and issue leases, and does not employ any such balancing language. § 20001(b)(2)(A). Where DOI has discretion to block an activity through declining to issue leases, as under the statute governing the Outer Continental Shelf oil and gas drilling program, there may arguably be a reason to require it to conduct NEPA analysis concerning greenhouse gas effects that could be avoided by declining to issue leases. But the TCJA mandates that DOI issue the Coastal Plain oil and gas leases, so there was no opportunity for DOI to avoid the alleged greenhouse gas effects through declining to issue leases, and so any asserted shortcoming in NEPA analysis regarding that issue is not an agency error. Public Citizen, 541 U.S. at 76-78; see 42 U.S.C. § 4336(a)(4). (14) Under that Outer Continental Shelf statute, DOI "considers economic, social, and environmental values of the renewable and nonrenewable resources contained in the outer Continental Shelf, and the potential impact of oil and gas exploration on other resources values of the outer Continental Shelf and the marine, coastal, and human environments." 43 U.S.C. § 1344(a)(1).	Section 20001(a)(1) of PL 115-97 requires the development of an oil and gas program on the Coastal Plain. Impacts from GHG are considered in the analysis but would not restrict the development of the program as required by law.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	39	Section 20001 of the TCJA requires the Secretary of the Interior, acting through the BLM, to establish and administer a competitive oil and gas program for the leasing, development, production, and transportation of oil and gas in and from the Coastal Plain area within the Arctic Refuge. The BLM is undertaking this Leasing EIS to implement the leasing program consistent with the TCJA. The EIS should only be addressing the initial step in creating the program that is consistent with the Congressional intent. There is no ambiguity in the statute that allows the BLM or the Department of the Interior to implement restrictions or interpret the statute in a manner other than to facilitate a leasing program in ANWR.	The joint lead agencies are undertaking this SEIS to establish an oil and gas leasing program on the Coastal Plain as required by Section 20001(C)(3) of PL 115-97.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	3	In order to fully understand the comments provided herein, it is critical to point out the laws and orders cited in the draft SEIS. Immediately after taking office, President Biden issued Executive Order (E.O.) 13990.(14) Section 4 of E.O. 13990 specifically directed you to review the Program consistent with applicable law.(15) On the same day, Scott de la Vega, then-Acting Secretary of the Interior, issued Secretarial Order (S.O.) 3395, which suspended authority for all career BLM officials to issue any onshore or offshore fossil fuel authorization, including but not limited to a lease, amendment to a lease, affinitive extension of a lease, contract, or other agreement, or permit to drill.(16) S.O. 3395 did not limit existing operations under valid leases, nor did it apply to authorizations necessary to avoid: conditions that might pose a threat to human health, welfare, or safety; or adverse impacts to public land or mineral resources.(17) (14) E.O. 13,990, Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis, 86 Fed. Reg. 7,037 (Jan 25, 2021). (15) Id. at § 4. (16) Secretary of the Interior, Order No. 3395, Temporary Suspension of Delegated Authority (Jan. 20, 2021). (17) Id. at § 3(g). Six weeks after your confirmation, you issued S.O. 3401 in furtherance of S.O. 3395, claiming that you personally reviewed the ROD and found "multiple" legal deficiencies, despite only making two generalized statements on the matter.(18) We have yet to receive a clear and thorough explanation from you, however, as to why the environmental review process for the ROD was "legally deficient" or why what the range of alternatives analyzed was "insufficient." (18) Secretary of the Interior, Order No. 3401, Comprehensive Analysis and Temporary Halt on all Activities in the Arctic National Wildlife Refuge Relating to the Coastal Plain Oil and Gas Leasing Program (June 1, 2021). Neither your actions nor the premise behind them have any basis in law. Rather, these actions were in response to promises that President Biden made while on the campaign trail in the Lower 48 - certainly not Alaska. Indeed, E.O. 13990 cites "alleged" deficiencies in the ROD, and directed you to review the Program consistent with applicable law. The scope of alternatives analyzed in the 2020 final EIS ranged from a "no action alternative" to a maximum development scenario, as required by NEPA. There was and remains no other range of alternatives that could be used. Further, the 2020 ROD was vetted by multiple career attorneys within the DOI's Solicitor's office. These attorneys met at least three times each week with professional staff at the BLM and FWS offices in Alaska. This painstaking process was done to ensure that the 2020 final EIS comported with each and every law and regulation governing DOI, including section 20001 of the Tax Act. An additional analysis of the entire Program was unnecessary, as was the abrupt cancellation of the leases issued with respect to the Program. As Members of Congress with oversight responsibilities over the very legislative language that you believe DOI "failed" to properly interpret, we can assure you that, despite the simple fact that you voted against the Tax Act, the 2020 final EIS and ROD reflect Congress' intent. It is clear that such "legal deficiencies" merely reflect your opinion and the draft SEIS is a product of political motive, rather than fact and the letter of the law.	Details on the deficiencies in the Final EIS are provided in Chapter 1, Section 1.1, page 1-1 and are referenced directly from Secretarial Order 3401 and the lease suspension letters issued by the Principal Deputy Assistance Secretary for Land and Mineral Management in June 2021.
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	4	It is important to detail the scope of authority of the Secretary's authorities before detailing the technical deficiencies with the draft SEIS. As discussed, section 20001 of the Tax Act explicitly requires that the Secretary conduct at least two lease sales in the 1002 Area, staggered over a 7-year period.(19) The draft SEIS, however, fails to point out that Congress included two separate deadlines for each of those sales. Rather, the draft SEIS simply says that both must occur by December 22, 2024.(20) (19) Supra note 8. (20) Draft Coastal Plain Oil and Gas Leasing Program Supplemental Environmental Impact Statement at § 1.3. BLM has effectively not met its statutory obligation to conduct the first lease sale by December 22, 2021 in cancelling the leases that were issued pursuant to that sale. BLM is consequently now behind on that schedule, and must hold two lease sales, the first of which should be held immediately given Congress' mandate. We therefore request that BLM provide us detailed information as to how it plans to meet the schedule required in section 20001(c) of the Tax Act. More importantly, the Tax Act only provides the Secretary with the authority to "manage" the Program and "administer" it in a manner similar to that of the oil and gas leasing Program in the NPR-A.(21) To that end, the Naval Petroleum Reserves Production Act of 1976 (NPRPA), the statute governing the oil and gas leasing program in the NPR-A, only provides the Secretary with the authority to "direct or assent to the suspension of operations and production."(22) The only time the NPRPA contemplates the termination of leases is under specific, limited circumstances that are beyond the control of the lessee.(23) It is clear that neither the Tax Act nor the NPRPA delegate you the authority or discretion to terminate a lease, and your actions constitute an abuse of administrative power and violate the law. (21) Tax Act at § 20001(b)(3). (22) 42 U.S.C. § 6506a(k)(2). (23) Id. at § 6506a(i).	The BLM conducted its first lease sale in the Coastal Plain on January 6, 2021. A total of nine tracts were leased in this first lease sale. This sale met the requirements of Section 20001(c)(3) of PL 115-97.
Krumme	Petra	-	80327	1	The Tax Act (PL 115-97) of December 2017 blatantly violates several articles of United Nations Declaration on the Rights on Indigenous Peoples (UNDRIP), i.e. the human rights of the Indigenous Gwich'in and Inupiaq peoples of the United States and Canada. It contradicts the goal of the international community "to respect and promote the inherent rights of indigenous peoples ... especially their rights to their lands, territories and resources" "that they possess by reason of traditional ownership or other traditional occupation or use", as well as "to give legal recognition and protection to these lands, territories and resources" and to "take effective measures to ensure that no storage or disposal of hazardous materials shall take place in the lands or territories of indigenous peoples without their free, prior and informed consent".	Inupiat and Gwich'in communities are specifically considered in the environmental justice section based on their identified use of relevant subsistence resources in Section 3.4.5. Other Gwich'in community impacts are discussed in the subsistence and sociocultural analyses (Sections 3.4.3 and 3.4.4, respectively), including indigenous Canadian communities.

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Lemke	Deana	Porcupine Caribou Management Board	80334	6	The second primary concern is a lack of due consideration for key principles and obligations outlined in the Agreement between the Government of Canada and the Government of the United States on the Conservation of the Porcupine Caribou Herd (International Agreement), particularly with respect to conservation and minimization of adverse effects. The International Agreement refers to "minimiz[ing] activities that would significantly disrupt migration or other important behavior patterns of the Porcupine Caribou Herd or that would otherwise lessen the ability of users of Porcupine Caribou to use the Herd" and the expectation of "international co-operation and coordination so that the risk of irreversible damage or long-term adverse effects as a result of use of caribou or their habitat is minimized". It is our understanding that the International Porcupine Caribou Board has not convened a meeting to consider the SEIS and ensure the International Agreement is upheld.	The appointment of members to the IPCB is beyond the scope of this project. The joint lead agencies will continue to work through DOI and the State Department to coordinate with Canada and the IPCB in relation to the Coastal Plain oil and gas program.
Kimbrell	Leila	Resource Development Council for Alaska	80347	2	Just prior to the notice of this draft Leasing SEIS, the Secretary of Interior inexplicably and unilaterally cancelled AIDEA's seven existing leases (Cancelled Leases). It is non-sensical for the Secretary to cancel lease sales and issue a Leasing SEIS. This ignores the rights of AIDEA in the previously issued leases and violates the Tax Act, which mandated the sale of those leases. Though the Cancelled Leases are not addressed in the current draft Leasing SEIS, AIDEA's lease rights, if reinstated, are affected by the Leasing SEIS, which addresses the 2024 lease season. Neither the Alaska National Interest Lands Conservation Act (ANILCA) nor the Tax Cuts and Jobs Act (Tax Act) grant the Secretary of the Interior the authority to temporarily or permanently "withdraw" any portion of the Section 1002 Area from oil and gas leasing or development. ANILCA specifically identified the Section 1002 Area as a potential area for oil and gas leasing as part of the agreement struck among the State of Alaska, the federal government, and native groups to allocate land within the State. Congress made the final determination in the Tax Act to open the Section 1002 Area for leasing and specified a precise timeframe for the Department to hold lease sales. The prior Administration complied with the law by holding a lease sale before the first required deadline of January 2021. Neither ANILCA nor the Tax Act grant authority to the Secretary of the Interior to withdraw some or all of the Section 1002 Area from leasing. By suspending the lawfully issued remaining leases in this area, the Secretary has effectively withdrawn this area from development in direct contradiction to Congress' directive in the Tax Act.The footprint of production and support facilities will be limited to no more than 2,000 surface acres at any given time, including private land holdings inside the coastal plain. Future on-the-ground actions, including potential exploration and development proposals, will require further National Environmental Policy Act analysis based on the site-specific proposal. As a result, decisions evaluated in the initial EIS and its record of decision would not authorize any on-the-ground activity associated with the exploration or development of oil and gas resources on the coastal plain.	The leases were cancelled in light of serious legal deficiencies identified by the DOI in the underlying record supporting issuance of the leases. The decision to cancel the existing leases within the Coastal Plain area is outside the scope of the SEIS.
Kimbrell	Leila	Resource Development Council for Alaska	80347	5	Finally, an initial review of the Leasing SEIS indicates the leasing program for the Coastal Plain has been changed substantially and raises questions whether it complies with the mandate of the Tax Act. For example, the document proposes alternatives that are less than the "up to" 2,000 acres of allowable development in the 1002 area; no surface occupancy restrictions; and lease operating procedures that are more restrictive than the intent of the Tax Act without corresponding science to support the proposed restrictions. Additional time is needed to meaningfully assess and provide substantive comments on the impacts of these proposals. The Cancelled Leases Violates the Tax Act: The Leasing SEIS does not mention a significant act that was taken almost simultaneously with the issuance of the Leasing SEIS: the cancellation of the existing seven leases issued pursuant to the Tax Act to AIDEA by the Secretary of the Interior with little notice to the leaseholder. Cancelling those leases and issuing this new proposed leasing program under the Leasing SEIS appears to be a willful disregard to the mandate of Congress to issue leases to allow for responsible oil and gas development in the 1002 area as directed by the Tax Act. BLM should not be issuing a new leasing program. It should be honoring the valid, existing rights under the leases awarded to AIDEA and further delay of the implementation of Section 20001 of the Tax Act should not be tolerated.	The leases were cancelled in light of serious legal deficiencies identified by the DOI in the underlying record supporting issuance of the leases. The decision to cancel the existing leases within the Coastal Plain area is outside the scope of the SEIS.
Kimbrell	Leila	Resource Development Council for Alaska	80347	6	Of the range of alternatives proposed, Alternative B is the preferred alternative. The Leasing SEIS proposes several alternatives, however, Alternative B is the only alternative that complies with the directive of the 2017 Tax Cuts and Jobs Act which "directs the Secretary of the Interior, acting through the Bureau of Land Management (BLM), to establish and administer a competitive program for the leasing, development, production, and transportation of oil and gas in and from ANWR's Coastal Plain."	All action alternatives comply with PL 115-97, which requires that the Secretary of Interior, acting through the BLM, develop and oil and gas leasing program on the Coastal Plain. The law does not detail what that program should encompass.

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Kimbrell	Leila	Resource Development Council for Alaska	80347	7	Alternatives C & D are cost-prohibitive and do not comply with the 2017 Tax Cuts and Jobs Act. AIDEA, who owns the originally issued ANWR leases in the area and is a major stakeholder, should have more consideration than stakeholders who reside in the Lower 48 or not directly in the area. Subjective emphasis is being weighted more heavily throughout the document. It is biased against development supporters. (For example, the Draft EIS heavily considers Gwich'in input which do not reside in the 1002 Area and does not adequately reflect input from Kaktovik, North Slope Borough, and the Iñupiat Community of the Arctic Slope (ICAS). Subjective statements with the Leasing SEIS should be removed from the analysis. For example: "Incremental development of oil and gas-related infrastructure throughout the program area may erode cultural connections to, and subsistence uses of these lands for the Iñupiat, Inuvialuit, and Gwich'in." The research does not support this subjective opinion. Caribou have flourished on the North Slope since Prudhoe Bay development occurred. Map 314 of the Leasing SEIS shows that caribou are not heavily in the 1002 area and, therefore, the analysis needs to reflect that fact when considering impacts	The SEIS incorporates traditional knowledge provided by Tribal communities during both the 2019 EIS and SEIS. This information has been supplemented with published literature to provide balanced perspectives from Tribal communities, where possible. Potential impacts to communities are derived from this information as well as other resource specific analyses.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	1	Protection of the calving and nursery grounds on the Coastal Plain is a human rights issue to the Gwich'in Nation and is upheld by the U.N. Declaration on the Rights of Indigenous Peoples and its International Covenant on Civil and Political Rights, which states, "by no means shall a people be deprived of their own means of subsistence." This principle must be respected. Oil and gas activities on the Coastal Plain are an affront to our human rights and our way of life.	Inupiat and Gwich'in communities are specifically considered in the environmental justice section based on their identified use of relevant subsistence resources in Section 3.4.5. Other Gwich'in community impacts are discussed in the subsistence and sociocultural analyses (Sections 3.4.3 and 3.4.4, respectively), including indigenous Canadian communities.

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Demientieff	Bernadette	Gwich'in Steering Committee	80355	2	Harming the food supply, health, environment, and the subsistence culture of the Gwich'in contravenes human rights obligations that have been made by the U.S. Government through the following international instruments: the United Nations Declaration on the Rights of Indigenous Peoples, which enshrines Indigenous Peoples' individual and collective rights, (19) and which the U.S. agreed to support in 2010;(20) the International Covenant on Civil and Political Rights,(21) which the U.S. ratified in 1992; the Convention on the Elimination of Racial Discrimination (CERD), which recognizes the rights to be free from racial discrimination and actions that implicate such discrimination,(22) ratified by the U.S. Government in 1994; and, as a member to the Organization of American States (OAS), the U.S. Government should respect the Indigenous rights articulated in the American Declaration on the Rights of Indigenous Peoples, which is implemented by the OAS system.(23) (19) See United Nation Declaration on the Rights of Indigenous Peoples, A/61/29 (2007). (20) "Announcement of U.S. Support for the United Nations Declarations on the Rights of Indigenous Peoples," U.S. DEP'T OF STATE (Jan. 12, 2011) https://2009-2017.state.gov/s/srgia/154553.htm. (21) UN General Assembly, International Covenant on Civil and Political Rights (Dec. 16, 1966). (22) UN General Assembly, International Convention on the Elimination of All Forms of Racial Discrimination, (Dec. 21, 1965). (23) Organization of American States, American Declaration on the Rights of Indigenous Peoples (2016). In November 2020, the United Nations Human Rights Council reviewed the United States' human rights records in its Universal Periodic Review (UPR), a mechanism to hold the U.S. and all member states accountable to their international human rights obligations and give guidance where improvements are needed. 139 reports about human rights concerns were filed by civil societies, including the Gwich'in Steering Committee.(24) In response to the recommendations, the U.S. restated its "priority to make respect for Tribal sovereignty and self-governance, commitment to fulfilling Federal trust and treaty responsibilities to Tribal Nations, and meaningful consultation with Tribal Nations cornerstones of Federal policy."(25) (24) UN General Assembly Human Rights Council, Summary of Stakeholders' Submission on the United States of America, A/HRC/WG.6/36/USA/3 (March 6, 2020). (25) U.S. Statement During the Adoption of the Third UPR of the United States, U.S. MISSION TO INT'L ORG. IN GENEVA (March 17, 2021), https://geneva.usmission.gov/2021/03/17/us-upr-1/. In August and November 2020,(26) the Committee on the Elimination of Racial Discrimination (the Committee) responded to a petition filed by the Gwich'in Steering Committee in November of 2019,(27) announcing that the Committee was launching an inquiry into the U.S. Government's human rights violations as to drilling in the Coastal Plain. The Committee stated that it was concerned that development in the Coastal Plain would violate the following rights: the right to self-determination; the right to free, prior, and informed consent of and adequate consultation; to religion and culture; the right to maintain and enjoy their means of subsistence; the right to protect their environment, lands, and territories; and the right to be free from gendered and sexual violence.(28) In addition, the Committee noted that the proposed leasing program by the U.S. Government would "exacerbate the already disproportionate impact of climate change on Indigenous people, particularly in Alaska. Moreover, the information alleges that the domestic remedies available to Indigenous peoples do not provide a legal basis for addressing the underlying cause of structural discrimination."(29) (26) United Nations Human Rights Office of the High Commissioner, Letter to His Excellency Mr. Andrew Bremberg, CERD/EWUAP/101stSession/2020/USA/JP/ks (Aug. 7, 2020), https://tbinternet.ohchr.org/Treaties/CERD/Shared%20Documents/USA/INT_CERD_ALE_USA_9242_E.pdf; United Nations Human Rights Office of the High Commissioner, Letter to His Excellency Mr. Andrew Bremberg, CERD/EWUAP/102ndSession/2020/USA/JP/ks (Nov. 24, 2020), https://tbinternet.ohchr.org/Treaties/CERD/Shared%20Documents/USA/INT_CERD_ALE_USA_9300_E.pdf. (27) Gwich'in Steering Committee, Request for Early Warning Measures and Urgent Action Procedures (Nov. 13, 2019), https://www.colorado.edu/program/fpw/sites/default/files/attached-files/gwichin_steering_committee_request_to_cerd.pdf. (28) UNDRIP supra note 2, Articles 3, 11, 12, 18, 19, 20, 29, and 34. (29) Letter supra note 63. For these reasons, an oil and gas program on the Coastal Plain is not only infringing on inherent human rights enumerated throughout various international instruments but would cause severe risk and irreversible harm to the survival of the Gwich'in and their way of life - a risk future generations would feel if not acknowledged and adequately addressed. To date, the impact of the oil and gas program on Gwich'in human rights have not been fully and transparently analyzed. International laws and agreements that protect and promote human rights are being violated by the proposed oil and gas program, and this must be recognized and analyzed in the final SEIS. In addition, we call on the U.S. Government to implement the United Nations Committee on the Elimination of Racial Discrimination (CERD) recommendations from the August and November 2020 communications to the United States.	Inupiat and Gwich'in communities are specifically considered in the environmental justice section based on their identified use of relevant subsistence resources in Section 3.4.5. Other Gwich'in community impacts are discussed in the subsistence and sociocultural analyses (Sections 3.4.3 and 3.4.4, respectively), including indigenous Canadian communities.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Demientieff	Bernadette	Gwich'in Steering Committee	80355	13	The National Historic Preservation Act (NHPA) Section 106 requires the BLM to identify historic properties and assess the effects of the undertaking on cultural and archeological properties.(47) Any archaeological resources identified must be protected consistent with the Archaeological Resources Protection Act (ARPA) to ensure there is no "[u]nauthorized excavation, removal, damage, alteration, or defacement of archaeological resources."944F(48) (47) 36 C.F.R. § 800.8(c)(1)(ii). (48) 16 U.S.C. § 470ee(a). While the agencies included some additional information on the cultural use of the Coastal Plain for the Gwich'in,(49) we remain concerned that the draft SEIS lacks information necessary to accurately describe and analyze the impacts to cultural and archaeological resources in a meaningful way. Oil and gas activities in the Arctic Refuge have the potential to affect historic places and cultural resources of the Gwich'in. Impacts may result from a wide range of oil and gas and industrial activities, including ground disturbance during seismic exploration, drilling, and excavation of gravel for construction of permanent facilities. The Coastal Plain is a significant ethnographic cultural resource. Currently the draft SEIS explains that "vast inland areas of the program area have received little to no systematic investigation for cultural resources"(50) and that the absence of Inupiat and Gwich'in cultural resources "can be attributed to lack of research and documentation rather than that they do not exist."(51) As the agencies cannot protect unknown sites or analyze the impacts to those sites based on the projected oil and gas activities for each alternative, we urge the agencies to complete a full, comprehensive study of the Coastal Plain's cultural archeological and historic resources. In pursuing comprehensive surveys, the agencies should seek NHPA consultation with all Gwich'in communities along the historic migration path of the Porcupine Caribou Herd.(52) (49) DSEIS at 3-279 to 3-283, 3-289. (50) DSEIS at 3-276. (51) DSEIS at 3-286. (52) 36 C.F.R. § 800.8(c)(3). The NHPA also requires agencies to ensure that properties listed or eligible to be listed on the National Historic Register are preserved to maintain their historic, archaeological, architectural, and cultural values.(53) . Iizhik Gwats'an Gwandaii Goodlit is a traditional cultural landscape eligible for the National Register of Historic Places that must be considered in the Section 106 process. (53) 54 U.S.C. § 306102(b)(2).	36 CFR 800.4 details the identification of historic properties as part of the NHPA, Section 106 process. The regulations require the agencies to make a good faith effort to identify historic properties, noting several methods for doing so. The regulations do not require a complete, cultural resource inventory of an area to identify all resources. A PA for Section 106 compliance was developed for the 2020 ROD and remains in effect. The PA provides a process for taking into account the effects of the leasing program on historic properties during implementation of the program. Additional, project-specific inventories would be conducted for future proposed activities.
Carroll	Eda	-	80359	1	So my point today, drilling on the Coastal Plain will result in a failure to protect the wildlife and subsistence purposes of the Arctic Refuge. The BLM must comply with the international treaty obligations, the 1987 Porcupine Caribou Herd Conservation Agreement. The BLM lacks important information and ignores indigenous knowledge. The BLM has not communicated with our community.	Inupiat and Gwich'in communities are specifically considered in the environmental justice section based on their identified use of relevant subsistence resources in Section 3.4.5. Other Gwich'in community impacts are discussed in the subsistence and sociocultural analyses (Sections 3.4.3 and 3.4.4, respectively), including indigenous Canadian communities.The joint lead agencies are complying with international agreements between the U.S. and Canadian governments.
Ruaro	Randy	-	80383	2	And so we would urge the BLM to take a close hard look at the language of the 2017 tax act as well. It speaks in terms of "shall." Shall provide in oil and gas and propane. Shall provide for up to 2,000 acres. Shall does not mean may, and we would urge the BLM to follow the law and reinstate our leases.	Section 20001 of PL-115-97 Congress mandates Secretary of the Interior, acting through the BLM, to establish and administer an oil and gas program for the leasing, development, production, and transportation of oil and gas in and from the Coastal Plain area within the Arctic Refuge. Section 20001(c)(3) of PL 115-97 does state that the Secretary shall authorize up to 2,000 acres of production and support facilities (see Section 1.9.1), which is the total limit.
Hitchcock	Arleigh	-	80392	1	It was really interesting hearing the beginning, the goals on ANWR and why it was created, those four initial goals, and then hearing the Tax Act added to that. That provides direct conflict with the rest of the goals and BLM's obligations that existed before the Tax Act. They are incompatible with one another. The SEIS fails to take into significant account the impacts of oil and gas development would have on animals, wetlands, and Gwich'in ways of life.	Impacts of the oil and gas program, including those for animals, wetlands, and traditional ways of life, are detailed in Chapter 3, Sections 3.3, 3.4.3 and 3.4.4 specifically.
Allen	Mark	Government of Canada	79200	26	There is no apparent difference in how the Porcupine Caribou Agreement purposes and objectives are being described in the draft SEIS compared to the previous final EIS, and neither give a proper and full treatment to them. Canada requests a new, specific section in the Final SEIS that describes the key objectives of the treaty and how the three action Alternatives meet, or do not meet, those objectives. This new text could be put into an individual paragraph in each of the descriptions of the potential impacts of Alternatives B (p. 3-213), C (p. 3-216), and D (p. 3-218) in the Terrestrial Mammals section.	The joint lead agencies are complying with international agreements between the U.S. and Canadian governments. All alternatives are designed be compliance with federal law and policy. Specific impacts to species considered in these agreements are detailed
greer	jill	-	62177	2	These indigenous people's rights must be reiterated, as it is critical as part of our Nation's adherence to the UN Rights of Indigenous Peoples to self-determination and the ability to continue their cultural and economic traditions without harm caused by outside Colonial powers, and international Corporations whose actions suggest that they do not feel accountable to international law.	Inupiat and Gwich'in communities are specifically considered in the environmental justice section based on their identified use of relevant subsistence resources in Section 3.4.5. Other Gwich'in community impacts are discussed in the subsistence and sociocultural analyses (Sections 3.4.3 and 3.4.4, respectively), including indigenous Canadian communities.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Mundstock	Louise	-	55219	2	The SEIS does not adequately consider international Indigenous rights of free, prior, and informed consent (FPIC) for any development on ancestral lands. This consent is not merely a moral obligation, it is a legal necessity with regards to Indigenous sovereignty.	Inupiat and Gwich'in communities are specifically considered in the environmental justice section based on their identified use of relevant subsistence resources in Section 3.4.5. Other Gwich'in community impacts are discussed in the subsistence and sociocultural analyses (Sections 3.4.3 and 3.4.4, respectively), including indigenous Canadian communities.

U.3.30 Petroleum Resources

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Hope	Douglas	-	13452	1	I support banning all drilling leases in ANWR. A comprehensive USGS survey should be conducted to determine if there are any commercially viable oil/gas resources on the coastal plain. This information should be made public and could put an end to the entire controversy.	Additional surveys and studies would be completed by lessees during project-specific exploratory activities.
Boldrick	Lauren	EPA Region 10	80058	30	EPA reiterates our October 2021 NOI recommendation to analyze the impacts associated with a guillotine rupture of the potential pipelines that may be developed under the leasing program as a low-probability, high-impact scenario. This analysis could include the potential emissions impacts and the potential impacts of the spilled oil to the ecosystem, focusing on the potential degradation of the existing hydrological, vegetation, and habitat conditions. Analysis of the potential impacts of this scenario will improve the understanding and disclosure of potential environmental impacts associated with the project, and better inform the mitigation and planning measures necessary for monitoring and control of the proposed pipelines during regular and emergency operations.	The amount of oil spilled in a pipeline rupture depends on a number of factors which are unknown at this stage of the leasing program, potentially including the size of the pipeline, distance between shutoff valves, and the time between rupture and shutoff. The document considers the potential impacts associated with different volumes of spilled oil including a low probability of a large spill, which could be similar to a guillotine rupture.
Wardlow	Cyndi	The Wildlife Society- Alaska Chapter	80261	5	The draft SEIS needs to address in detail the geographical variation across the landscape of the North Slope. Nearly all of the current petroleum exploration and development to the west of the Refuge (e.g., Prudhoe Bay and the northeastern NPR-A) have occurred in a landscape much different than the Refuge coastal plain. The narrow, compressed coastal plain of the Refuge makes large-scale resource development much more problematic as there are many fewer options for wildlife to avoid development infrastructure. This is particularly an issue for the Porcupine Caribou Herd. In addition, the lack of water in lakes, which is much different from the vast wetlands to the west where oil and gas activities are expansive, has significant implications for the feasibility, design and cost of an industrial-scale oil and gas program on the Refuge coastal plain, as well as for impacts on fish, wildlife, and the natural landscape. These differences must be clearly addressed in the draft SEIS.	Additional text has been added for clarity.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	59	Topic Petroleum Resources, Direct and Indirect Impacts Section # 3.2.6 Page # 3-72 SEIS Text Under Alternative D, approximately 46 percent of the program area would be subject to NSO stipulations and 51 percent of the program area would not be available for lease (Map 3-8, Hydrocarbon Potential, Alternative D, in Appendix A). This would limit the location of future CPFs, drill pads, and other infrastructure. Potentially, these limitations could result in changes to pad configurations and reduce oil production, or even prevent development, if no economically viable oil accumulations were discovered in proximity to locations where CPFs and drill pads could be located. Comment The acknowledgement that Alternative D may not even be possible due to the constraints built into Alternative D is concerning. This seems to stem, in part, from the significant limitation of available "high oil potential" areas under Alternative D. The limiting of high oil potential areas contradicts the Congressional directive in the TCJA for BLM to "lease those areas that have the highest potential for the discovery of hydrocarbons." § 20001(c)(1)(B)(i)(II).	Alternative D2, a sub-alternative of D, is consistent with the Section 20001(c)(1) of PL 115-97 and focuses on the highest hydrocarbon potential area in the northwest portion of the program area, while also making the statutory minimum of 400,000 acres available for sale.

U.3.31 Physical Environment

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Rice	Sandra	-	45104	1	In that harsh and fragile environment, exploration and production is expensive and disturbs the ecosystem. By far the best reason to turn away Oil and gas operations: they will cause more pollution and sea warming of the area. More has to be done to protect the coastal plain from oil and gas development.	Potential impacts from pollution and sea warming are considered in Section 3.2.1, Climate and Meteorology. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Hobbs	Rachel	-	67019	3	We must do more to protect the Arctic, which is one of the most important ecosystems on Earth to maintain ecological stability. First, the Arctic is critical to maintaining the Gulf Stream. The Gulf Stream could collapse in as early as two years from now (2025) if the ice continues to melt on its current trajectory, which would have devastating impacts for the weather patterns in the US. Development in the Arctic for fossil fuels has no place in a decarbonized economy, which is what we must put all of our energy towards achieving.	Potential impacts on climate and meteorology are considered in Section 3.2.1. Additionally, to provide further protections, the agencies developed Alternative D2, a sub-alternative of D, based on public input requesting protection for key resources in the Coastal Plain. Alternative D2, consistent with Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Rutz	Richard	-	77069	2	The proposed regulations for management of the Reserve offer an excellent foundation to build upon. I urge the BLM to use these to restrict oil and gas drilling and damaging infrastructure as much as possible. The decision to permit the Willow project was a major setback in our ability to maintain intact ecosystems that people and wildlife depend on and to address the climate crisis. There are still lingering threats from future development that could move forward in the region. As the BLM revises the draft rules, I urge you to take every opportunity possible to expand protections for not only the 13 million acres of existing designated Special Areas, but also to other areas in the Reserve that could be harmed by further oil and gas development.	Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Peter	Enei Begaye	-	80363	3	And in addition to the fact that the Draft Supplemental EIS does not adequately address subsistence, it doesn't adequately address climate change, which is also a subsistence issue. And if oil and gas development is allowed to happen on the -- in the Coastal Plain, as Sarah James mentioned, there's noise, there's the off-gassing, there's all amount of pollutants that will be released into that area, in addition to the fact that climate change will be exacerbated, exponentially increased if we are continuing to drill for oil and gas in this area.	The subsistence analysis (Section 3.4.3) and ANILCA 810 findings have been updated based on information received during the public comment period. Additionally, to provide further protections, the agencies developed Alternative D2, a sub-alternative of D, based on public input requesting protection for key resources in the Coastal Plain.
Dewitt	Meda	-	80370	3	Not only that, what are you going to do and how are you going to address the Northern Passage being open? The Arctic Ocean feeds all of our major oceans for the entire globe. If we have an oil spill there it affects all of the Arctic countries as well as all of our major oceans and the majority of the countries that have coastal lines in the world. It doesn't address the pollution on the shores where you bring up the whales for whale harvest, nor the fact that the birds are actually born here. They don't migrate here from other places, they're born here and they go other places. Have you consulted the other countries on what you're going to the bird -- do to the birds and their populations?	The potential for spills and associated impacts are discussed in Section 3.2.11, Solid and Hazardous Waste. Under Alternatives B, D, and D2, Lease Stipulation 4. operators would be responsible for developing comprehensive prevention and response plans, including Oil Discharge Prevention and Contingency Plans and Spill Prevention, Control, and Countermeasure plans and maintain adequate oil spill response capability to effectively respond during periods of ice, broken ice, or open water, based on the statutes, regulations, and guidelines of the USFWS, EPA, ADEC, and the Bureau of Safety and Environmental Enforcement (BSEE), as well as ROPs, stipulations, and policy guidelines of the BLM.
Ruaro	Randy	-	80383	1	There are a couple areas that we would also urge the BLM to look at in their EIS, and one of those is the true source of much of the pollution that covers the Arctic, which comes from Asia, not from oil and gas development on the North Slope. And I'm happy to provide some of those records, but that is a -- a true source of harm to the -- to the Arctic. Black soot -- it's been traced for quite a while now -- NASA and others.	Potential impacts from pollution such as black soot are considered in the air quality analysis.

U.3.32 Polar Bears

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoenhut	Karimah	Sierra Club	79130	4	Despite the available science regarding these denning density estimates, and despite acknowledging both that "the highest density of maternal dens in Alaska 2000-2015 ... was located in the northwestern corner of the project area,"(17) and that "[t]he distribution of land dens within the SBS range generally and within the program area specifically shifted westward between 1982-1999 and 2000-2015, with the largest increases in land denning and the highest abundance of land dens occurring between the Colville and Canning Rivers,"(18) the Leasing SEIS fails to in any manner explain or evaluate the consequences of failing to extend the protections of the timing limitation under Lease Stipulation 5 for Alternatives C and D to the intense northwestern denning hotspot. Instead, the SEIS only evaluates and estimates the dens and denning habitat that would be within the bounds of the No Surface Occupancy (NSO) protections for each alternative-but ignores that the NSO restrictions only address permanent infrastructure and do not prevent seismic surveys or other disturbing activities, like snow or ice routes.(19) (17) Leasing SEIS at 3-232 (citing Patil et al. (2022)). (18) Leasing SEIS at 3-233 (citing Patil et al. (2022)). (19) See Leasing SEIS at Volume 1, Glossary-14 (defining "permanent oil and gas facilities" to exclude ice roads).	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Not Provided	Not Provided	-	11708	5	Along with protecting caribou, polar bears need consistent and unequivocal protection for their on-shore denning habitat. The SEIS is inadequate because it protects some polar bear denning habitat but leaves other critical denning habitat vulnerable, especially for denning sows and cubs. The Canning River delta and the Camden bay area must receive clear and decisive protection for denning polar bears and especially for denning sows and cubs.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Raffaeli	Michael	-	19265	3	[comment:19265-3; 205.04]There is not enough protection for on-shore denning habitat for polar bears: the SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden bay area.[comment end]	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Yarnell	Ronald	All About Adventure	19299	3	There is not enough protection for the "onshore denning habitat" for polar bears. I have paddled along sections of this coast and there is no way small buffers will protect these denning sites.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Weaver	Pamela	-	20597	2	This area is critical for polar bears, especially denning sites. There needs to be more protection in place for this as well. The Canning River delta and Camden Bay Area need more protections, as these are critical areas.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Cecere	Doug	-	22126	2	There is not enough protection for onshore denning habitat for polar bears. The Draft SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Wilson	William	-	22128	1	There is not enough protection for onshore denning habitat for polar bears. The Draft SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Scotto di Frega	Maria Pia	-	22179	1	There is not enough protection for onshore denning habitat for polar bears. The Draft SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Worthy	Crista	-	22294	2	The Draft SEIS doesn't give denning polar bears enough protection, especially in the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Keim	Steve	-	22361	2	The Draft SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable - especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Family	Susang-Talamo	-	23235	1	There is not enough protection for onshore denning habitat for polar bears. The Draft SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Mieras	Dean	-	23828	2	2. There is not enough protection for onshore denning habitat for polar bears. The Draft SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
vanessa	Paula	-	25034	1	For starters there's not enough protection for onshore denning habitat for polar bears. The current Draft Supplemental Environmental Impact Statement is inconsistent in protecting polar bear denning habitat- protecting some habitat but leaving others vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden Bay area for these resident polar bears.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Kelly and Family	Lisa Ann	-	25180	2	2) The Draft SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
LAMKEN	NOLA E	-	25321	1	I support more provision for Polar Bears to den and eat in the High Arctic. The Canning River Delta and Camden Bay both need more protections than current plans give them. Strictly wild qualities need to be maintained. ALL oil and gas MUST be KEPT OUT! Denning sows and cubs need much more protection.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Morrison	David	-	25387	1	There is not enough protection for onshore denning habitat for polar bears. The Draft SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Stewart	Sarah	-	29334	1	We are very concerned that there is not enough protection for onshore denning habitat for polar bears. The Draft SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Fitch	K	-	29817	2	3. There is not enough protection for onshore denning habitat for polar bears. The Draft SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Dunson	Debra	-	32367	2	The Draft SEIS has stipulated selected areas be set aside for protecting polar bear dens and habitat. However, it fails to stipulate strong protections in the polar bear habitat within the Canning River delta and the Camden Bay area. Protection is needed in both these areas to maintain critical denning habitat for the sows and their cubs.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Sletteland	Holly	-	33122	1	Stronger protections for onshore denning habitat for polar bears in the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
L	Laura	-	33248	2	The Draft SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Long	Becky	-	33606	7	More protection of the denning areas and the migrations routes for the onshore denning polar bear habitat is needed. The proposed protections are too variable. Some denning sow and cub habitat is unprotected.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Not Provided	Not Provided	-	35058	2	Stronger protection is needed for denning habitat for polar bears. Some habitat is protected in the draft SEIS but some is left vulnerable. Both the Canning River delta and the Camden Bay area need stronger protection. Polar bears are struggling already due to climate change.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Mower	Amy	-	36036	4	There is not enough protection for on-shore denning habitat for polar bears: the SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Hayward	Michelle	-	39606	3	Even on the relatively straightforward subject of polar bear protection, the Draft SEIS has largely failed to protect onshore denning habitat, leaving vast areas of prime habitat vulnerable; putting denning mothers and cubs at great risk; particularly in the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Higgins	Janice	-	39851	2	There is not enough protection for onshore denning habitat for polar bears. The Draft SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Cotter	Justina	-	41121	1	With regards to polar bear denning habitat, the Draft SEIS protects some habitat but leaving other areas vulnerable, especially for denning sows and cubs. Specifically, both the Canning River delta and the Camden Bay area need stronger protections.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Iandiorio	David	-	42655	4	It is vital to polar bears, which increasingly rely on the terrestrial maternal denning sites it provides. The latter are already under profound stress with the alarming diminution of sea ice and changes to their biome.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Printz	Peggy J	-	44959	1	Stronger protections for polar bear denning are needed for both the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Van Atta	Karen	-	44964	3	There is not enough protection for onshore denning habitat for polar bears. The Draft SEIS does not offer adequate protections polar bear. Some vitally important denning habitat for sows and cubs remains at risk. Canning River delta and the Camden Bay area need far stronger restrictions on what's permissible.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Fleischaker	Gail	-	44980	1	But the Draft SEIS is inconsistent in protecting polar bear den habitat while it appears to protect some habitat but leaves some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Bare	Eric	-	45477	3	It does not provide denning protections for polar bears.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Hamilton	Bruce	-	45518	2	Second, while all wildlife in the Refuge are important and wilderness dependent, there are certain species that are more sensitive than others. Of paramount concern are the polar bears, who are already stressed from climate change and now face the risk of winter seismic exploration and possible development in their onshore denning sites. No oil development or exploration, including seismic testing, should be conducted anywhere close to polar bear habitat.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Schoen	John	-	45576	10	Polar bears: The Beaufort Sea population of polar bears in Alaska was estimated to be around 2,000 bears IUCN (2003). Based on the analysis of over 30 years of data, scientists found that a bit less than half of the polar bear maternity dens were located on the coastal mainland or on ice attached to the mainland (Amstrup 2000). Retreating sea ice has resulted in increased polar bear denning on land (Amstrup and Garner 1994, Amstrup 1997). Along Alaska's Arctic coast, the highest density of polar bear land dens occurs within the coastal plain of the Arctic Refuge and the Fish and Wildlife Service has described it as the most consistently used polar bear land denning area in Alaska. Each winter the pregnant females come ashore and dig dens into the snow, giving birth to one to three cubs in December-early January. Winter oil exploration and development activity coincides with the period when females are within their maternity dens. Should disturbances cause the female to flee the den, newborn cubs will die. Individual polar bear dens are extremely difficult to locate and therefore also difficult to avoid disturbing. It is the cumulative effect of numerous developments and disturbances that may distress the population most. Like other species of bears, polar bears exist in relatively small populations and have low reproductive rates. Consequently, even small population declines can have significant adverse impacts on the population, emphasizing a need for careful management of polar bears.	SEIS Section 3.3.5, Marine Mammals - Impacts Common to All Action Alternatives, describes the likely impacts to polar bears as result of leasing programs actions. Section 3.3.5, Marine Mammals - Cumulative Effects, describes cumulative effects to marine mammals in the program area. Section 3.2.1, Climate and Meteorology, describes the anticipated impacts resulting from climate change in Arctic Alaska.
Schoen	John	-	45576	11	Concerns with the impact of oil activities on polar bear populations are best described by the IUCN/Species Survival Commission - Polar Bear Specialist Group. In the section Population and Habitat Threats, the following are listed as primary threats: hunting, petroleum exploration, toxic chemicals, nuclear waste, global warming and trade in polar bear parts. Under petroleum exploration, this group of polar bear experts identified the following potential problems: 1) death, injury, or harassment resulting from interactions with humans; 2) damage or destruction of essential habitat; 3) contact with and ingestion of oil; 4) contact with or ingestion of other contaminants; 5) attraction to or disturbance by industrial noise; 6) harassment (disturbance) by aircraft, ships, or other vehicles; 7) increased hunting pressure; 8) indirect food chain effects due to the impacts of oil and gas related activities on the food web upon which polar bears depend and are a part; 9) mortality, injury and stress resulting from scientific research to determine possible effects of oil and gas activities on polar bears and other species. Additionally, polar bears (like the other arctic carnivores - brown bear, wolves, arctic foxes, and wolverines) may also be attracted to human development because of food, curiosity over novel smells and activities, etc. often leading to an increase in human-caused deaths. How will development and production activities affect polar bears and particularly maternal denning of polar bears? These questions must be answered. Various development scenarios must be evaluated and long-term cumulative effects of oil and gas activities assessed before any lease sales of exploration and development begins.	These issues are described and addressed in the Draft SEIS Section 3.3.5, Marine Mammals - Impacts common to all action alternatives: 1. Death, injury or harassment from interactions with humans 2. Damage or destruction of essential habitat 3. Ingestion of oil 4. Other contaminants 5. Attraction to industrial noise 6. Harassment 7. Increased hunting pressure - see Section 3.4.4, Subsistence 8. Indirect effects on food web 9. Mortality from research - not a reasonably foreseeable impact of program activities.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoen	John	-	45576	12	It will be necessary to assess the potential impacts of oil-field development on polar bears using the coastal plain and also analyze those impacts in terms of climate change and the likelihood of increasing use of the coastal plain for denning by polar bears. A cumulative effects analysis should be conducted and peer reviewed.	SEIS Section 3.3.5, Marine Mammals - Impacts Common to All Action Alternatives, describes the likely impacts to polar bears as result of leasing programs actions. Section 3.3.5, Marine Mammals - Cumulative Effects, describes cumulative effects to marine mammals in the program area. Section 3.2.1, Climate and Meteorology, describes the anticipated impacts resulting from climate change in Arctic Alaska.
Keim	Frank	-	53297	1	In view of the future devastating effects on polar bear marine habitat (and, by inference, the survival of polar bears) due to the climate emergency, protection of their denning habitat on-shore must be a top priority.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Not Provided	Not Provided	-	59568	4	Better protect vitally important polar bear denning areas in the northwestern part of the Refuge. Even under the conservation alternative, those areas inexplicably remain vulnerable to seismic exploration, which poses severe danger to polar bear cubs. The proposed conservation alternative fails to provide adequate protection to this incredibly imperiled population.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
S.	Cleone	-	61487	2	Polar bears would be faced with losing denning habitat, and are already under stress.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Inman	E Renee	-	61588	1	There would be little protection for the polar bear denning habitats as some habitats would be protected but many others left vulnerable. Stronger protections are needed for both the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Yuen	Shirley	-	62012	1	The Draft SEIS fails to truthfully explain what would be lost by opening the Arctic Refuge to oil leasing and development. It is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
La Point	Dr. Thomas	-	62522	3	It does not sufficiently protect onshore denning habitat for polar bears, especially in the Canning River delta and the Camben Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Scranton	Chris	-	65433	2	The current SEIS does not discuss protections for vulnerable polar bears. There should be no seismic testing in critical polar bear denning areas.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Lindberg	Kristy	-	71021	1	The Draft SEIS needs better protection for (onshore) denning habitat for female polar bears and cubs. Specifically, the Draft needs stronger protection for the Canning River Delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Storm	Dean	-	72923	1	As climate change melts seasonal and polar ice, more land needs to be reserved for polar bears. More protections are needed for the Canning River delta and the Camden Bay areas.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Terwilliger	Laurie	-	73980	3	In addition, protections for polar bear denning areas in the Canning River delta and Camden Bay area must be strengthened. Polar bears, in particular, are sensitive to disturbance and the SEIS doesn't address how this can be mitigated.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Dieterich	Michele	-	75722	2	The DSEIS does not fully protect polar bear denning habitat. With a warming climate, polar bear habitat is rapidly shrinking. All habitat in the project area must be protected. Allowing drilling and development will put denning habitat at risk especially for females polar bears. Even stronger not diminished protections are necessary in the Canning River delta and Camden Bay.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Sigman	Marilyn	-	78189	7	There is not enough protection in any of the alternatives for on-shore denning habitat for polar bears. The SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.

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Rentschler	Dennis	-	78408	2	Provide a better definition of denning habitat for polar bears.	Characteristics of maternal denning habitat are described in the SEIS (Section 3.3.5, marine Mammals - Polar Bear). To summarize, pregnant polar bears denning in terrestrial habitats excavate maternal dens in compacted snow drifts next to coastal banks of barrier islands and mainland bluffs, river, stream, and lake banks, and other areas with suitable topographic relief. Dens are in areas with sufficient height and slope to create persistent drifts in early winter.
Lish	Christopher	-	79004	6	- Better protect vitally important polar bear denning areas in the northwestern part of the Arctic National Wildlife Refuge. There is not enough protection for onshore denning habitat for polar bears. The Draft SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden Bay area. Even under the conservation alternative, those areas inexplicably remain vulnerable to seismic exploration, which poses severe danger to polar bear cubs. The proposed conservation alternative fails to provide adequate protection to this incredibly imperiled population.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Schoenhut	Karimah	Sierra Club	79130	5	Table 3-40 purports to present the number of dens "subject to TL" (i.e. subject to the protections of a timing limitation "TL"), but indicates that zero dens are protected by a timing limitation under Alternatives C and D, and then includes a footnote that confusingly states: "The lease type 'subject to TLs' was omitted from this table because those TLs pertain to caribou during summer."(20) It is thus completely unclear to what the "subject to TL" row of Table 3-40 actually pertains. Similarly, Table 3-41 purports to present the amount of denning habitat "subject to CSU/TL," but indicates that no denning habitat is subject to a TL under Alternative D because that category is "not applicable," and then confusingly includes a footnote stating: "The lease type 'subject to TLs' was omitted from this table because those limitations pertain to caribou during summer."(21) Thus, neither the text nor tables disclose how many dens or the amount of denning habitat protected from seismic exploration and other activities by the timing limitations under Lease Stipulation 5 for Alternatives C and D, or conversely, how many dens are not protected by that important timing limitation. (20) Leasing SEIS at 3-261. (21) Leasing SEIS at 3-261.	This table has been revised to reflect the revisions to lease stipulations and ROPs.
Schoenhut	Karimah	Sierra Club	79130	6	Due to the total failure of the Leasing SEIS to evaluate the number (or proportion) of dens that are not protected from seismic surveys by the timing limitation of Lease Stipulation 5 under Alternatives C and D (due to its failure to protect the northwestern denning hotspot), BLM has obscured a critically important aspect of the environmental impacts of the alternatives, and has obscured its own failure to consider an alternative that adequately protects denning polar bears. Again, under every action alternative, the area within the northwestern denning hotspot is available for leasing, and is subject at most to NSO restrictions that address permanent facilities to some extent, but do not impose timing limitations to protect polar bear dens from activities like seismic surveys during the maternal denning season. Thus, this is not a situation where timing limitation protections specific to polar bear denning have not been applied because another restriction incidentally makes them unnecessary.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Schoenhut	Karimah	Sierra Club	79130	7	Notably, the Leasing SEIS not only fails to evaluate the impacts of the Lease Stipulation 5 timing limitation under Alternatives C and D not applying to the high density northwestern denning hotspot, but also fails to provide any explanation or rationale whatsoever for not imposing the same or similar restrictions on seismic in the northwestern hotspot region. While that denning hotspot falls within the area anticipated to have "high" potential for hydrocarbons, the LEIS provides no explanation or analysis to address why imposing the Lease Stipulation 5 Alternative C and D timing limitation to keep seismic out of areas within one mile of denning habitat on the core of that hotspot is not feasible. Nor should that fact in itself be determinative, since BLM clearly recognizes that it has the authority to exclude portions of the "high" potential region from leasing.(22) Nor has the SEIS provided any analysis that would support potential assertions regarding the balancing of Refuge purposes. Nor has the SEIS provided any analysis to explain why any other spatial restrictions on seismic surveys within the northwestern denning hotspot could not be imposed via a timing limitation-for example, a limitation on the total area of seismic survey within that northwestern hotspot that can occur within any single season. It is plain that for the northwestern hotspot, prophylactics to address the dangers posed by seismic to undetected dens, and the failure of den detection methods to locate dens, could and should have been considered, but the SEIS is utterly silent with regard to BLM's failure to protect that critical hotspot from seismic exploration in a manner similar to the protections conferred on the other denning hotspots under the timing limitation of Leasing Stipulation 5 for Alternatives C and D. (22) See Leasing SEIS at Appendix A, Map 3-8 (showing that under Alternative D, portion of "high" potential region is "Not available for lease sale"); see also id. at Map 2-5.Due to this failure, the Leasing SEIS fails to take a hard look at the impacts of the alternatives, in violation of NEPA requirements. By failing to evaluate an alternative that would protect the northwestern denning hotspot, BLM has also failed to evaluate a reasonable range of alternatives, in violation of NEPA, and has failed to evaluate any alternative that comports with the substantive requirements imposed by the Refuge purposes, in violation of the Refuge Act and ANILCA.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoenhut	Karimah	Sierra Club	79130	10	Wilson & Durner (2020)(29) subsequently made clear the danger of failing to remove these areas from leasing in light of BLM's interpretation of section 20001(c)(2) of the Tax Act. The Wilson and Durner study shows that, even making many overly optimistic assumptions that may underestimate impacts, for a large section of the high hydrocarbon potential area identified by BLM, seismic surveys likely cannot comply with the MMPA unless they take place after April 12th for one high density denning area, and after April 19th for the second high density denning area. As seismic surveys must take place during winter to avoid damage to tundra, this makes it highly questionable whether the necessary snow conditions to protect tundra will persist long enough for the areas to be surveyed, especially since climate change has shortened open tundra periods and resulted in closures during recent years in areas near the Coastal Plain of the Refuge. If BLM interprets section 20001(c)(2) to require authorization of exploration if deemed "necessary," regardless of compliance with lease stipulations, then stipulations-particularly those allowing for relaxation of requirements, cannot be relied upon to ensure protections will be adequate. Instead, BLM can only ensure protection of those areas from seismic exploration and other disturbing impacts by removing them from leasing. (29) Wilson and Durner (2020), Seismic Survey Design and Effects on Maternal Polar Bear Dens, Journal of Wildlife Management 84(2): 201-212, DOI: 10.1002/jwmg.21800.The SEIS fails to provide any analysis or explanation for BLM's decision not to exclude these hotspot areas from leasing. The failure to consider this critical protection violated NEPA's requirement to take a hard look and consider a reasonable range of alternatives, as well as substantive duties arising from the ESA and the purposes of the Refuge.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot. Lease Stipulation 14 requires lessees/operators observe the exclusion zone around known polar bear dens. Per ROP 10, seismic survey activity is prohibited within 1 mile of known, observed, or suspected polar bear dens, unless alternative protective measures are approved by the BLM Authorized Officer. Furthermore, under Alternative D2, certain areas of high-density polar bear denning habitat are excluded from leasing and seismic activity altogether.
Schoenhut	Karimah	Sierra Club	79130	11	The impacts on newborn cub survival from even a single snow trail through the areas on the Coastal Plain that are available for leasing under Alternative D would be disastrous and inconsistent with the purposes of the Refuge. Using the approach developed by Wilson and Durner (2020), statistician and biometrician Dr. Trent McDonald modeled the impacts of a single snow trail extending through the areas open to leasing under Alternative D.(30) For the location of the route, Dr. McDonald used the approximate route for the snow trail access route proposed by the Kaktovik Iñupiat Corporation in August 2021.(31) Dr. McDonald adjusted the Wilson and Durner (2020) approach to reflect that the average snow cover depth for maternal dens on the Coastal Plain of the Refuge is 154 cm, rather than the lower average used by Wilson and Durner, which reflects an average of dens across the entire north slope, including areas to the west of the Refuge where snow cover depth is likely much shallower than the Refuge.(32) Dr. McDonald's analysis shows that nearly half of dens each season (46.1%) will be covered by more than 100 cm of snow, making them undetectable regardless of the number of aerial detection surveys conducted.(33) (30) See Attachment 1A - Trent McDonald 2023 Report. Please note that Sierra Club in no manner concedes that the Wilson and Durner (2020) modeling approach is adequate to fully estimate impacts on polar bears from seismic surveys or other activities. Sierra Club asked Dr. McDonald to use the Wilson and Durner (2020) approach because the U.S. Fish and Wildlife Service has used this approach to analyze impacts for the purposes of take authorizations under the Marine Mammal Protection Act, such as the proposed KIC Incidental Harassment Authorization in 2020-2021. See id. at 2. (31) See 88 Fed. Reg. 8305 (Feb. 8, 2023) (notice describing right-of-way application); see also Attachment 1B - Right-of-Way Application Materials of Kaktovik Iñupiat Corporation to U.S. FWS obtained from https://www.fws.gov/refuge/arctic . (32) See Attachment 1A - Trent McDonald 2023 Report at 2; see also infra section V. B. (explaining basis for adjusting snow depth mean based on Refuge-specific data); Attachment 1C - Maternal Den Snow Depth Records Underlying Durner (2003), Obtained by Sierra Club FOIA Request to USGS. (33) See id. at 3; infra section V. A. (explaining that Wilson and Durner (2020) assumed that dens deeper than 100 cm would not be detected; Robinson et al. (2014) indicates dens deeper than 90 cm cannot be detected; and Woodruff et al. (2022) cannot rationally be relied upon to contradict Robinson et al. (2014)).	The SEIS acknowledges that aerial den detection is not perfect and that some denning polar bears may be impacted. The SEIS details the multi-layered approach to minimizing impacts on maternal dens which begins with protections that prohibit leasing or restrict activities in areas of highest denning density (revised Lease Stipulation 5). BLM would consider strategies to avoid or minimize impacts to denning habitat when reviewing proposals for roads and pipelines. Also, preferred denning habitat often corresponds to steep banks that road and pipeline planners typically attempt to avoid. The Required Operating Procedures in ROP 10 offer additional protection, beginning with surveys to locate polar bear dens. These surveys may include replicates and multiple methods to maximize detection probabilities. ROP 10 also requires active monitoring identified in the site-specific plan that would accompany approval. Although polar bears do den in high densities in the Coastal Plain lease area compared to elsewhere across the North Slope, den densities are still very low compared to the landscape available.
Schoenhut	Karimah	Sierra Club	79130	12	Dr. McDonald used the Wilson and Durner (2020) model to estimate the annual likelihood of a maternal den occurring within one mile of the snow trail and remaining undetected after three aerial infrared detection surveys.(34) Using that model, he found a 46.5% annual probability of an undetected den occurring within that distance, and therefore being vulnerable to lethal disturbance per the approach in Wilson and Durner (2020).(35) Given the proposed 20-year term for the right-of-way, he then used that annual probability to calculate the number of years in which an undetected den would be close enough to the route to be vulnerable to lethal impacts to cubs. Dr. McDonald used that approach to estimate that there would be a 63.8% probability of at least nine undetected dens occurring within a mile of the route over twenty years, a 95.8% probability of at least six undetected dens occurring within a mile of the route over twenty years, and a 98.6% probability of at least five undetected dens occurring within a mile of the route over twenty years.(36) (34) See Attachment 1A - Trent McDonald 2023 Report at 2-3. (35) Id. at 4. (36) Id. This modeling demonstrates that just one snow trail across the areas left open to leasing under Alternative D would create a grave risk of cub death for a large number of dens during the life of the program. First, as the Leasing SEIS contemplates not merely one trail, but hundreds of thousands of acres of ice roads even under Alternative D,(37) in addition to other even more intensive activities such as seismic surveys, Dr. McDonald's analysis shows the need for BLM to explain how any of the proposed action alternatives can possibly be adequate to comply with the Refuge purposes as they pertain to polar bears when even the most protective alternative (D) will pose such danger to newborn cubs. Second, it shows that the failure of the Leasing SEIS to analyze the reasonably foreseeable cumulative impacts on polar bear denning of the proposed Kaktovik Iñupiat Corporation snow trail route with the impacts of the proposed alternatives is a serious error. The Leasing SEIS acknowledges the pending right-of-way application, but makes no effort to analyze how the impacts on polar bear denning from that route will combine with the impacts from other foreseeable ice roads, seismic surveys, and other oil and gas activities. (37) See Leasing SEIS Table 3-26, Vol. 1 at 3-104.	The SEIS acknowledges that aerial den detection is not perfect and that some denning polar bears may be impacted. The SEIS details the multi-layered approach to minimizing impacts on maternal dens which begins with protections that prohibit leasing in areas of highest denning density (revised Lease Stipulation 5). The BLM would consider strategies to avoid or minimize impacts to denning habitat when reviewing proposals for roads and pipelines. Also, preferred denning habitat often corresponds to steep banks that road and pipeline planners typically attempt to avoid. ROP 10 would offer additional protection, beginning with surveys to locate polar bear dens. These surveys may include replicates and multiple methods to maximize detection probabilities. ROP 10 also requires active monitoring identified in the site-specific plan that would accompany approval. Although polar bears do den in high densities in the Coastal Plain lease area compared to elsewhere across the North Slope, den densities are still very low compared to the landscape available.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoenhut	Karimah	Sierra Club	79130	13	Dr. McDonald's analysis underlines the need for BLM to close the core polar bear denning density "hotspots" to leasing. The Leasing SEIS fails to provide the information necessary to demonstrate that even the most protective alternative considered (Alternative D) is adequate to comport with the protective purposes of the Refuge. The best available scientific information indicates that Alternative D is not adequate to protect newborn polar bears cubs from lethal impacts, that extensive impacts are reasonably foreseeable, and that none of the action alternatives considered can rationally be deemed to comport with the Refuge purposes.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Schoenhut	Karimah	Sierra Club	79130	16	The Leasing SEIS Inflates the Effectiveness of Aerial FLIR Surveys The SEIS inflates the effectiveness of individual aerial infrared surveys ("forwardlooking infrared surveys" or "FLIR") by presenting a den detection success rate of 54%, based on Wilson and Durner (2020) as the upper threshold, and 24% as the lower threshold.(44) (44) See Leasing SEIS at 3-249. The lower threshold presented in the SEIS appears to be based on Woodruff et al. (2022), Evaluating the efficacy of aerial infrared surveys to detect artificial polar bear dens. Wildlife Society Bulletin, 46(3), 1-20. The Estimate Derived from Wilson and Durner (2020) in Biased High Due to Numerous Factors First, reliance on the estimate from Wilson and Durner (2020) is unsupportable because Wilson and Durner obtained their estimate by analyzing the data from Amstrup (2004)(45)-a study where researchers used a helicopter to conduct FLIR surveys, not a fixed-wing aircraft.(46) As Dr. Amstrup has repeatedly explained, use of a helicopter increases the likelihood of detection success relative to use of a fixed-wing aircraft.(47) It is irrational for the SEIS to present success rates obtained by helicopter FLIR surveys when neither FWS nor BLM has ever required the FLIR surveys to be conducted by helicopter. (45) Amstrup et. al (2004), Detecting Denning Polar Bears with Forward-Looking Infrared (FLIR) Imagery, Bioscience 54. (46) Amstrup et. al (2004) at 338 ("The Safire was gimbal mounted under the nose of a Bell 212 helicopter. This mounting system allowed the imager to be directed independent of the attitude of the aircraft and in any direction below the horizontal plane of the aircraft."); see also Attachment 3C - June 30, 2021 Comments of Dr. Steven Amstrup to U.S. FWS on Proposed Incidental Take Regulation North Slope, Alaska at paragraph 23 ("We flew multiple flights with helicopters so we could precisely control approach route, elevation, speed, and view angle to determine whether each den was detectable.) (describing Amstrup et al. (2004)). (47) See, e.g., Attachment 3E - "Review of the SAE proposal for Seismic Exploration on the Coastal Plain, Steven C. Amstrup, PhD, Polar Bears International August 15, 2018" ("All surveys completed for the Amstrup et al. (2004) analysis were performed with helicopters. Helicopters allow essentially infinite variation of view angle and speed.... These nimble flight capabilities of helicopters maximize efficacy of FLIR surveys and were strongly recommended in the FLIR operations protocol developed after testing was completed (York et al. 2004). Despite recommendations, all operational surveys have been conducted with fixed wing aircraft. Fixed wing aircraft typically require flight at higher altitude, have much greater restrictions on approach speed and view angles, and of course cannot hover. The typically more restricted visibility from fixed wing aircraft, prevents focusing on suspicious spots, and higher flight altitude along with faster speeds limit the ability to visually check suspected hotspots from the air.") (submitted on thumb drive as a supporting document); see also Attachment 3C - June 30, 2021 Comments of Dr. Steven Amstrup to U.S. FWS on Proposed Incidental Take Regulation North Slope, Alaska at paragraph 23 ("Whether an AIR survey is conducted from fixed-wing plane or helicopter will also affect detection success. Helicopters have much greater flexibility to vary speed (they can even stop in mid-air which we often did in efforts to detect dens), view angle, and elevation, and hence are more suitable to AIR surveys than fixed wing aircraft.").	Until better methods are developed, FLIR represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. The Draft SEIS states that FLIR does not provide perfect detection. The best available data indicate a range of detectability from 24 percent to 54 percent, depending on the experience of the crew, the number of surveys flown, the prevailing weather conditions at the time of the survey(s), and seasonal timing and snow depth (Wilson and Durner 2020; Smith et al. 2020; Woodruff et al. 2022b). Smith et al. 2020 conducted FLIR surveys of real polar bear dens from fixed-wing and recorded 45% detection rate. The SEIS does not present the success rate from helicopter surveys (90%, Amstrup et al. 2004). Instead, it cites the estimate derived by Wilson and Durner used data from Amstrup et al. 2004 with additional restrictions to generate an imputed dataset that was then used in a Bayesian framework to estimate the probability that a den was detected during a single survey, given that it had a den wall <100cm thick. They also incorporated the probability that a den had walls too thick to allow detection by FLIR. Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detection requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys. The SEIS declines the recommendation to prescribe use of helicopters to meet aerial FLIR surveys requirements. While the limited available data suggests that helicopter-based FLIR may be slightly more effective than fixed-wing FLIR at detecting occupied dens, this remains rather uncertain. Meanwhile, the level of disturbance is greater for helicopters (see Quigly et al. 2024), increasing the possibility that aerial FLIR surveys themselves could lead to early emergence of any cubs present before they are viable to survive outside the den.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoenhut	Karimah	Sierra Club	79130	17	Furthermore, in Amstrup (2004), the researchers knew the den locations in advance due to radio-collaring of the denning bears, and that study did not involve the same methodologies that Woodruff et al. (2022) used to avoid biasing the results high.(48) In prior comments to FWS, Dr. Amstrup explains in detail why, in incorporating the estimate derived from Wilson and Durner (2020), FWS has failed to consider the factors showing that this results in a FLIR success rate that is biased high, and unrealistic.(49) (48) Compare Amstrup et al. (2004) at 339 with Woodruff et al. (2022) at 9-10 (describing steps required to "maintain flight crew naivety" and avoid "the potential for situational awareness...to bias results"); see also Attachment 3C - June 30, 2021 Comments of Dr. Steven Amstrup to U.S. FWS on Proposed Incidental Take Regulation North Slope, Alaska, at paragraph 29. (49) See Attachment 3C - June 30, 2021 Comments of Dr. Steven Amstrup to U.S. FWS on Proposed Incidental Take Regulation North Slope, Alaska, at paragraphs 23-29. These paragraphs are incorporated in full here by reference. For instance, he explained that: Our study (Amstrup et al. 2004) was focused on trying to detect dens for which we already knew exact location from radiotelemetry tracking of maternal females or other methods employed in our long-running polar bear research studies. We knew the slope, aspect, and other topographic variables of the feature along which each den was located, and we know the surrounding terrain as well. We flew multiple flights with helicopters so we could precisely control approach route, elevation, speed, and view angle to determine whether each den was detectable. Note we did not assess the probability that a single survey, in which personnel had no knowledge of what was or was not there, could detect a den. We knew where dens were and gave ourselves every advantage in testing whether our infrared detector could see them.	Until better methods are developed, FLIR represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. The Draft SEIS states that FLIR does not provide perfect detection. The best available data indicate a range of detectability from 24 percent to 54 percent, depending on the experience of the crew, the number of surveys flown, the prevailing weather conditions at the time of the survey(s), and seasonal timing and snow depth (Wilson and Durner 2020; Smith et al. 2020; Woodruff et al. 2022b). Smith et al. 2020 summarized results from single industry-led, fixed-wing aircraft FLIR surveys of real polar bear dens and recorded 45% detection rate with flight crews naïve to the presence of, or location of, dens. The SEIS does not present the success rate from helicopter surveys (90%, Amstrup et al. 2004) Instead, it cites the estimate derived by Wilson and Durner that used data from Amstrup et al. 2004 with additional restrictions to generate an imputed dataset. The imputed dataset was then used in a Bayesian framework to estimate the probability that a den was detected during a single survey, given that it had a den wall <100cm thick. They also incorporated the probability that a den had walls too thick to allow detection by FLIR.
Schoenhut	Karimah	Sierra Club	79130	18	Importantly, Amstrup et al. (2004) did not test the efficacy of AIR surveys as they might be applied by industry to ensure an area proposed for development does not hold any maternal dens. ... Detecting dens in the blind is a totally different experience than flying to a known location with known topography etc., and it is inappropriate to extrapolate from the results of Amstrup et al (2004) to predict detection probabilities for unknown dens. ... Amstrup et al. (2004) were trying to assess the potential for FLIR. They overlooked the biases caused by landscape familiarity etc., in order to see whether dens could be detected in a variety of circumstances. Clearly, if an observer is familiar with the landscape features and where in that landscape the bear den is, you are more likely to detect a subtle heat signal than if you are not blessed with those advanced warnings. Estimated detection rates of Amstrup et al. (2004) therefore were biased high compared to any situation where personnel are searching an open landscape for dens that may or may not be present in the surveyed area. Developing some kind of detection distribution from that work (Amstrup et al. 2004) and suggesting it could apply in the real-world situation of unknown den locations across multiple and varied pieces of habitat is not realistic. (50) (50) Attachment 3C - June 30, 2021Comments of Dr. Steven Amstrup to U.S. FWS on Proposed Incidental Take Regulation North Slope, Alaska, at paragraphs 23, 24, 28-29.	Until better methods are developed, FLIR represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. The Draft SEIS states that FLIR does not provide perfect detection. The best available data indicate a range of detectability from 24 percent to 54 percent, depending on the experience of the crew, the number of surveys flown, the prevailing weather conditions at the time of the survey(s), and seasonal timing and snow depth (Wilson and Durner 2020; Smith et al. 2020; Woodruff et al. 2022b). Smith et al. 2020 summarized single industry-led, fixed-wing aircraft FLIR surveys of real polar bear dens and recorded 45% detection rate with flight crews naïve to the presence of, or location of, dens. The aerial FLIR efficacy rates discussed in the SEIS are not biased high. Rather, they account for the best available data derived from multiple pertinent sources. The SEIS does not present the success rate from helicopter surveys (90%, Amstrup et al. 2004) Instead, it cites the estimate derived by Wilson and Durner that used data from Amstrup et al. 2004 with additional restrictions to generate an imputed dataset. The imputed dataset was then used in a Bayesian framework to estimate the probability that a den was detected during a single survey, given that it had a den wall <100cm thick. They also incorporated the probability that a den had walls too thick to allow detection by FLIR.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoenhut	Karimah	Sierra Club	79130	19	Moreover, as Sierra Club previously detailed extensively in its comments to FWS regarding Wilson and Durner (2020), the approach described in Wilson and Durner underestimates the number of dens that will be undetected due to snow depth cover by, inter alia: (1) using a cut-off snow cover depth of 100 cm rather than 90 cm, and (2) not accounting for the reality that the mean snow cover depth used to generate the model depths was measured at the point of minimum thickness. Due to these issues, the Wilson and Durner derived success rate reflects an underestimation of the proportion of dens that will be totally undetectable due to snow-depth cover-the success rate of 0.54 is inflated by these errors.	Wilson and Durner 2020 used a cutoff of 100 cm based on results from Amstrup et al. 2004 and further restricted the dataset to account for surveys conducted in darkness (as is required for aerial FLIR surveys of polar bear dens). They then applied a Bayesian model to develop a more accurate detection probability. The variation in depth of snow above actual den chambers (+/- 87 cm, Durner et al. 2003) far exceeds 10 cm. The design of this simulation incorporates uncertainty in the average depth of snow above the chamber of the dens and uncertainty in detection probabilities within the 1,000 iterations of the model.
Schoenhut	Karimah	Sierra Club	79130	20	First, Wilson and Durner assume that dens will be susceptible to detection unless the snow depth covering it is > 100 cm. The authors assert that "Robinson et al. (2014) observed that dens with snow depth >100 cm were not detectable with hand-held FLIR devices." But what Robinson et al. (2014) actually stated is: "We found the mean point of den wall thickness at which dens became undetectable to be 90 cm."(51) Discussing the same mean snow depth above dens reported by Durner (2003)(52) that Wilson and Durner rely on, Robinson et al. (2014) stated: "The snow depth above the chamber of a polar bear den can vary greatly (M= 72 cm, SD =87) and has been measured up to 400 cm (Durner 2003). This suggests that a large portion of dens have wall thicknesses greater than 90 cm and would probably go undetected regardless of survey conditions."(53) Wilson and Durner do not explain why they are using 100 cm instead of 90 cm. To the extent that they are tacitly interpreting the data points in Amstrup et al. (2004) as showing that dens with snow depth >90 cm are detectable, that interpretation would not be reasonable. Although Amstrup et al. (2004) did report that a den with snow cover of 96 cm had been detected, the measurements of snow cover did not reflect the snow cover at the time of the FLIR survey.(54) (51) Robinson et al. (2014) Factors influencing polar bear den detection using forward-looking infrared imagery. BioSci. 64: 735-742, at 739. Notably, Robinson et al. found this to be the case even under ambient conditions ideal for FLIR detection. ("Robinson et al. (2014)"). (52) Durner, George M., Steven C. Amstrup, and Anthony S. Fischbach (2003), "Habitat Characteristics of Polar Bear Terrestrial Maternal Den Sites in Northern Alaska," Arctic (56):55-62. (hereafter "Durner (2003)"). (53) Robinson et al. (2014) at 741. (54) See Amstrup et. al (2004), Detecting Denning Polar Bears with Forward-Looking Infrared (FLIR) Imagery, Bioscience 54, at 339 ("After the bears left their dens in the spring, we attempted to visit each den and hot spot located the preceding winter. At that time we recorded the amount of snow overlying the lair."); 340 ("We did not include snow depth because only one measurement (made at the end of each field season) was available for each den, and we had no way to assess possible differences among survey flights."); at 341 ("Mean snow depth over detected dens was 40 centimeters (cm) and only 31 cm over undetected dens; the greatest depth (96 cm) was recorded over a detected den.").	Robinson conducted their study using hand-held FLIR, not airborne FLIR, which is the industry standard required in existing ITRs. Wilson and Durner 2020 used a cutoff of 100 cm based on results from Amstrup et al. 2004 and then further restricted the dataset to account for surveys conducted in darkness (as is required for aerial FLIR surveys of polar bear dens). They then applied a Bayesian model to develop a more accurate detection probability. The variation in depth of snow above actual den chambers (+/- 87 cm, Durner et al. 2003) far exceeds 10 cm. The design of this simulation incorporated uncertainty in the average depth of snow above the chamber of the dens and uncertainty in detection probabilities within the 1,000 iterations of the model.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoenhut	Karimah	Sierra Club	79130	21	Explaining why snow depth was not considered as a covariate in the statistical analysis, Amstrup et al. (2004) stated, "We did not include snow depth because only one measurement (made at the end of each field season) was available for each den, and we had no way to assess possible differences among survey flights."(55) Amstrup et al. (2004) only measured snow depth at the den location in the spring.(56) Since snow in northern Alaska accumulates over the course of the winter, and often does not reach its maximum until April right before the onset of melt, springtime measurement does not provide information about what the snow depth necessarily was at any prior point in the winter.(57) Notably, Amstrup et al. (2004) does not specify what month each FLIR survey took place, only that the surveys were during the winter, but does indicate that surveys took place as early as November.(58) Since there is no way to know what the snow cover was at the time the den in question was detected by surveys, that data cannot rationally be relied upon to assert that dens with snow cover >90 cm are detectable. The best available science on this question therefore is Robinson et al. (2014), which indicates that it is unreasonable to assume dens with more than 90 cm cover will be detectable.(59) For these reasons, Wilson and Durner's reliance on 100 cm as the cut-off point rather than 90 cm underestimates the proportion of dens that would be undetectable due to snow depth. (55) Amstrup et al. (2004) at 340 (emphasis added). (56) Amstrup et al. (2004) at 339. (57) See, e.g., Sturm, Matthew, et al. (2019), University of Alaska Fairbanks, Geophysical Institute, A Report on the Snow Cover of the 1002 Area of the Arctic National Wildlife Refuge, 2014-2019, available at http://catalog.northslopescience.org/catalog/entries/8986. at 33, Figure 26 (describing that snow accumulation may be either a ramp pattern "where snow depth increases linearly through the winter, reaching maximum depth in April just before the onset of melt" or a "step-like pattern where autumnal and early winter storms jump the snow depth fast in November and December and sometimes January, achieving maximum depth in mid-winter."); id. at 2 (stating that the ramp-pattern of build-up occurs 54% of the time.); id at 7 (describing step-pattern build-up as reaching the maximum snow depth "around January"); id. at 32 ("the depth maps we have presented here represent a best-case scenario for over-snow travel, because they were acquired at the end of the winter season. In Arctic Alaska the snow doesn't melt until spring (and never melts at the base); it builds up through the winter. That build-up can be slow or fast, so achieving the depth distribution shown on the maps in Figure 15 may not occur until late February or March, as the ratio of STEP and RAMP winters in Table 1 indicate (54% are the slow building ramp patterns).") (emphasis added); id. at 37 ("North Slope snow builds continually through the winter, mainly happening in four to six key snowfalls."); id. at 7 ("The Barter Island record...suggests that the average date for the maximum snow depth occurred most often in March or April."). (58) Amstrup et al. (2004) at 338-339. (59) See Attachment 3C - June 30, 2021Comments of Dr. Steven Amstrup to U.S. FWS on Proposed Incidental Take Regulation North Slope, Alaska, paragraphs 23, 65; Smith (2020) ("Variable snow depth over maternal dens may explain detection failures occurring even when survey conditions seem appropriate. Robinson et al. reported that even under ideal ambient conditions, hand-held FLIR was unable to detect a thermal signature emanating from artificial test dens if roof thickness exceeded 90 cm. While the actual roof thickness that precludes detection by industry AFS is uncertain, it is clear there is a snow depth threshold that prevents sufficient heat generated by denned bears from reaching the snow surface.").	Robinson conducted their study using hand-held FLIR, not airborne FLIR, which is the industry standard required in existing ITRs. Wilson and Durner 2020 used a cutoff of 100 cm based on results from Amstrup et al. 2004 and then further restricted the dataset to account for surveys conducted in darkness (as is required for aerial FLIR surveys of polar bear dens). They then applied a Bayesian model to develop a more accurate detection probability. The variation in depth of snow above actual den chambers (+/- 87 cm, Durner et al. 2003) far exceeds 10 cm. The design of this simulation incorporated uncertainty in the average depth of snow above the chamber of the dens and uncertainty in detection probabilities within the 1,000 iterations of the model.
Schoenhut	Karimah	Sierra Club	79130	22	In deriving the 54% the detection success rate from Wilson and Durner for use in its estimated individual survey detection success rate for the 2021-2026 North Slope ITR, the Service perpetuated this error. See 85 Fed. Reg. at 29411 (col. 3) (explaining how FWS used the approach in Wilson and Durner to adjust Wilson and Durner's reported mean of 0.74 for dens with <100 cm snow cover to 0.54 to account for the assumption that 24% of SBS land dens would be undetectable by aerial FLIR due to having snow cover >100 cm). Notably, the Bureau and Service could not rationally rely on the Woodruff et al. (2022) study to repudiate the findings of Robinson et al. (2014) regarding snow cover depth precluding FLIR detection. Although the preamble to the proposed 2021-2026 North Slope ITR and findings stated that the Woodruff study "did not find a relationship between den snow depth and detection," 86 Fed. Reg. at 29,411, it is clear that the Woodruff study did not actually measure the snow cover depths at the time that the FLIR surveys were conducted, and indeed the snow cover depths on the days that the FLIR surveys were conducted is unknown. The reality is that snow cover on the North Slope can shift with the winds causing snow to drift from one area to another or blow out of shallower traps. Thus, knowing the snow cover depth for an artificial den at the time it was created does not mean that the snow cover depth will be that deep even a few days later. It plainly could have been reduced by winds, or affected by other weather conditions.(60) (60) See Sturm et al. (2019) at 9 ("Perhaps even more important to determining the snow depth in a specific tundra location, all across the North Slope of Alaska the winter winds are frequently in excess of 6 m/s (12 mph), a speed that has been shown to be sufficient to erode snow lying on the ground and transport it downwind (Pomeroy and Brown, 1990; Li and Pomeroy, 1997; Sturm and Stuefer, 2013)."); id. (explaining that the snow drift traps in the portions of the North Slope outside the Coastal Plain of the Arctic Refuge are smaller and shallower than in the Refuge, and therefore are not as efficient as stockpiling snow, which therefore can blow out instead of staying in the trap, unlike in the Refuge where snow is more likely to stay in the traps).	Wilson and Durner 2020 used a cutoff of 100 cm based on results from Amstrup et al. 2004 and then further restricted the dataset to account for surveys conducted in darkness (as is required for aerial FLIR surveys of polar bear dens). They then applied a Bayesian model to develop a more accurate detection probability. The variation in depth of snow above actual den chambers (+/- 87 cm, Durner et al. 2003) far exceeds 10 cm. The design of this simulation incorporates uncertainty in the average depth of snow above the chamber of the dens and uncertainty in detection probabilities within the 1,000 iterations of the model. Until better methods are developed, FLIR represents the best available technology for searching large areas for maternal dens in advance of seismic exploration and other activities. The limitations of FLIR are discussed in the SEIS and FLIR would be used in concert with other techniques.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoenhut	Karimah	Sierra Club	79130	23	Consequently, the Woodruff study's observation that a single artificial den with a 145 cm snow cover thickness at the time of construction was detected in surveys that took place at later points in time does not and cannot rationally be used to repudiate the findings of Robinson et al. 2014. Furthermore, it is clear that the Woodruff et al. (2022) study was not actually implemented consistent with a design to evaluate the relationship of snow cover depth to detection. If it had been, the researchers would have measured the actual snow depth cover over the artificial dens on the days that the aerial FLIR surveys were conducted,(61) or soon thereafter, rather than relying on the unexamined assumption that snow depth "presumably" could only be deeper than at the time of construction. Indeed, the authors indicated that they intended to collect such measurements, but were prevented from doing so due to severe weather. As Dr. John Whiteman, chief research scientist for Polar Bears International explained in his comments on the draft SEIS, the wind conditions prevailing between the time of den construction and even the earliest aerial surveys in the Woodruff et al. (2022) study make it "highly likely that wind action on the snow surface during those 9 days between den construction and detection altered the depth of snow that had previously been measured at 145cm.... In contrast, Robinson et al. (2014) measured snow thickness every time that they recorded infrared imagery, indicating that their modeling and the associated 90 cm threshold for detection is more likely to be realistic." (62) (61) See, e.g., Pedersen et al. (2020), Effects of environmental conditions on the use of forward looking infrared for bear den detection in the Alaska Arctic, Conservation Science and Practice, 2:e215, https://doi.org/10.1111/csp2.215 , at 4 (describing how ceiling thickness of artificial polar bear dens was repeatedly measured during each observation period); Robinson et al. (2014) at 736 (explaining how measuring sticks were used to monitor changes in den wall thickness throughout the sampling period as snow depth changed because of wind and snowfall). (62) Attachment 2 - John Whiteman, Ph.D., Chief Research Scientist, Polar Bears International, Letter re: Impacts on Polar Bears from Future Oil and Gas Activity as Described in Arctic National Wildlife Refuge Coastal Plain Leasing Program SDEIS (Oct. 25, 2023) at 3-4.	The Woodruff study's observation that a single artificial den with a 145 cm snow cover thickness at the time of construction was detected in surveys is not used as a threshold or rationale in the SEIS. Wilson and Durner 2020 used a cutoff of 100 cm based on results from Amstrup et al. 2004 and then further restricted the dataset to account for surveys conducted in darkness (as is required for aerial FLIR surveys of polar bear dens). They then applied a Bayesian model to develop a more accurate detection probability. The variation in depth of snow above actual den chambers (+/- 87 cm, Durner et al. 2003) far exceeds 10 cm. The design of this simulation incorporates uncertainty in the average depth of snow above the chamber of the dens and uncertainty in detection probabilities within the 1,000 iterations of the model.
Schoenhut	Karimah	Sierra Club	79130	24	The Leasing SEIS Inflates the Effectiveness of Aerial FLIR Surveys by Failing to Consider that Mean Den Snow Cover Depth in the Refuge is Deeper than Other North Slope Areas In presenting the 54% success rate derived from Wilson and Durner (2020) as the upper threshold for an individual aerial survey, the SEIS also fails to take into account that polar bear dens in or near the Arctic National Wildlife Refuge are much more likely to be totally undetectable by FLIR due to much deeper snow depth cover than dens in other parts of the North Slope. Consequently, the FLIR detection success rate of 54% derived from Wilson and Durner (2020) does not capture the reality that many dens in and near the Refuge will be undetectable regardless of the number of FLIR surveys conducted. As Sierra Club previously detailed extensively in its comments to FWS regarding Wilson and Durner (2020), in addition to the concerns discussed already above, the approach described in Wilson and Durner underestimates the number of dens that will be undetected in and near the Coastal Plain of the Arctic National Wildlife Refuge due to snow cover depth. The Wilson and Durner approach generates the random snow cover depths for each modeled den using a mean snow depth cover that is biased low due to the difference in snow drift height between areas in the Coastal Plain of the Refuge and other portions of the north Alaskan coastline that were sampled to generate that mean.	Although there is uncertainty around the average depth of snow over polar bear dens in the Refuge, the SEIS uses the best available information to determine uncertainties in den detection with FLIR. There is likely a functional relationship between snow depth and detection with FLIR (not a threshold), but that relationship has not yet been determined. Additionally, the SEIS uses a range of detection probabilities between 24-54%. Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.
Schoenhut	Karimah	Sierra Club	79130	25	Wilson and Durner's approach to modeling how many dens would have snow cover exceeding the threshold of 100 cm uses the mean and standard deviation snow cover depth reported by Durner (2003) of 72 + 87 cm, but fails to take into account that the dens evaluated in Durner et al. (2003) to generate that mean were in large part located in areas of northern Alaska outside the Coastal Plain of the Arctic Refuge.(63) Use of this mean and standard deviation results in underestimating the number of dens that will remain undetected due to snow cover depth, and therefore underestimating the number of dens subjected to potential injury and lethal consequences. The SEIS perpetuates this error by failing to take into account that a greater proportion of dens in or near the Coastal Plain of the Refuge will be undetectable by FLIR due to snow cover depth. (63) Durner et al. (2003), Habitat Characteristics of Polar Bear Terrestrial Maternal Den Sites in Northern Alaska, Arctic (56): 55-62, at 57, Figure 1 (map showing that the den sites evaluated were located not only on the Coastal Plain of the Refuge, but also along the coast of Northern Alaska from the NPRA to the western edge of the Refuge); see Attachment 3D - January 4, 2021 Comments of Dr. Steven Amstrup on Proposed KIC IHA, paragraph 65.	Although there is uncertainty around the average depth of snow over polar bear dens in the Refuge, the SEIS uses the best available information to determine uncertainties in den detection with FLIR. Although there is likely a functional relationship between snow depth and detection with FLIR (not a threshold), that relationship has not yet been determined. Additionally, the SEIS uses a range of detection probabilities between 24-54%. The estimate derived by Wilson and Durner used data from Amstrup et al. 2004 with additional restrictions to generate an imputed dataset that was then used in a Bayesian framework to estimate the probability that a den was detected during a single survey, given that it had a den wall <100cm thick. They also incorporated the probability that a den had walls too thick to allow detection by FLIR. Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoenhut	Karimah	Sierra Club	79130	26	As Sturm et al. (2019) describe, due to climatic and physiographic differences between the Coastal Plain of the Refuge and northern Alaska coast areas to the west of the Refuge, such as the NPRA, including "steeper, more incised streams and deeper drainages," the drift traps in in the drainages of the 1002 area are "deeper...and able to absorb more snow than the smaller traps to the west" such that "[o]nce blowing snow lands in such traps, it stays."(64) Because "the terrain is steeper" in the 1002 area, and "the rivers and creeks more incised" this results in "larger capacity" drift traps where snow from flat areas outside the drainages becomes immobilized rather than blowing out again.(65) Further, because "the wind definitely blows harder in the 1002 area than to the west...there is more snow transport...[which] effectively removes snow from the flatter areas, stockpiling it in drifts that for depth dwarf any drifts the authors have measured in areas to the west."(66) Sturm et al. (2019) report that snow depths on the 1002 area can reach their maximum as early as January when accumulation follows the "step-like" pattern, which it does about 46% of the time.(67) Thus even for a FLIR-survey conducted in January, snow depths could already be at their maximum, making it more likely that dens will have snow cover depth precluding detection. In sum, Sturm et al. (2019) provides ample evidence that the mean snow cover for dens in the Coastal Plain of the Refuge very likely is significantly deeper than the mean from Durner et al. (2003), which includes data from areas to the west of the Refuge, where conditions are less likely to result in drifts of the magnitude observed on the 1002 area. (64) Sturm et al. (2019) at 5, 9. (65) Sturm et al. (2019) at 30. (66) Sturm et al. (2019) at 30 (emphasis added). (67) Sturm et al. (2019) at 33, Figure 26 (describing that snow accumulation may be either a ramp pattern "where snow depth increases linearly through the winter, reaching maximum depth in April just before the onset of melt" or a "step-like pattern where autumnal and early winter storms jump the snow depth fast in November and December and sometimes January, achieving maximum depth in mid-winter."); id. at 2 (stating that the ramp-pattern of build-up occurs 54% of the time.); id at 7 (describing step-pattern build-up as reaching the maximum snow depth "around January").	Until better methods are developed, FLIR represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. The Draft SEIS states that FLIR does not provide perfect detection.
Schoenhut	Karimah	Sierra Club	79130	27	Furthermore, via a FOIA request submitted to USGS for the individual den snow depth cover measurements used by Durner et al. (2003) to develop their snow cover depth estimate of 72 + 87 cm, Sierra Club obtained records from that study describing the characteristics of each individual den, and its location.(68) Sierra Club mapped the location of each den and used the information in the records to generate a mean snow depth cover for the dens located in or immediately adjacent to the boundaries of the Arctic National Wildlife Refuge. That exercise confirmed that the average snow depth for the six den locations within or immediate to the Arctic Refuge was approximately 154 cm, with a standard deviation of 149 cm,(69) indicating that Wilson and Durner (2020) underestimates the percentage of dens in the Refuge that will be undetectable due to snow cover depth. (68) See Attachment 1C - Maternal Den Snow Depth Records Underlying Durner (2003), Obtained by Sierra Club FOIA Request to USGS. (69) The individual snow cover depths for the six maternal land dens that were within or immediate to the Arctic Refuge boundaries were 15, 55, 67, 120, 265, and 400 cm. See Attachment 1C for records of den depths and locations. The mean of those six measurements is (15+55+67+120+265+400 cm)/6 = 154 cm. The standard deviation calculated in Microsoft Excel is 149 cm. The GPS coordinates recorded for a seventh den location near the Refuge placed it offshore, so it is unclear whether that den should also be included in calculating the mean. The snow cover depth for that seventh den was 47 cm. If that seventh den is included in the calculations, the mean would be approximately 138 cm, with a standard deviation of 142 cm.	The range of snow depth over the 7 dens referred to in this comment is really large and although the mean is 142cm, 4 of the 7 dens (57%) have depth cover <100 cm and would theoretically be detected by FLIR, supporting the SEIS range of detection probabilities between 24-54%. Although there is uncertainly around the average depth of snow over polar bear dens in the Refuge, the SEIS uses the best available information to determine uncertainties in den detection with FLIR. There is likely a functional relationship between snow depth and detection with FLIR (not a threshold), but that relationship has not yet been determined. Additionally, the SEIS uses a range of detection probabilities between 24-54%. Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.
Schoenhut	Karimah	Sierra Club	79130	28	As mentioned above, FWS derived a 54% success rate from Wilson and Durner (2020) by starting with a detection success rate of 74% derived from Amstrup (2004), and then reducing it to account for the proportion of dens estimated to be deeper than 100 cm, and therefore undetectable, based on randomly generated depths around a mean depth of 72 + 87 cm, as a result of which 24% of dens were estimated to be undetectable. If FWS had used the Refuge specific mean instead (154 cm, with a standard deviation of 149 cm), the detection rate derived from Wilson and Durner (2020) would be lower than the 54% presented in the SEIS. Indeed, Dr. Trent McDonald evaluated the effects of using the Refuge-specific mean of 154 cm instead of the 72 cm used by Wilson and Durner (2020) and found that it approximately doubled the number of dens deeper than 100 cm from 23.6% to 46.1%.(70) This is particularly important because it shows that even with multiple FLIR surveys, at least 46% of the dens in the Refuge would be deeper than 100 cm, and therefore not detectable. Thus 54% cannot be considered the upper threshold for success for an individual survey, such that a higher net success rate could be achieved via multiple surveys. Rather, at best, it would be the maximum detection rate even with multiple surveys. And, as discussed above, the reality is that more than 46.1% would be totally undetectable due to snow depth because the best available science indicates that dens are undetectable with 90 cm of snow cover, rather than 100 cm, and because detection of dens with less than 90 cm cover would not be perfect, even with multiple surveys. (70) Attachment 1A - Trent McDonald 2023 Report at 2, 3.	Although there is uncertainly around the average depth of snow over polar bear dens in the Refuge, the SEIS uses the best available information to determine uncertainties in den detection with FLIR. There is likely a functional relationship between snow depth and detection with FLIR (not a threshold), but that relationship has not yet been determined. Additionally, the SEIS uses a range of detection probabilities between 24-54%. Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoenhut	Karimah	Sierra Club	79130	29	Reliance on the 45% from Smith (2020) Also Irrationally Inflates the Success Rate for Den Detection by Aerial FLIR To the extent that the SEIS is relying on Smith (2020) to inform the success rate for a single FLIR survey, that reliance would be misplaced because the areas surveyed in Smith (2020) are less likely to be subject to the high-wind conditions that impair FLIR detection than areas within the Coastal Plain of the Refuge. Smith et al. (2020) studied FLIR survey success rates for a set of actual aerial FLIR surveys conducted by industry between 2004 and 2016 over northern Alaska during the months of December and January, with almost all of the surveys flown in early to mid-December, and tracked the weather conditions associated with those surveys.(71) Overall, they found that industry FLIR surveys between 2004 and 2016 successfully detected only 45% of 33 known dens.(72) Further, of thirteen industry FLIR surveys from 2007-2016 that Smith et al. evaluated, 8 were conducted on days in December and January when wind speeds impaired detection.(73) Since conditions on the Coastal Plain are likely to differ from other areas of northern Alaska, in particular wind conditions and snow drift depth, (74) detection success rates for the Coastal Plain would be even lower than 45%. The 2-3 mile per hour higher winds prevailing on the Coastal Plain compared to the areas surveyed in Smith (2020) mean that detection rates will be worse on average than the 45% value in Smith (2020), and more likely to cross the threshold precluding FLIR detection. The concerns raised above, regarding the impacts of snow depth, also apply, as deeper snow cover than in the areas surveyed in Smith (2020) would make more dens undetectable. (71) Smith TS, Amstrup SC, Kirschhoffer BJ, York G (2020), Efficacy of aerial forward-looking infrared surveys for detecting polar bear maternal dens. PLoS ONE 15(2): e0222744. https://doi.org/10.1371/journal.pone.0222744 . (72) See Smith et al. (2020) Table 1. (73) See Smith et al. (2020) Table 2. (74) The average wind speed for winter in the 1002 area is 2-3 miles per hour faster than in the areas farther west. Sturm et al. (2019) at Figure 5.	Until better methods are developed, FLIR represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. The Draft SEIS states that FLIR does not provide perfect detection. The best available data indicate a range of detectability from 24 percent to 54 percent, depending on the experience of the crew, the number of surveys flown, the prevailing weather conditions at the time of the survey(s), and seasonal timing and snow depth (Wilson and Durner 2020; Smith et al. 2020; Woodruff et al. 2022b). Smith et al. 2020 summarized single industry-led, fixed-wing aircraft FLIR survey of real polar bear dens and recorded a 45% detection rate with flight crews naïve to the presence of, or location of, dens. Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.
Schoenhut	Karimah	Sierra Club	79130	30	As Dr. John Whiteman detailed in his comments on the draft SEIS, the single survey success rate ranging from 15% to a maximum of 24% observed in the Woodruff et al. (2022) represents the most reasonable estimate of what single aerial surveys are likely to achieve.(75) And again, because a large portion of the dens in the Refuge will be too deep to be detected by FLIR surveys, that portion should be considered undetectable, such that even requirements for multiple surveys will never detect them. (75) Attachment 2 - John Whiteman, Ph.D., Chief Research Scientist, Polar Bears International, Letter re: Impacts on Polar Bears from Future Oil and Gas Activity as Described in Arctic National Wildlife Refuge Coastal Plain Leasing Program SDEIS (Oct. 25, 2023) at 4-5.	Until better methods are developed, FLIR represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. The Draft SEIS states that FLIR does not provide perfect detection. The best available data indicate a range of detectability from 24 percent to 54 percent, depending on the experience of the crew, the number of surveys flown, the prevailing weather conditions at the time of the survey(s), and seasonal timing and snow depth (Wilson and Durner 2020; Smith et al. 2020; Woodruff et al. 2022b). Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.
Schoenhut	Karimah	Sierra Club	79130	31	The Leasing SEIS Unlawfully Misrepresents the Effectiveness of Both Past and Future ITRs and Thereby Fails to Evaluate Reasonably Foreseeable Injury and Death of Denning Cubs The Leasing SEIS misleadingly asserts that the mitigation required under past ITRs has been effective at preventing impacts to polar bears.(76) The SEIS states: "Industry reporting under the ITR/LOA process in those fields have demonstrated that required mitigation has been effective at keeping both incidental and intentional take at negligible levels."(77) The SEIS does not in any manner reconcile this assertion with concessions made by FWS in the preamble for the 2021-2026 North Slope ITR, which acknowledged that injury and death of denning cubs due to oil and gas activities was likely underestimated and unreported.(78) FWS explained that past take of cubs due to den disturbances would be underreported due to the limited extent of den detection surveys and monitoring, the difficulty of observing such take in the dark, and the latent nature of cub death caused by survival-impairing disturbances.(79) (76) See Leasing SEIS 3-268. (77) Id. (78) Marine Mammals; Incidental Take During Specified Activities; North Slope, Alaska, 86 Fed. Reg. 43048-49, 43061. (79) 86 Fed. Reg. 43048-49 (lack of surveys or monitoring under prior ITRs to observe dens and potential disturbance, and impacts were not observable due to limited light and latent manifestation); see also id. at 43061 (lack of monitoring information to detect latent cub mortality).	"Industry reporting under the ITR/LOA process in those fields indicates that required mitigation has been effective reducing the frequency and severity of incidental and intentional take." However, it is acknowledged that undetected dens may be exposed to disturbance, and in such circumstances, any resulting adverse impacts to denning polar bears may escape detection and go unobserved and unreported (86 FR 42982, August 5, 2021).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoenhut	Karimah	Sierra Club	79130	32	Moreover, the assertion that the ITR/LOA process is effective at "keeping...take at negligible levels" ignores the reality of how FWS interprets the MMPA's "negligible impact" standard and FWS regulations implementing it, and conflates FWS's conclusion that the standard has been met with evidence showing that the impact of industry activities are in fact merely "negligible" for the purposes of assessing impacts under NEPA. FWS's MMPA regulations provide that FWS must determine that taking is not "reasonably likely" to have more than a negligible impact on the stock.(80) But FWS interprets "reasonably likely" to mean "more likely than not" and therefore ignores impacts unless they are more than 50% likely to occur in a given year.(81) Thus, FWS treats a lethal take that is 49% likely to occur as zero lethal take, and ignores it rather than evaluating whether its impacts on the stock are "negligible." Moreover, FWS only considers the likelihood of an impact (such as a lethal cub take from seismic) occurring in each isolated year of the five-year ITR, not the total likelihood of it occurring at least once during the span of the ITR.(82) As a result, even if it is nearly certain that a lethal cub take will occur at least once in the five-year span of the ITR, but the probability of such take in each isolated year is less than 50%, FWS asserts that zero take will occur, and ignores it rather than evaluating whether one lethal take occurring at any point in the five year period could be considered a "negligible" impact on the stock. (80) 50 C.F.R § 18.27(c) (defining "negligible impact" as "an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival"). (81) See 86 Fed. Reg. at 43047 ("The Service estimates a 46% probability of ... take that results in serious injury of [sic] mortality)...Considering annual probability rates is the most appropriate way to address the applicable regulatory standard, which is expressed in annual terms. And the fact the zero Level A harassment or lethal takes is the most likely result in any given year precludes a reasonable expectation that such take will, in fact, occur."); see also id. at 43031 (Table 8) (showing 45-46% annual probability of at least one "Serious Level A/Lethal take" of a cub in each year of ITR). Sierra Club is currently challenging FWS's interpretation and application of the "reasonably likely" standard in litigation before the 9th Circuit Court of Appeals. See Alaska Wildlife Alliance et al. v. U.S. Fish and Wildlife Service, No. 23-35299 (9th Cir. May 2, 2023), appealing Alaska Wildlife All. v. U.S. Fish & Wildlife Serv., No. 321CV00209SLGKFR, 2023 WL 2674760, at *1 (D. Alaska Mar. 29, 2023). (82) See 86 Fed. Reg. 43047; Attachment 3B - Trent McDonald, July 1, 2021 Focused review of FWS Analyses for a Proposed Incidental Take Regulation, North Slope, Alaska.	In response to various comments, portions of the Final SEIS discussing the ITR/LOA process and the potential influence of MMPA ITAs on impacts to polar bears have been revised for clarity and precision. The commenters' characterizations of past USFWS MMPA ITA processes and speculations about how USFWS would construe hypothetical model outputs are beyond the scope of the Final SEIS.
Schoenhut	Karimah	Sierra Club	79130	33	NEPA requires agencies to consider reasonably foreseeable impacts, which courts and CEQ have interpreted to mean effects that are sufficiently likely that a person of ordinary prudence would take them into account.(83) A person of ordinary prudence would consider a 49% likelihood of a lethal consequence to be sufficiently likely to take into account. Indeed, with regard to the 2021-2026 North Slope ITR, polar bear expert Dr. Steven Amstrup, as well as the Marine Mammal Commission, urged FWS to consider whether the impacts on the stock of injury and lethal take of cubs that was 46% likely to occur each year could possibly be meet the MMPA standards to be authorized take rather than ignoring those impacts on the grounds that they were not more likely than not to occur.(84) The failure of the SEIS to acknowledge FWS's actual practices in authorizing take of polar bears from oil and gas seismic exploration violates NEPA by unlawfully creating the impression that FWS's implementation of the negligible impact standard will eliminate reasonably foreseeable injurious and lethal take, when the reality is that in its MMPA determinations, FWS ignores injury and lethal consequences that are sufficiently likely to be accounted for under NEPA. (83) Sierra Club v. Marsh, 976 F.2d 763, 767 (1st Cir. 1992) (explaining use of "the terms 'likely' and 'foreseeable'... as applied to a type of environmental impact" under NEPA means that the impact is "sufficiently likely to occur [such] that a person of ordinary prudence would take it into account in reaching a decision."); 40 C.F.R. § 1508.1(aa) (defining "reasonably foreseeable" to mean sufficiently likely to occur such that a person of ordinary prudence would take it into account in reaching a decision."). (84) See Attachment 3C - June 30, 2021) Comments of Dr. Steven Amstrup on Proposed North Slope ITR, at paragraphs 48-50; Attachment 4D - June 30, 2021 Marine Mammal Commission Comments on Proposed 2021-2026 Incidental Take Regulations for North Slope, at 6, 10.	The SEIS analyzes reasonably foreseeable impacts to polar bears from potential activities associated with the proposed Program. The SEIS identifies the potential for lethal take of polar bears and discusses how lethal take would affect the SBS polar bear population. The commenter's characterizations of USFWS methodologies for reviewing MMPA ITA requests are beyond the scope of the Final SEIS.
Schoenhut	Karimah	Sierra Club	79130	34	The SEIS also repeatedly and generally suggests that future ITRs will develop new or additional mitigation measures to address the potential inadequacy of existing mitigation with regard to the conditions on the Coastal Plain, where denning density is higher than the North Slope areas where ITRs have applied to date, and where environmental conditions affecting the effectiveness of measures for den detection are different. The SEIS fails to provide any discussion whatsoever of what those measures might be, or whether they will actually exist at the point in time when seismic exploration activities on the areas proposed to be leased will occur. This is especially arbitrary and capricious considering that the SEIS foresees initial seismic exploration activities occurring within 2 years of lease issuance, and additional seismic exploration occurring within 3 years of lease issuance,(85) not some point far in the future. (85) Leasing SEIS at Appendix B, B-11, Table B-3. As a result of these errors, the SEIS fails to take the hard look at impacts that is required under NEPA and misleadingly and erroneously relies on future ITRs to suggest that impacts will be mitigated to no more than negligible levels.	In response to various comments, portions of the Final SEIS discussing the ITR/LOA process and the potential influence of MMPA ITAs on impacts to polar bears have been revised for clarity and precision. For examples of potential mitigation measures that could be included in any future MMPA incidental take authorizations, we direct the commenter to the provisions of the 2021-2026 Beaufort Sea ITR which are reflected in proposed lease stipulations applicable to Alternatives D and D2. Note that the mitigation measures included in MMPA ITAs often vary due to differences in the timing, location, nature, and scope of activities at issue, as well as request-specific practicability considerations. Available mitigation measures also evolve over time as additional information is gathered and technology improves. It is thus premature to assume which mitigation measures would be prescribed in any MMPA ITAs for specific Program-related activities in the future.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoenhut	Karimah	Sierra Club	79130	35	The SEIS Fails to Adequately Address the Impacts of GHG Emissions on Polar Bears In the Leasing SEIS, BLM makes the following assertion in the course of its cumulative impacts analysis for polar bears: "While it is challenging to project the incremental effects of burning the oil and gas that may be extracted from the program area, it is certain that doing so would contribute incremental impacts on climate change ... however, managing climate change is beyond the ability of the agencies responsible for managing oil and gas activities in the program area; thus, those agencies must focus instead on avoiding and otherwise mitigating other cumulative incremental effects on the polar bear population."(86) (86) Leasing SEIS at 3-267. First, to the extent that BLM believes it must focus on avoiding and mitigating non-GHG related impacts to polar bears, it is astounding and plainly irrational that none of the alternatives provide additional protection from seismic exploration to the high-density northwestern denning hotspot, as discussed above. Similarly, it is irrational that none of the alternatives exclude the core denning hotspots from leasing to ensure their protection from seismic surveys and ice roads, as discussed above.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Schoenhut	Karimah	Sierra Club	79130	37	Third, the SEIS fails to utilize readily available scientific information that would provide an assessment of the scale of the impacts on polar bears from the Program's emissions. Available scientific information is sufficient to quantify the area of Arctic sea ice loss associated with an additional increment of emissions.(87) Moreover, available scientific information is sufficient to quantify the incremental impact of the Program's emissions on cub recruitment for the polar bear subpopulations most imperiled by climate change, including the Southern Beaufort Sea population.(88) BLM should be assessing these incremental impacts not in a vacuum, but rather in the context of whether any substantial increment of additive emissions can be squared with ensuring the recovery of the species, and with the duties imposed under ESA section 7(a)(1) and by the purposes of the Refuge. (87) Notz, D., & Stroeve, J, (2016). Observed Arctic sea-ice loss directly follows anthropogenic CO2 emission. Science, 354(6313), 747-750 available at https://www.science.org/doi/full/10.1126/science.aag2345 (88) Amstrup, S. & Bitz,C. (2023) Unlock the Endangered Species Act to address GHG emissions. Science 381, 949-951 available at https://www.science.org/doi/10.1126/science.adh2280 .	Section 3.2.1. (Climate and Meteorology) of the SEIS states "The IPCC (2021) report that the Arctic is projected to be “practically ice-free” (i.e., less than 1 million square kilometers) in September (the month of minimum ice extent) at least once before 2050, and this is projected to be the norm for late summer by the end of the 21st century under high GHG emission scenarios (IPCC 2021).” Sea ice is critical habitat for polar bears and increased GHG emissions will decrease sea ice habitat. The text in section 3.4.5 (Cumulative effects) has been edited to include discussion of how the impacts of GHG (GHG) emissions from program-related activities would combine with global GHG emissions and incrementally contribute to the ongoing and projected climate change trends described above. Additionally, the framework described in a recent study by Amstrup and Bitz (2023) was applied to assess the potential extent of this contribution and the possible impacts on polar bears.
Not Provided	Emily	-	79183	2	Moreover, I have deep concern for the inadequate protection of on-shore denning habitat for polar bears as outlined in the SEIS. This inconsistency in safeguarding polar bear denning habitat leaves some areas vulnerable, particularly for denning sows and cubs. I implore the Administration to fortify protections in both the Canning River delta and the Camden bay area to ensure the well-being of these vital ecosystems.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Allen	Mark	Government of Canada	79200	37	Polar bear maternity denning represents the most vulnerable life history stage for polar bears, The greatest risk for demographic impacts to the South Beaufort Sea (SBS) subpopulation will result from development activities during the denning period. Among all development activities, 3D seismic poses the greatest risk to the SBS subpopulation. Canada notes the increased clarity in Required Operating Practice (ROP) 10 for polar bears under Alternative D, including monitoring requirements, along with constructive additions to other ROPs and Lease Stipulations. One of the key mitigation strategies for detecting and avoiding active maternal den sites during seismic surveys is the use of aerial Forward Looking Infrared (FLIR) surveys; also referred to as aerial infrared surveys (AIR). However, the effectiveness of this mitigation strategy is highly dependent on the number of surveys and environmental conditions during surveys. Section J-65 states that "AIR surveys will be conducted under clear, calm conditions during darkness or civil twilight and not during daylight hours. Flight crews will record and report environmental parameters including air temperature, dew point, wind speed and direction, cloud ceiling, and percent humidity, and a flight log will be provided to the Service within 48 hours of the flight." Given the previously identified impacts of environmental conditions on successful den detection, Canada requests that minimum suitable conditions be identified (wind conditions, temperature, dew point spread, precipitation, and presence of ground drifting snow) to maximize the effectiveness of surveys. Optimal conditions have been previously identified by Amstrup et al. (2004) but are not specified in the SEIS. Canada seeks clarification if optimal conditions cannot be achieved and/or if the prescribed three surveys cannot be conducted, how is this likely to influence the level of incidental take for a potential program?	Lessees and operators would strive to conduct FLIR operations during the optimal conditions referenced in Amstrup et al. (2004). FLIR is one technique that can been used to detect maternal dens.
Allen	Mark	Government of Canada	79200	38	Is there a requirement for FLIR/AIR surveys to be conducted by helicopter similar to Amstrup et al. (2004)? Given that simulations from Wilson and Durner 2020 are based on den detections from rotary aircraft that allow for slower passes over suitable denning habitat and changing angles of observation, it is assumed that rotary aircraft will be required during denning surveys. Canada requests that this point be clarified and noted in the Final SEIS.	There is not currently a requirement that FLIR surveys be conducted by rotary aircraft. Those requirements could be imposed in response to specific requests for Incidental Harassment Authorization. Until better methods are developed, fixed-wing FLIR surveys represents the safest available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Allen	Mark	Government of Canada	79200	39	A section on page J-65 says "A scientist with experience in the in-air interpretation of AIR imagery will be on board the survey aircraft to analyze the AIR data in real-time. The data (infrared video) will be made available for viewing by the Service immediately upon return of the survey aircraft to the base of operations." Given the importance of detecting dens during surveys, Canada would like to seek clarification on how logged survey data will be reviewed. In particular, on longer surveys operator fatigue could further limit den detections warranting subsequent detailed review of video footage. Furthermore, Canada requests clarification on the difference between putative, potential, and known polar bear dens (p. J-65).	The process of logging survey data would be reviewed during the public review process of a specific project. Putative, potential, and known polar bear dens have been added to the glossary.
Allen	Mark	Government of Canada	79200	40	In a section on page 3-249, it states "By applying the detectability rates described above to the average of 14 maternal dens estimated to occur annually in the program area (see Appendix J.4.2), 6 to 11 occupied dens may go undetected during seismic exploration of the entire program area if additional den mitigations are not applied." Appendix J.5.2 derives the following estimate "The median estimated number of polar bear dens on land annually in the 1002 region was 14 dens with a posterior credible interval [5,30]." Canada suggests using a precautionary principle estimate of the upper limits of disturbance of 30 dens based on the posterior credible intervals.	The significance interval supports the use of an average of 14 dens. The upper limit of 30 is not an appropriate credible interval. While it is true that the upper limit could happen, it is on the very tail end of what is possible, similar to the value of 5 on the lower end. We believe 14 is the appropriate value to use because it represents the most reasonably foreseeable outcome based on published research.
Holleman	Marybeth	-	79514	2	As well, the SEIS does not provide enough protection for on-shore denning habitat for polar bears: it's inconsistent in protecting polar bear denning habitat. I urge you to create stronger protections for both the Canning River delta and the Camden bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Watson	Erica	-	79527	2	The SEIS does not sufficiently or consistently protect denning polar bears. The final document should provide stronger protections for the Canning River and Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Kutschbach Brohl	Lisa	-	79621	4	There is not enough protection for on-shore denning habitat for polar bears: the SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Hanson	Art	-	79828	4	There is Not enough protection for on-shore denning habitat for polar bears: the SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
S	M	-	79881	1	Some specific provisions of the Draft SEIS that should be revised include: • Increased protections for onshore denning habitat of polar bears are needed to correct inconsistencies that safeguard some areas but leave other habitats vulnerable, particularly the Canning River delta and the Camden Bay region.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
K	PJ	-	79882	1	Increased protections for onshore denning habitat of polar bears are needed to correct inconsistencies that safeguard some areas but leave other habitats vulnerable, particularly the Canning River delta and the Camden Bay region.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Westmoreland	Henry	-	79942	2	There is not enough protection for on-shore denning habitat for polar bears, so important with warming arctic temperatures and loss of ice cap: the SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River delta and the Camden bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	19	BLM's 2019 Final EIS failed to provide the requisite hard look required by NEPA at oil and gas leasing and foreseeable impacts of development to polar bears and polar bear habitat in the Coastal Plain of the Arctic Refuge. Impacts to polar bears from oil and gas activities, as well as to polar bear habitats will be very significant. While the agencies' Draft SEIS is an improvement over the 2019 Final EIS, the inclusion of the best available data remains insufficient, and as such, the overall analysis of impacts to polar bears and their habitat is inadequate. The Final SEIS must obtain and consider needed baseline information, fully analyze impacts to bears, and ultimately consider and adopt a program that protects SBS polar bears. The agencies must revise and update data and analysis in the Final SEIS to fully analyze the impacts to polar bears on the Coastal Plain from all foreseeable oil and gas activities. As an initial matter, the agencies have failed to incorporate a number of recent studies on polar bears and their habitats and impacts from oil and gas activities. At a minimum, the agencies must update its polar bear analysis to include the following best available scientific data, as discussed in more detail below: -Tom S. Smith, Amstrup, S.C., Kirschhoffer, B.J., and York, G., Efficacy of aerial forward-looking infrared surveys for detecting polar bear maternal dens. February 27, 2020. https://doi.org/10.1371/journal.pone.0222744 . -Durner, G.M., Amstrup, S.C., Atwood, T.C., Douglas, D.C., Fischbach, A.S., Olson, J.W., Rode, K.D., and Wilson, R.R., 2020, Catalogue of polar bear (Ursus maritimus) maternal den locations in the Beaufort and Chukchi Seas and nearby areas, 1910-2018: U.S. Geological Survey Data Series 1121, https://doi.org/10.3133/ds1121 . [Supersedes USGS Data Series 568.] -Woodruff, S.P., Andersen, E.M., Wilson, R.R., Mangipane, L.S., Miller, S.B., Klein, K.J., Lemons, P.R. (2022) Classifying the effects of human disturbance on denning polar bears. Endang Species Res 49:43-56. https://doi.org/10.3354/esr01203 - Woodruff, S.P., Blank, J.J., Wisdom, S.S., Wilson, R.R., Durner, G.M., Atwood, T.C., Perham, C.J., Pohl, C.H.M. (2022) Evaluating the efficacy of aerial infrared surveys to detect artificial polar bear dens. Wildlife Society Bulletin, 10.1002/wsb.1324, 46, 3. -USGS Alaska Science Center, Polar Bear Research Program., 2018, Denning Phenology, Den Substrate, and Reproductive Success of Female Polar Bears (Ursus maritimus) in the southern Beaufort Sea 1986-2013 and the Chukchi Sea 1987-1994 (ver. 1.1, July 2021): U.S. Geological Survey data release, https://doi.org/10.5066/F7DF6PC9 . -Pedersen, N. J., T. J. Brinkman, R. T. Shideler, and C. J. Perham. 2020. Effects of environmental conditions on the use of forward-looking infrared for bear den detection in the Alaska Arctic. Conservation Science and Practice 2:e215. -Rode, K. D., et al. (2021). Ifupiaq knowledge of polar bears (Ursus maritimus) in the Southern Beaufort Sea, Alaska. Arctic, 74:239-257. -Pagano, A. M., et al. (2021). Effects of sea ice decline and summer land use on polar bear home range size in the Beaufort Sea. Ecosphere, 12:e03768.	The SEIS does include the following suggested citations: Smith et al. 2020, Woodruff et al. 2022a, Woodruff et al. 2022b. Durner et al. 2020 was cited in the text on Draft SEIS in section 3.3.5, Section Marine Mammals, but was not in the literature cited. The SEIS also includes reference to Pedersen et al. 2020 (see paragraphs about FLIR), Rode et al. 2021 (TEK polar bears and climate change), and Pagano et al. 2021 (impacts of sea ice decline on polar bears).
Freitas	Benjamin	World Wildlife Fund	79957	20	Today the Coastal Plain of the Arctic Refuge has one of the highest densities of suitable denning habitat for pregnant female polar bears in North America.(36) About one-third of all breeding female polar bears in the Southern Beaufort Sea subpopulation are now using the Coastal Plain for denning.(37) Here, they give birth to and raise newborn cubs in the necessary shelter and safety of dens, before emerging in March-April.(38) The Arctic Refuge Coastal Plain is therefore an important nursery area for mothers and newborn cubs and for the entire Southern Beaufort Sea subpopulation. Indeed, as shown in Figure 1 above, the majority of the Coastal Plain (approximately 77 percent) is designated as critical habitat under the ESA for the species. (36) Atwood, T.C., Bromaghin, J.F., Patil, V.P., Durner, G.M., Douglas, D.C., and Simac, K.S., 2020. Analyses on subpopulation abundance and annual number of maternal dens for the U.S. Fish and Wildlife Service on polar bears (Ursus maritimus) in the southern Beaufort Sea, Alaska: U.S. Geological Survey Open-File Report 2020-1087, 16 p., https://doi.org/10.3133/ofr20201087 . See also, Durner, G.M., Amstrup, S.C., Ambrosius, K.J (2006) Polar bear maternal den habitat in the Arctic National Wildlife Refuge, Alaska. Arctic, 31-36. (37) Amstrup, S. C., G. York, T. L. McDonald, R. Nielson, and K. Simac (2004) Detecting denning polar bears with forward looking infra-red (FLIR) imagery. BioScience 54, 337-344. See also, Atwood, T.C., Bromaghin, J.F., Patil, V.P., Durner, G.M., Douglas, D.C., and Simac, K.S., 2020. Analyses on subpopulation abundance and annual number of maternal dens for the U.S. Fish and Wildlife Service on polar bears (Ursus maritimus) in the southern Beaufort Sea, Alaska: U.S. Geological Survey Open-File Report 2020-1087, 16 p., https://doi.org/10.3133/ofr20201087 . (38) Amstrup, S. C., and C. Gardner (1994) Polar bear maternity denning in the Beaufort Sea. Journal of Wildlife Management 58, 1-10.	The SEIS states the program area is within the core activity area of the SBS [polar bear population] and that the program area is known to be an important area for maternal denning and will likely remain important as the percentage of bears denning on land increases with continuing sea ice loss. The suggested citations of Durner et al. 2004a, Amstrup and Gardner 1994, and Atwood et al. 2020 are cited in the SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	23	It is important that the agencies use the best available science and data and site-specific analysis in order to take a hard look at impacts to polar bears and polar bear habitat. It cannot be overlooked that there is substantial overlap in the location of the lease program area with important active maternal polar bear dens and critical denning habitat. The oil and gas leasing program and subsequent exploration and development therefore presents a potential population-level impact to an already stressed polar bear subpopulation. Unless all polar bear maternal dens are detected and all adverse impacts avoided, activities resulting from oil and gas leasing on the Coastal Plain will have a negative impact on female polar bears while they are in maternal dens giving birth to and raising their dependent cubs. The agencies must look at all the direct, indirect, cumulative, and reasonably foreseeable future impacts from oil and gas activities on this polar bear habitat from all oil and gas activities resulting from any lease sale and awarded leases. The agencies' Draft SEIS analysis of impacts to polar bears is inadequate, not based on the best available science and information, fails to account for site-specific impacts and potential mitigation measures, and does not consider cumulative impacts or reasonably foreseeable future development in the project area. Given multiple stressors the SBS polar bears are now experiencing (e.g., climate change and associated habitat loss, and oil and gas exploration and extraction to the west of the Refuge), plus the high likelihood of future development associated with oil extraction in the project area and beyond, these broader considerations are essential. Given the likelihood of significant impacts to polar bears and their habitats, the agencies must revise this analysis in the Final SEIS. Specifically, WWF outlines here a number of issues for the agencies to analyze in a Final SEIS section devoted to impacts to polar bears.	The Coastal Plain Draft SEIS uses the best available information to evaluate the potential impacts from a Coastal Plain leasing program, including new literature identified by commenters on the Draft SEIS, which has been incorporated for the Final SEIS, where applicable. Draft SEIS Section 3.3.5, Marine Mammals - Cumulative Impacts, discusses cumulative impacts to marine mammals, including polar bears. Draft SEIS Appendix B, Updated Reasonably Foreseeable Development Scenario for Oil and Gas Resources in the Public Law 115-97 Coastal Plain, Alaska, describes anticipated future development.
Freitas	Benjamin	World Wildlife Fund	79957	24	Denning. The agencies' Draft SEIS is missing information vital for a meaningful analysis of impacts on polar bears, including habitat use, feeding, denning, and population distribution on the Coastal Plain. The Draft SEIS, for example, fails to acknowledge the complete overlap in the timing and location of the proposed seismic survey with one-third of active maternal polar bear dens from the Southern Beaufort Sea subpopulation, despite the potential population-level impact it may have on an already stressed subpopulation. The Draft SEIS states that "the initiation of intensive human activities during the period when females seek den sites (October- November) would give them the opportunity to choose sites in less-disturbed locations (Amstrup 1993)."(52) But this statement is not supported by data or analysis showing that selection of less-disturbed sites will be successful, nor does this address concerns that if first choice den sites are unavailable due to noise and other disturbance, secondary den sites may be in less suitable habitat. The Final SEIS must provide identification of alternative site availability to polar bears for denning and explain how such areas would be protected from disturbance. In addition, the Final SEIS must assess the potential resulting impacts on mothers and their offspring from such displacement. The Final SEIS also must analyze how changing trends in snow depth, rainfall, wind drifting, and timing of snowfall in the Arctic Refuge could affect denning disturbance from seismic testing. Disturbance may lead to females and cubs abandoning dens before the cubs are ready to leave. Very small cubs cannot survive outside the den. The amount of time spent before mothers and cubs first emerge has been correlated with cub survival, and shorter denning periods correlates with higher cub mortality. BLM and USFWS must confront these critical issues in its Final SEIS by filling in the substantive gaps in missing information required for meaningful analysis, and explaining to the public how it will address them. (52) Draft SEIS, at p. 3-248.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot. A more detailed analysis of the effects of disturbance on denning bears will be conducted for any specific actions proposed (e.g., seismic surveys, exploration activity, construction) when specific project parameters and are known. The SEIS contains ample analysis of the reasonably foreseeable impacts of seismic surveys and how impacts to denning polar bears could affect the SBS stock.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	25	Seismic. The agencies have attempted to remedy the 2019 Final EIS's failure to consider any 3-dimensional (3D) seismic surveying, a highly significant activity required as part of the leasing program that will affect important resources and uses of the Coastal Plain, especially polar bears. As an initial matter, unlike the 2019 Final EIS, the Draft SEIS assumes that areas closed to leasing will also be closed to seismic exploration.(53) However, despite this assumption, the agencies acknowledge that under Alternative D, 8,900 acres of maternal denning habitat would be open to seismic exploration.(54) The Draft SEIS now rightly acknowledges that the impacts from 3D seismic exploration "are of greatest concern" to polar bears and that such exploration "would occur across much or all of the program area."(55) (53) Draft SEIS, at p. 2-2 ("the joint lead agencies determined that seismic exploration activities would be limited to only those areas available for lease sale under each action alternative..."). WWF notes that, while the agencies' interpretation is useful, it must be integrated into the lease stipulations. Currently, there is no lease stipulation in the Draft SEIS to enforce the agencies' interpretation. Moreover, it is unclear whether the agencies' interpretation applies to pre-lease seismic exploration, which also should be prohibited (see infra section II.A). (54) Draft SEIS, at p. 3-265. (55) Draft SEIS, at p. 3-255. Given the great threat to polar bears from 3D seismic acknowledged in the Draft SEIS, the agencies have an obligation to closely analyze and disclose the potential impacts to polar bears and the overall potential impacts on the SBS population. The 2019 Final EIS ignored expert studies provided to BLM by Dr. Steven Amstrup explaining the limitations of Forward Looking Infra-Red (FLIR) detection technology and stating that 50 percent of the occupied maternal dens will likely go undetected if that technology is employed in early-mid winter on the Coastal Plain. BLM also ignored industry data on FLIR technology, which appears to be more recent. Furthermore, the 2019 Final EIS ignores data from Dr. Amstrup assigning a 25 percent chance that survey equipment will run directly over at least one maternal den, killing the mother and cubs inside.(56) By not incorporating these latest studies on the likely impacts of 3D seismic surveys and the failure rates of FLIR detection technology, the agencies have failed to take a hard look at the impacts of seismic activities on polar bears. (56) See Letter from Dr. Steven Amstrup to Bureau of Land Management (Aug. 15, 2018).	Lease stipulation 5 in Alternative D has been revised to increase protections for polar bear denning habitat. The stipulation prohibits leasing (and seismic surveys) from the coast to 1 mile inland along the coastline along the Canning/Stains rivers and in the Camden Bay area. This stipulation now protects 20,400 acres of maternal denning habitat. The SEIS incorporates and cites the most recent studies on the effectiveness of FLIR (Robinson et al. 2014, Smith et al. 2020, Woodruff et al. 2022). Until better methods are developed, FLIR represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. The Draft SEIS (page 3-249) states that FLIR does not provide perfect detection. The best available data indicate a range of detectability from 24 percent to 54 percent, depending on the experience of the crew, the number of surveys flown, the prevailing weather conditions at the time of the survey(s), and seasonal timing and snow depth (Wilson and Durner 2020; Smith et al. 2020; Woodruff et al. 2022). Subsequent to Dr. Amstrup's letter from 2018, the USFWS published a study in 2020 that specifically addressed how many dens on the Refuge's Coastal Plain might be disturbed by seismic surveys (Wilson and Durner 2020). They used data from aerial FLIR surveys with additional restrictions to generate an imputed dataset that was then used in a Bayesian framework to estimate the probability that a den was detected during a single survey, given that it had a den wall <100 cm thick. They also used environmental conditions in the Refuge to incorporate the probability that a den had walls too thick to allow detection by FLIR. Robinson, R., T. S. Smith, R. T. Larsen, and B. Kirschhoffer. 2014. Factors influencing the efficacy of forward-looking infrared in polar bear den detection. <i>BioScience</i> 64:735–742. Smith, T. S., S. C. Amstrup, J. Kirschhoffer, G. York, and W. C. Program. 2020. Efficacy of aerial forward-looking infrared surveys for detecting polar bear maternal dens. <i>PLoS ONE</i> 15:e0222744. Wilson, R. R., and G. M. Durner. 2020. Seismic survey design and effects on maternal polar bear dens. <i>Journal of Wildlife Management</i> 84:201–212. Woodruff, S. P., J. J. Blank, S. S. Wisdom, R. R. Wilson, G. M. Durner, T. C. Atwood, C. J. Perham, and C. H. M. Pohl. 2022. Evaluating the efficacy of aerial infrared surveys to detect artificial polar bear dens. <i>Wildlife Society Bulletin</i> 46:1–20.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	26	Indeed, site-specific analysis and best available science and data are necessary for the agencies' development of site-specific mitigation measures for oil and gas activities that might help to avoid impacts to polar bears and polar bear habitats. For the undetected maternal dens, there is a 100 percent chance-therefore a certainty-of disturbance from vibrations, given the spatial overlap of the proposed oil and gas activities with high quality denning habitat.(57) Disturbance may lead to females and cubs abandoning dens before the cubs are ready to leave. Disturbance of maternal dens from oil and gas activities that results in potentially lethal outcomes for adult females and cub survival could have population-level impacts on the SBS subpopulation.(58) Such an outcome would be in direct conflict with mandated actions in the US Fish and Wildlife Service Polar Bear Conservation Management Plan, which states that protecting maternal denning habitat is critical to the recovery of the SBS subpopulation.(59) (57) Atwood, T.C., Bromaghin, J.F., Patil, V.P., Durner, G.M., Douglas, D.C., and Simac, K.S., 2020, Analyses on subpopulation abundance and annual number of maternal dens for the U.S. Fish and Wildlife Service on polar bears (Ursus maritimus) in the southern Beaufort Sea, Alaska: U.S. Geological Survey Open-File Report 2020-1087, 16 p., https://doi.org/10.3133/ofr20201087 . See also, Durner, G. M., A. S. Fischbach, S. C. Amstrup, and D. C. Douglas. 2010.Catalogue of polar bear (Ursus maritimus) maternal den locations in the Beaufort Sea and neighboring regions, Alaska, 1910-2010: U.S. Geological Survey Data Series 568. U.S. Geological Survey, Reston, Virginia, USA, and Amstrup, S. C., and C. Gardner (1994) Polar bear maternity denning in the Beaufort Sea. Journal of Wildlife Management 58, 1-10. (58) Amstrup, S.C. (2018) Review of the SAE proposal for Seismic Exploration on the Coastal Plain. Polar Bears International. (59) U.S. Fish and Wildlife (2016) Polar Bear (Ursus maritimus) Conservation Management Plan, Final. U.S. Fish and Wildlife, Region 7, Anchorage, Alaska. 104 pp.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Freitas	Benjamin	World Wildlife Fund	79957	27	Seismic impacts on leases awarded through any Coastal Plain lease sales are reasonably foreseeable impacts that must be fully analyzed under NEPA. Moreover, the agencies have access to specific information about seismic impacts and industry's seismic plans through by the applications for seismic activities submitted to BLM in 2018 and 2020. The agencies must comprehensively address seismic impacts to polar bears in the Final SEIS, including by integrating the latest information on industry's likely seismic plan of operations and the latest science on polar bear populations in the Coastal Plain.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot. A more detailed analysis of the effects of disturbance on denning bears will be conducted for any specific actions proposed (e.g., seismic surveys, exploration activity, construction) when specific project parameters and are known. The SEIS contains ample analysis of the reasonably foreseeable impacts of seismic surveys and how impacts to denning polar bears could affect the SBS stock.
Freitas	Benjamin	World Wildlife Fund	79957	29	Climate Change. Climate change is altering the planet in drastic ways. The Arctic is warming at up to four times the rate of the rest of the globe. BLM's 2019 Final EIS failed to examine the direct, indirect and cumulative impacts of the proposed oil and gas development on polar bears against this backdrop of continued climate change, which, according to the best available science, is already causing habitat loss, conflicts with humans, and energetic costs, including nutritional stress and strenuous long-distance swimming for polar bears. Although the 2019 Final EIS noted some of the relevant science, it omitted some of the most important information on the impacts of climate change on the viability of the SBS polar bear population. This is in direct conflict with the first high-priority action item necessary to achieve the fundamental goals of the US Fish and Wildlife Service Polar Bear Conservation Management Plan: "Limit global atmospheric levels of greenhouse gases to levels appropriate for supporting polar bear recovery and conservation, primarily by reducing greenhouse gas emissions."(60) (60) U.S. Fish and Wildlife (2016) Polar Bear (Ursus maritimus) Conservation Management Plan, Final. U.S. Fish and Wildlife, Region 7, Anchorage, Alaska. 104 pp. The Draft SEIS maintains these critical failures from the 2019 Final EIS and must be improved in a Final SEIS. Specifically, the Draft SEIS contains no discussion or analysis of how the additive greenhouse gas emissions from Coastal Plain leasing and development will affect polar bears and polar bear habitat. Although the draft SEIS recognizes that sea ice loss and habitat degradation caused by climate change is the primary threat to polar bears,(61) it is silent as to the Leasing Program's emissions and climate effects. (61) Draft SEIS, at p. 3-267.	The effects of climate change on polar bears are specifically addressed in section 3.3.5 of the SEIS. Recent studies have linked emissions and declines in sea ice to demographic outcomes for polar bears (Molnár et al. 2020, Amstrup and Bitz 2023). The text in section 3.3.5 (Cumulative effects) has been edited to include discussion of how the impacts of GHG (GHG) emissions from program-related activities would combine with global GHG emissions and incrementally contribute to the ongoing and projected climate change trends described above. Additionally, the framework described in a recent study by Amstrup and Bitz (2023) was applied to assess the potential extent of this contribution and the possible impacts on polar bears. Amstrup, S. C., and C. M. Bitz. 2023. Unlock the Endangered Species Act to address GHG emissions. Science 381:949–951. Molnár, P. K., C. M. Bitz, M. M. Holland, J. E. Kay, S. R. Penk, and S. C. Amstrup. 2020. Fasting season length sets temporal limits for global polar bear persistence. Nature Climate Change 10:732–738.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	30	The Final SEIS must acknowledge that ice-free days are increasing and will continue to increase unless CO2 emissions are reduced and analyze the impacts to polar bears from increasing greenhouse gas emissions from Coastal Plain oil and gas leases on sea ice. The Final SEIS also must disclose the likely impacts to the SBS subpopulation from the increased ice-free days and increased distances that polar bears must traverse from sea ice to land. Finally, the Draft SEIS ignores the cumulative impacts of climate change and oil and gas development on Arctic ringed seals, which serve as polar bears' primary prey. In the Final SEIS, BLM and USFWS must include adequate baseline information on the SBS subpopulation of polar bears and Arctic ringed seals as well as best available research on their potential population declines due to climate change. At a time when climate change is transforming the Arctic landscape, the Final SEIS must also include a full accounting of the total greenhouse gas effects that would arise from the industrial activities proposed on the Coastal Plain.	The declining trends in sea ice and its effect on polar bears and ringed seals is specifically addressed in section 3.3.5 of the SEIS. The text (Cumulative effects) has been edited to include discussion of how the impacts of GHG (GHG) emissions from program-related activities would combine with global GHG emissions and incrementally contribute to the ongoing and projected climate change trends described above. Additionally the framework described in a recent study by Amstrup and Bitz (2023) was applied to assess the potential extent of this contribution and the possible impacts on polar bears. Amstrup, S. C., and C. M. Bitz. 2023. Unlock the Endangered Species Act to address GHG emissions. Science 381:949–951. Molnár, P. K., C. M. Bitz, M. M. Holland, J. E. Kay, S. R. Penk, and S. C. Amstrup. 2020. Fasting season length sets temporal limits for global polar bear persistence. Nature Climate Change 10:732–738.
Freitas	Benjamin	World Wildlife Fund	79957	31	Habitat Impacts. The Draft SEIS fails to analyze the impacts of habitat fragmentation from industrial activities on the SBS polar bear subpopulation. In Appendix B, the Draft SEIS describes the expansive industrialization of the Coastal Plain as a Reasonably Foreseeable Development scenario.(62) This scenario assumes central processing facilities (CPF), each of which would include oil pipeline connections to the Trans-Alaska Pipeline, water and electricity pipelines totaling hundreds of miles, barge landings, staging pads, seawater treatment plants located along the coastline, a generator, airstrip, storage tanks, a communications center, waste treatment units, and maintenance shop, as well as living quarters and offices. Hundreds of miles of gravel roads, and undisclosed miles of ice roads, would be constructed, and gravel mines would unearth hundreds of additional acres. (62) Draft SEIS, vol. 3, Appx B. The Draft SEIS fails to take a hard look at the enormous imposition of this industrial infrastructure and these associated activities on critical habitat for the Southern Beaufort Sea polar bears. In Appendix B, BLM and USFWS fail to assess quantitatively or qualitatively how much polar bear habitat would be lost under the Reasonably Foreseeable Development scenario, including areas for denning and travel to and from the coast. The Final SEIS must assess the impacts of habitat fragmentation from industrial expansion on the movements, behaviors, health, and distribution of SBS polar bears, including impacts to SBS polar bears from potential increases in human-bear conflict resulting from the increased likelihood of human-bear interaction under such scenarios.	Appendix C (Updated RFD Scenario for Oil and Gas) describes what hypothetical development in the program area may look like, including differentiators among the alternatives. Appendix C does not include environmental impact analysis. Impacts to marine mammals, including polar bears, are described in Draft SEIS Section 3.3.5, Marine Mammals - Direct and Indirect Impacts. As this is a SEIS, no project proposals have been made to BLM that would allow site-specific analysis, thus limiting the ability to quantify potential habitat loss. As noted in the Alternative B analysis : "The types of future program-related activities and facilities would be similar among the action alternatives, but the location and extent of infrastructure and associated activity would differ among alternatives, in accordance with lease stipulations and ROPS..." The SEIS acknowledges that aerial den detection is not perfect and that some denning polar bears may be impacted. The SEIS details the multi-layered approach to minimizing impacts on maternal dens which begins with protections that prohibit leasing or restrict activities in areas of highest denning density (revised Lease Stipulation 5). BLM would consider strategies to avoid or minimize impacts to denning habitat when reviewing proposals for roads and pipelines. Also, preferred denning habitat often corresponds to steep banks that road and pipeline planners typically attempt to avoid. the Required Operating Procedures in ROP 10 offer additional protection, beginning with surveys to locate polar bear dens. These surveys may include replicates and multiple methods to maximize detection probabilities. ROP 10 also requires active monitoring identified in the site-specific plan that would accompany approval. Although polar bears do den in high densities in the Coastal Plain lease area compared to elsewhere across the North Slope, den densities are still very low compared to the landscape available.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Moriarty	Kara	Alaska Oil & Gas Association	79980	37	The Final EIS presents a robust description of polar bear distribution and potential impacts, but at most, we recommend only minimal corrections and updates to ensure any Final SEIS presents an accurate depiction of potential polar bear denning and denning impacts, and properly characterizes the potential for and minimal effects from human-bear interactions. These types of changes can be made as part of NEPA review for on-the-ground activities. Overstatements or inaccurate and unsupported statements should not be considered. For example, the Final EIS states without supporting citation that there are "[a] few records" of female polar bears denning successfully near oilfield infrastructure since the beginning of development along the central Beaufort Sea coast.(89) However, as we stated in our Draft EIS Comments, industry monitoring reports required under Marine Mammal Protection Act letters of authorization indicate that between five and 10 instances of the successful emergence of a sow and cub(s) have been recorded on or around oilfield infrastructure between 2008 and 2018.(90) (89) Draft SEIS at 3-233. (90) See, e.g., Letter of Authorization reports for BPXA (e.g., Badami Ice Road 2008-09, Sag River/Heald Point 2009, L5 drill site 2018, and Put 23 Mine site 2014-15), ENT (e.g., Spy Island - Nikaitchuq 2011), and Hilcorp (e.g., Endicott Road 2017); see also FWS, Mama Polar Bear and Cub Make it through Denning Season Thanks to Collaborative Work, June 2017. Available at: https://fws.maps.arcgis.com/apps/MapJournal/index.html?appid=6b07fba073c348d4adf21c371bec0805 (describing successful emergence of mother and cub next to oil and gas facility). Additional data showing that maternal denning occurs near oilfield infrastructure and activity in greater numbers than is reflected in the Draft SEIS should be considered especially in evaluations of any additional conditions. We believe that implementation of established avoidance and mitigation measures means that construction of program infrastructure is not likely to significantly impact maternal denning. The Final SEIS should also eliminate unsupported assertions about potential impacts from oil and natural gas activities to maternal denning. It should also reflect the oil and natural gas industry's history of implementing procedures, training, mitigation measures, and best practices for human-polar bear interactions that minimize the potential for polar bear disturbance or harassment.	The implementation of ITRs in existing oilfields is described in section 3.4.3. Corroboration of "between 5 and 10 instances" of successful dens on or around infrastructure is not readily available.
Wood	Catherine	-	80054	1	Currently, there is also not enough protection for polar bear denning habitat, especially for on-shore denning sows and cubs. Specifically, stronger protections are needed for both the Canning Rivr delta and the Camden bay area. Polar bears live only in Alaska and other arctic regions and, already listed as a vulnerable Special Status Species, are certainly deserving of our ongoing protection.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot. A more detailed analysis of the effects of disturbance on denning bears will be conducted for any specific actions proposed (e.g., seismic surveys, exploration activity, construction) when specific project parameters and are known. The SEIS contains ample analysis of the reasonably foreseeable impacts of seismic surveys and how impacts to denning polar bears could affect the SBS stock.
Kring	Juli	-	80113	1	There is not enough protection for onshore denning habitat for polar bears. The Draft SEIS does not sufficiently protect polar bear denning habitat.. Stronger protections are needed for both the Canning River delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot. A more detailed analysis of the effects of disturbance on denning bears will be conducted for any specific actions proposed (e.g., seismic surveys, exploration activity, construction) when specific project parameters and are known. The SEIS contains ample analysis of the reasonably foreseeable impacts of seismic surveys and how impacts to denning polar bears could affect the SBS stock.
Rojas	Melissa	Sierra Club	80123	4	Better protect vitally important polar bear denning areas in the northwestern part of the Refuge. Even under the conservation alternative, those areas inexplicably remain vulnerable to seismic exploration, which poses severe danger to polar bear cubs. The proposed conservation alternative fails to provide adequate protection to this incredibly imperiled population.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Brisson	Brook	Trustees for Alaska	80131	314	Despite the importance of the Coastal Plain to SBS polar bears, the draft SEIS fails to properly describe the environmental baseline for the population and fails to adequately analyze meaningful alternatives and effective mitigation measures to avoid injurious or lethal impacts, particularly from seismic exploration. The draft SEIS further does not adequately analyze potential direct, indirect, and cumulative impacts of oil and gas oil and gas leasing on polar bears using the Coastal Plain.	The current distribution, population status and trends, movements, life history, habitat use, and critical habitat needs of polar bears are described in section 3.3.5 Marine Mammals. An analysis of the effects of 4 alternatives are described under Direct and Indirect impacts. Effects considered include habitat loss and alteration, disturbance and displacement, injury and mortality, and attraction to human activity and facilities. An essential component of the analysis is an evaluation of mitigation measures.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	316	BLM and FWS fail to include adequate baseline information on the SBS population of polar bears. Modeling predicts "significant declines in polar bear populations within three generations"(881) The draft SEIS fails to mention that there is more than a 70% chance of a global polar bear population decline of 30% or more within three generations.(882) This recent study refers to significant declines in the global population, not just the SBS stock, which has already declined by approximately half since the 1980s.(883) BLM and FWS acknowledges the most updated population analysis estimated the Alaska SBS abundance to be 573 bears in 2015, though the estimate of 900 bears is currently used for management purposes.(884) But BLM and FWS should clarify that the SBS population has already experienced an alarming decline and is in a more precarious condition than most other polar bear populations. The agencies should also incorporate the findings of FWS's latest species status assessment and five-year listing review. In particular, the species status assessment notes that abundance for the Polar Basin Divergent Ecoregion (including the U.S. Chukchi and Southern Beaufort subpopulations) are projected to be "greatly decreased" for all time periods considered - including the short term (2020- 2030).(885) (881) DSEIS at 3-227 (citing Regehr et. al. (2016)). (882) Regehr et. al. (2016). (883) Steven C. Amstrup, PhD Chief Scientist, Polar Bears International, Letter re: the DEIS describing proposed development of the Arctic National Wildlife Refuge Coastal Plain (Mar. 8, 2019) [hereinafter March 2019 Amstrup Letter] at 8 (citing Bromaghin et al. 2016). (884) DSEIS at 3-228. (885) FWS, Species Status Assessment for the Polar Bear (Ursus maritimus) (Aug. 18, 2023); see also FWS, Polar Bear Five Year Review (Aug. 2023).	The Draft SEIS relies extensively on the most recent species status assessment and Regehr et al. 2016. Stated under the section on Species Status "Subsequent modeling analyses predicted that declining sea ice cover risks significant declines in polar bear populations within three generations (35–41 years; Regehr et al. 2016). Considerable research has focused on changes in population status and survival because of diminishing sea ice habitat. Regehr et al. (2010) documented decreases in vital rates of the SBS stock, including survival and breeding rates, corresponding to increases in the number of ice-free days per year in waters over the Beaufort Sea continental shelf (including waters adjoining the program area)." Further, "The most recent analyses suggest that the SBS stock declined substantially from 2003 to 2009 and was stable at lower levels from 2006 to 2015 (Obbard et al. 2010; Bromaghin et al. 2015; USFWS 2019; Bromaghin et al. 2021). The estimated population size of the SBS stock was approximately 900 bears in 2010 (90 percent CI = 606–1,212; Bromaghin et al. 2015; USFWS 2019). An updated analysis estimated the Alaska SBS abundance to be 573 bears in 2015 (95 percent Bayesian credible interval [232, 1,140]; Bromaghin et al 2021). Both estimates are significantly reduced from previous estimates of approximately 1,800 bears in 1986 (Amstrup et al. 1986) and 1,526 bears in 2006 (Regehr et al. 2006)."
Brisson	Brook	Trustees for Alaska	80131	317	The draft SEIS states that "Regehr . . . documented decreases in vital rates of the SBS stock, including survival and breeding rates, corresponding to increases in the number of ice-free days per year in waters over the Beaufort Sea continental shelf."(886) While that statement is true, BLM and FWS ignore additional findings that those annual ice-free days are projected to continue to increase, which will mean further decreases in vital rates, including survival and breeding rates.(887) BLM and FWS fail to apply existing information and trends regarding increased ice-free days over the Beaufort Sea continental shelf to generate a relevant projection for SBS bears' survival and breeding rates. (886) DSEIS at 3-227. (887) E.g., Bromaghin et al., Polar bear population dynamics in the southern Beaufort Sea during a period of sea-ice decline, 25(3) ECOLOGICAL APPLICATIONS 634-651 (2015) ("Reduced spatial and temporal availability of sea ice is expected to increasingly force population dynamics of polar bears as the climate continues to warm.")	The declining trends in sea ice and its effect on polar bears is specifically addressed in section 3.4.3 of the Draft SEIS. "Recent changes in demography, distribution, habitat use, and behavior of polar bears are attributable primarily to loss of sea ice habitat as a result of climate warming (Atwood et al. 2016a; USFWS 2016). The greatest future declines in optimal polar bear habitat are predicted to occur in the divergent ice ecoregion along the Arctic coastlines of Russia and Alaska... Based on population size, summer ice loss, length of ice-free period, the amount of habitat over the continental shelf, and prey diversity, the SBS stock has been ranked as one of three having the highest vulnerability to the effects of climate change (Hamilton and Derocher 2019)." Producing quantitative estimates of projected declines in survival and breeding rates is beyond the scope of this SEIS.
Brisson	Brook	Trustees for Alaska	80131	318	But the draft SEIS fails to examine impacts to polar bears from a continued increase in those ice-free days. The final SEIS must disclose the likely impacts to the SBS population from spending more time on land and the growing distances that bears must traverse from sea ice to land	The effects to polar bears of ongoing ecological changes resulting from the decline in sea ice cover are described in section 3.3.5

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	319	Threatened polar bears den on the Coastal Plain and are using the area with increasing frequency for other activities. The majority of the Coastal Plain (approximately 77 percent) is designated as critical habitat for the species.(889) BLM and FWS fail to adequately support their assumptions about the number of denning female polar bears expected on the Coastal Plain. The draft SEIS states that, despite the SBS population using an area of widespread, low-density denning areas, "the highest density of maternal dens in Alaska 2000-2015 (2.06-2.32 dens per 100 km2) was located in the northwestern corner of the project area."(890) BLM and FWS further observes that the distribution of maternal dens in Alaska has shifted landward over the past three decades as sea ice has become less available and stable.(891) Problematically, as discussed below, BLM and FWS opted to make this high density denning area available for leasing and seismic exploration under every action alternative. The agency must explain this choice in light of its own acknowledgment that current scientific information indicates this is the highest density denning area in not only the project area, but the entire state of Alaska. BLM and FWS state that based on the recent Patil 2022 study, it estimates that approximately 14 female bears may den in the program area annually, with a confidence interval of 5 to 30 dens.(892) While this may accurately reflect the current number of bears denning area, the Leasing Program area will likely remain important as the percentage of bears denning on land increases with continuing sea ice loss.(893) BLM and FWS must show some defensible calculation to support its estimate of the number of denning bears annually in the program area over the course of the program, which could last decades into the future if oil and gas leasing eventually leads to development. (889) 75 Fed. Reg. at 76,086. (890) DSEIS at 3-232. (891) Id. (892) DSEIS at 3-233 (citing Patil et al. (2022) and DSEIS vol. 3 App. J). (893) DSEIS at 3-233.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot. The prospect of larger percentages of polar bears denning on land over future decades is acknowledged and discussed in the SEIS. Providing quantitative calculations of the number of denning polar bears annually in the program area over the decades to come would be unduly speculative given the number of variables at play.
Brisson	Brook	Trustees for Alaska	80131	320	Further, the draft SEIS fails to meaningfully characterize the extent to which climate change will reduce the stability of dens during the future time periods when oil and gas activities will also be disturbing denning bears.	The Cumulative Effects section for Polar Bear includes a discussion of the cumulative impacts of climate change, including impacts on maternal dens.
Brisson	Brook	Trustees for Alaska	80131	321	Yet that lack of snow cover early in the denning season is just what is projected for the Alaskan Arctic.(895) BLM and FWS must present the best available science indicating the likely timing and amount of snow cover arriving on the Coastal Plain throughout the life of the proposed oil and gas program and disclose the implications of that snow cover for SBS bears' breeding success. (895) See NOAA, Final Rule, Threatened Status for Arctic ringed seal (and other subspecies), 77 Fed. Reg. 76706 (December 28, 2012); see also Molly Rettig, Need a Weather Forecast for 2030? Alaska climatologist can help, ANCHORAGE DAILY NEWS (May 31, 2016), https://www.adn.com/science/article/need-weather-forecast-2030-cutting-edge-alaska-climatologist-may-be-able-helo/2013/05/11/ .	The Climate Change section describes the warming temperatures and increased precipitation year-round, and longer growing seasons, that are predicted to occur in the future and which may have negative implications for the stable conditions required for maternal denning by polar bears, especially if warm temperatures prevent snow cover of sufficient depth from accumulating early in the denning season. Recent research predicts that shorter annual periods of snow cover in the future are likely to result from increased air temperatures, later freeze-up in fall, and earlier snow melt in spring. Although snow cover in northeastern Alaska still is predicted to occur during the maternal denning period of October to April (Littell et al. 2018; Box et al. 2019), snow depth is more difficult to predict. This issue is also included in the Cumulative Effects section.
Brisson	Brook	Trustees for Alaska	80131	322	Finally, BLM and FWS points to incidental take regulation (ITR) mitigation measures in both its consideration of the affected environment and impacts analysis for polar bears and assumes that such measures have been largely effective at minimizing impacts to bears from North Slope oil and gas activities.(896) FWS has acknowledged in other contexts, however, that previous ITR findings and past reported take underestimated take of denning cubs. Indeed, FWS and USGS developed quantitative modeling (Wilson and Durner 2020) because new information indicated impacts to denning cubs were more significant than previously understood.(897) FWS also explained that past take of cubs due to den disturbances would be underreported due to the limited extent of den detection surveys and monitoring, the difficulty of observing such take in the dark, and the latent nature of cub death caused by survival-impairing disturbances.(898) BLM and FWS's statement in the draft SEIS must be explained in light of these other findings. (896) DSEIS at 3-228 to 3-229. (897) FWS, Southern Beaufort Sea Proposed Incidental Take Regulations Questions and Answers Document (FWS document stating new information indicated significant impacts can occur to denning bears from human activities, leading FWS to develop model); Karimah Schoenhut, Sierra Club, Comment Letter on Beaufort Sea Proposed Incidental Take Regulations at 60 (July 1, 2021) (comment describing source of FWS Q&A document); see also 86 Fed. Reg. 42,982, 43,046 (Aug. 5, 2021) (FWS explaining model is based on new information with goal of analyzing "observable and unobservable take"). (898) 86 Fed. Reg. at 43,048-49 (FWS statement explaining lack of surveys or monitoring under prior ITRs to observe dens and potential disturbance, and impacts were not observable due to limited light and latent manifestation); see also id. at 43,061 (FWS statement acknowledging lack of monitoring information to detect latent cub mortality).	The SEIS analysis acknowledges the possibility that oil and gas activities could result in unobserved take of polar bears, including mortality of polar bear cubs in certain scenarios. The SEIS also analyzes the impact that cub mortality could have on the SBS stock of polar bears. MMPA ITAs do not authorize the underlying oil and gas activities at issue, but they do prescribe mitigation, monitoring, and reporting requirements, and these requirements minimize impacts to polar bears.
Brisson	Brook	Trustees for Alaska	80131	323	The agencies should also explain its changed estimate regarding the number of acres of potential terrestrial denning habitat for maternal polar bears within the three zones of estimated hydrocarbon potential on the Coastal Plain. Table 3-39 in the draft SEIS estimates a total of 18,200 acres of denning habitat across the high, medium and low scenarios, citing Durner and Atwood (2018).(899) The 2020 final EIS estimated only 4,530 acres of potential terrestrial denning habitat, citing Durner et al. (2010), Durner et al. (2006), and Durner et al. (2001).(900) While it appears that the draft SEIS is more likely the accurate estimate with its cites to the more recent Durner and Atwood delineation, BLM and FWS should nonetheless explain the variation so that the public can understand its methods. (899) DSEIS at 3-245. (900) FEIS at 3-181.	The revised habitat totals were derived from a habitat model that was not available for including in the 2019 EIS. As noted in the comment, the source for those estimates changed. Text has been edited to add a sentence explaining the availability of the new model.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	324	Due to the lack of this information, BLM and FWS's assessment of the impacts that oil and gas activities will have on denning is measured against an inaccurate baseline. Polar bears are particularly vulnerable to anthropogenic disturbance during denning as compared to other times in their life cycle.(901) The draft SEIS thus fails to take into account how disturbances to denning caused by oil and gas activities will be even more severe in the future than they would be at present. (901) Steven C. Amstrup, Polar Bear, Ursus Maritimus, in WILD MAMMALS OF NORTH AMERICA: BIOLOGY, MGMT., AND CONSERVATION 587, 606 (G. A. Feldhamer, B. C. Thomson & J. A. Chapman eds., 2003).	The possible changes (increases) in the magnitude of impacts over time is specifically addressed in Marine Mammals, Section 3.3.5.
Brisson	Brook	Trustees for Alaska	80131	325	BLM and FWS also failed to consider existing or projected levels of human-caused lethal take of polar bears in its environmental baseline. The draft SEIS refers to FWS's 2017 SBS Polar Bear Stock Assessment Report, which explains that from 2006-2015 an average of an average of 19 bears per year were removed from the U.S. portion of the SBS stock, averaging 50 percent males, 27 percent females, and 22 percent unreported sex.(902) It also notes that 14.2 bears were removed from the Canadian portion of the SBS stock, with a sex ratio of 56 males to 44 females.(903) The draft SEIS explains that overall, from 2008-2017, there were 420 total human-caused removals of polar bears in Alaska (including both the SBS and Chukchi Sea stocks), but that the number attributable to SBS bears is not known. However, FWS's Polar Bear Five Year Review states that the average number of human-caused mortalities was between 2010-2014 at 36 SBS bears taken per year.(904) (902) DSEIS at 3-229. (903) Id. (904) FWS Polar Bear Five Year Review (2017) at 27. Combined annual harvest from 1988-2007 averaged 56.9, and from 2006-2010 averaged 53.6. FWS Polar Bear: Southern Beaufort Sea Stock Assessment (2010) at 3, 5.	The Draft SEIS cites Miller et al. 2018, the most recent information available on human-caused lethal take of SBS polar bears. Miller, S., B. Crokus, M. St. Martin, J. Wilder, R. Wilson, B. Benter, C. Putnam, and C. Hamilton. 2018. Polar bear program annual report: A summary of 2017 activities. U.S. Fish and Wildlife Service, Marine Mammals Management, Anchorage, AK.
Brisson	Brook	Trustees for Alaska	80131	326	The draft SEIS fails to examine how this current level of lethal take will adversely affect SBS polar bears, including the cumulative effects on annual rates of recruitment or survival combined with the additional impacts of oil and gas activities on the Coastal Plain. It completely ignores the Potential Biological Removal (PBR) level established for the SBS stock under the MMPA. PBR is defined as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its Optimum Sustainable Population (OSP).(905) PBR for the SBS stock has most recently been calculated at 14, far below the average number of bears removed via annual harvest alone.(906) According to a recent FWS memorandum, with at least 33.2 bears removed from the SBS population annually compared to a PBR of 14, it is clear that "the ability of the population to reach OSP is [already] being compromised."(907) The draft SEIS neglects to consider this baseline information in its cursory evaluation of the status of the SBS stock or incorporate it into its cumulative effects analysis. As noted in the FWS memorandum and described above, it is reasonable to assume that any additional lethal take from seismic exploration would cause further adverse effects on annual rates of recruitment or survival.(908) Likewise, over the lifetime of an industrial oil field, from post-lease exploration to infrastructure construction and oil and gas development and production, it is reasonable to assume that some additional level of lethal take will occur. (905) 16 U.S.C. § 1362(20). (906) FWS (draft) Polar Bear: Southern Beaufort Sea Stock Assessment (2017) at 11. (907) U.S. Fish and Wildlife Service, Memo re: 1002 Coastal Plain Incidental Take Regulation Application, September 2018 at 3, available at https://asSEIS.documentcloud.org/documents/5647572/Alaska-Memo.pdf (908) See id; see also supra Section IV.D.1.	Effects to SBS polar bears from ongoing oil and gas activities occurring outside of the Leasing Program area are addressed in the Cumulative Impacts section. The SEIS analyzes the potential contribution of Leasing Program-related activities to cumulative impacts to SBS polar bears. Discussion of the Potential Biological Removal concept has been added to the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	327	FWS has already authorized take by incidental harassment of nearly half the SBS population. As such, any further harassment of this population should not be considered as potentially compliant with the MMPA's mandate that FWS only authorize take of a "small number" of this population.	It is premature to judge whether hypothetical activities specified in future MMPA requests would meet applicable MMPA standards such as the "small numbers" requirement.
Brisson	Brook	Trustees for Alaska	80131	336	BLM and FWS must evaluate impacts from oil and gas activities on all terrestrial denning critical habitat on the Coastal Plain and consider measures to mitigate impacts to that broader geographic area. The agencies also should consider the impacts of alternative seismic exploration methods and seek to mitigate those impacts specifically.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Brisson	Brook	Trustees for Alaska	80131	337	In December 2019, FWS and USGS scientists released a study, "Seismic Survey Design and Effects on Maternal Polar Bear Dens," that attempted to quantitatively model impacts on polar bears from seismic surveys on the Arctic National Wildlife Refuge Coastal Plain (Wilson and Durner).(928) The study provided a method for quantitatively calculating take while considering mitigation measures such as temporal and geographic restrictions and den-locating technologies (aerial Forward Looking Infrared (FLIR or AIR) detection surveys).(929) The agencies have since made adjustments to their model. BLM and FWS should quantitatively model the potential impacts to denning bears in areas of the Coastal Plain that are open to seismic exploration and include those findings in the final SEIS. (928) Ryan R. Wilson & George M. Durner, Seismic Survey Design and Effects on Maternal Polar Bear Dens, 84(2) J. OF WILDLIFE MGMT. 201 (2020). (929) Id.	As this is a SEIS, no project proposals have been made to BLM that would allow site-specific analysis, thus limiting the ability to model the impacts to denning bears. The model and outcomes are sensitive to the terrain and climatology within the proposed project footprint. A more detailed analysis of the effects of disturbance on denning bears will be conducted for any specific actions proposed (e.g., seismic surveys, exploration activity, construction) when specific project parameters and are known. The SEIS contains ample analysis of the reasonably foreseeable impacts of seismic surveys and how impacts to denning polar bears could affect the SBS stock.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	338	A rational, scientifically legitimate analysis of the impacts of seismic exploration requires consideration of the areal extent of potential surveys during a given denning season and the number of den locations distributed in the proposed survey area, and must consider the high failure rate for the den detection methods that will be employed. BLM and FWS provided no such analysis in the draft SEIS. For example, taking into account the realities of heavy vehicle movement during recent seismic surveys in Alaska and the limitations on den detection technology, Dr. Steven Amstrup explained in 2019 that a seismic survey covering the entire Coastal Plain within a denning season would pose the risk that at least one undetected polar bear den would be directly run over by a vehicle and crushed, with potential immediately lethal consequences for the mother and cubs.(942) Indeed, BLM and FWS acknowledge this possibility, but do not analyze the impacts it would have on the SBS population.(943) Moreover, due to the density of 3D seismic survey grids, any undetected den would have a very high probability of being disturbed by the very close passage of heavy vehicles.(944) (942) See March 2019 Amstrup Letter at Table 2, columns 1 and 2 (showing 79% probability of running over at least one den if there are 10 undetected dens in survey area, and 90% if there are 15 undetected dens). (943) DSEIS at 3-256. (944) See March 2019 Amstrup Letter at 13-16.	Lease stipulation 5 in Alternative D has been revised to increase protections for polar bear denning habitat. The stipulation prohibits leasing (and seismic surveys) from the coast to 1 mile inland along the coastline along the Canning/Stains rivers and in the Camden Bay area. This stipulation now protects 20,400 acres of maternal denning habitat. As this is a SEIS, no project proposals have been made to BLM that would allow site-specific analysis, thus limiting the ability to model the impacts to denning bears. A more detailed analysis of the effects of disturbance on denning bears will be conducted for any specific actions proposed (e.g., seismic surveys, exploration activity, construction) when specific project parameters and are known. The SEIS contains ample analysis of the reasonably foreseeable impacts of seismic surveys and how impacts to denning polar bears could affect the SBS stock.
Brisson	Brook	Trustees for Alaska	80131	339	BLM and FWS failed to take a hard look at impacts from seismic activities, which could have population-level impacts on threatened polar bears. BLM and FWS must thoroughly evaluate these impacts before leasing any areas or authorizing any seismic activity.	Lease stipulation 5 in Alternative D has been revised to increase protections for polar bear denning habitat. The stipulation prohibits leasing (and seismic surveys) from the coast to 1 mile inland along the coastline along the Canning/Stains rivers and in the Camden Bay area. This stipulation now protects 20,400 acres of maternal denning habitat. As this is a SEIS, no project proposals have been made to BLM that would allow site-specific analysis, thus limiting the ability to model the impacts to denning bears. A more detailed analysis of the effects of disturbance on denning bears will be conducted for any specific actions proposed (e.g., seismic surveys, exploration activity, construction) when specific project parameters are known. The SEIS contains ample analysis of the reasonably foreseeable impacts of seismic surveys and how impacts to denning polar bears could affect the SBS stock.
Brisson	Brook	Trustees for Alaska	80131	340	As a threshold matter, the agencies fail to assess impacts to critical habitat in the context of their assumption that BLM cannot preclude roads and other rights-of-way through any part of the Coastal Plain. BLM continues to interpret the Tax Act to mandate it grant authorizations for access and infrastructure "necessary" to access the leased oil and gas.(946) The result of such an interpretation is that BLM is poised to allow the construction of pipelines and other permanent facilities deemed "necessary" across even the most sensitive denning habitat and designated critical habitat. As Dr. Whiteman explains, the open-ended description of ROW construction implies that roads and pipelines could traverse critically important polar bear denning habitat, which would render the NSO categorization meaningless. (947) Critical habitat is so widespread across the high and medium oil potential areas that it is difficult to understand any assertion that critical habitat could be avoided post-leasing. (946) See supra Section IV.A.3. (947) Whiteman DSEIS Comments at 8.	The agencies disagree that NSO protections could be rendered "meaningless." While it is true that roads and pipelines could be authorized to cross lands associated with NSO leases pursuant to Section 20001(c)(1) of PL 115-97 mandates, NSO stipulations would help protect polar bear critical habitat from impacts associated with other types of oil and gas activities, e.g., construction and operation of development and production pads. The potential impacts of issuing ROWs that may be required per the referenced Section 20001(c)(1) of PL 115-97 mandate are analyzed in the SEIS.
Brisson	Brook	Trustees for Alaska	80131	341	BLM and FWS also fail to assess quantitatively or qualitatively how much polar bear habitat would be lost under the Reasonably Foreseeable Development scenario, including areas for denning and travel to and from the coast. Absent the closure of areas to leasing, it is unlikely that the development footprint for the RFD scenario would be located in an area that is not critical habitat or potential maternal denning habitat since almost the entirety of the high and medium hydrocarbon potential areas are located in the within such habitats.(948) The draft SEIS provides no meaningful analysis of how much critical habitat and potential maternal denning habitat will be degraded, destroyed, or fragmented by the whole action. (948) DSEIS at 3-245.	Suitable denning habitat depends on highly localized characteristics. While the RFD scenario estimates potential extent of various oil and gas activities, it cannot reliably assume where on the landscape those activities would occur, which limits the ability to perform, at the program development stage, the type of quantitative analysis requested by the comment. The SEIS uses available quantitative information where appropriate (e.g., estimated number of dens within the program area) to inform its analysis of potential impacts to denning polar bears.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	342	The draft SEIS fails to explain its assumption that during development and production, losses of polar bear habitat would be essentially limited to the gravel footprint of roads, pads and mines.(956) The draft SEIS also allows for gravel mining within NSO areas, and acknowledges that gravel mining will impact polar bears and their habitat.(957) Moreover, FWS explained to BLM in comments on the prior preliminary final EIS that "while denning is concentrated along the coast, dens can occur 20+ miles inland and a considerable number of dens are documented 5+ miles from the coast."(958) And there is no support for BLM and FWS's conclusion that effects from habitat loss and altered use of denning habitat by polar bears would be minor to moderate, or that mitigation measures would reduce these impacts to negligible.(959) BLM and FWS must assess the impact of the habitat fragmentation caused by the development of oil and gas facilities spanning hundreds of miles in designated critical habitat on the movements, behaviors, health and distribution of SBS polar bears. (956) Id. at 3-245 ("During the development and production phases of post-leasing activities, long-term (essentially permanent), direct loss of polar bear habitat would occur as a result of gravel mining and placement for roads and pads within the estimated footprint of surface development."). (957) Id. at 3-244. (958) U.S. Fish and Wildlife Service. Memorandum Regarding Comments on the Preliminary Final Environmental Impact Statement (EIS) for the Coastal Plain Oil and Gas Leasing Program for the Arctic National Wildlife Refuge, Alaska (2019), Comment #70. (959) DSEIS at 3-246.	The approach to minimizing impacts on the SBS population is multi-layered and begins with protections that prohibit leasing in areas of highest denning density (revised Lease Stipulation 5) and prohibit surface occupancy in most (93%) of the total area available for leasing. A maximum of 2,000 acres could be developed under Section 20001(c)(3) of PL 115-97, with an additional 160-310 acres of gravel pits. Alternative D is limited to almost half that acreage (1,040 acres). Gravel pits are expected to be constructed next to facilities or roads used for satellite access. Minimal additional road construction is expected to be needed to access gravel mines, thus minimizing habitat fragmentation. BLM would consider strategies to avoid or minimize impacts to denning habitat when reviewing proposals for roads and pipelines. Also, preferred denning habitat often corresponds to steep banks that road and pipeline planners typically attempt to avoid. . Infrastructure within 5 miles of the coastline must be designed to avoid impeding polar bears. If a route is proposed and subsequently approved the Required Operating Procedures in ROP 10 offer additional protection. We do not view fragmentation of denning habitat from the finite estimated level of proposed surface development to be problematic for polar bears. First, we are unaware of any studies that shown a negative effect to maternal denning polar bears due to fragmentation of their denning habitat. Second, there is a large area of denning habitat available to bears in the region, so even if a portion were unavailable due to fragmentation, there is sufficient denning habitat remaining. Finally, we still see frequent denning by polar bears in areas surrounding the existing oil fields further west, thus at least some bears don't have problems accessing denning habitat the requires them to cross roads. We also see bears frequently use roads and areas immediately adjacent to development, so roads don't appear to hinder their movements.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	343	Analyzing impacts to only mapped potential denning habitat overlooks the fact that polar bears must move between these riverine corridors to travel to the coast, reach their dens, and seek out food sources. BLM and FWS's failure to consider impacts beyond potential maternal denning habitat artificially limits the scope of its analysis by omitting impacts to critical habitat on the majority of the Coastal Plain. In sum, the draft SEIS fails to evaluate the direct, indirect, and incremental cumulative effects that could occur to polar bears due to this proposal. These include the exclusion or avoidance from feeding, resting, or denning areas; increased energetic costs; and disruption of associated biological behaviors and processes as a result of disturbance and displacement of their critical habitat caused by an oil and gas program. Ultimately, BLM and FWS provide no reasonable basis to support their surprising conclusion that the effects on polar bears of developing a large oilfield in the middle of designated polar bear critical habitat will be negligible.	The SEIS acknowledges that aerial den detection is not perfect and that some denning polar bears may be impacted. The SEIS details the multi-layered approach to minimizing impacts on maternal dens which begins with protections that prohibit leasing or restrict activities in areas of highest denning density (revised Lease Stipulation 5). BLM would consider strategies to avoid or minimize impacts to denning habitat when reviewing proposals for roads and pipelines. Also, preferred denning habitat often corresponds to steep banks that road and pipeline planners typically attempt to avoid. the Required Operating Procedures in ROP 10 offer additional protection, beginning with surveys to locate polar bear dens. These surveys may include replicates and multiple methods to maximize detection probabilities. ROP 10 also requires active monitoring identified in the site-specific plan that would accompany approval. Although polar bears do den in high densities in the Coastal Plain lease area compared to elsewhere across the North Slope, den densities are still very low compared to the landscape available. The SEIS provides detailed analysis of potential impacts to polar bears on the surface (i.e., non-denning polar bears) in Section 3.3.5. Among other things, this analysis speaks to a variety of potential behavioral responses and pertinent seasonal and geographic considerations.
Brisson	Brook	Trustees for Alaska	80131	344	BLM and FWS do not clearly state the distance at which blasting and pile-driving noise would likely be detected by denning or non-denning bears, and entirely fail to examine the likelihood of the identified potential impacts occurring. As discussed elsewhere, the agencies also fail to evaluate the impacts of seismic testing, including noise impacts on denning bears. The final SEIS must evaluate whether winter construction activities such as blasting and pile driving could result in displacement, injury or death to polar bears. If a 2003 report prepared for ExxonMobil measuring noise at artificial dens represents the best available science on the sensitivity of actual denning polar bears to noise, then BLM and FWS cannot support a conclusion that all the noise associated with oil and gas activity on the coastal plain, including seismic exploration and winter construction, would not significantly affect polar bears.	The SEIS 3.3.5 assessed likely impacts in detail based on the best available information on disturbance of denning and non-denning polar bears by noise and visual disturbance from human activities, providing data on bear response to different stimuli at different distances. Specifically, it states “The most audible disturbance stimuli measured from inside the dens is an underground blast, detectable in artificial dens up to 0.8 miles from the source (MacGillivray et al. 2003).” Additional citations on the potential effects of noise include Garner and Reynolds (1986: p. 518), Blix and Lentfer (1992), Amstrup (1993), MacGillivray et al. (2003), Perham (2005), Schliebe et al. (2006), USFWS (2006, 2008b, 2009), Andersen and Aars (2008), Larson et al. (2020), Owen et al. (2021), Quigley (2022), and Woodruff et al. (2022a).

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	345	Other industrial activities and noise will disturb non-denning bears as well. Routine snowmachine noise has been shown to prompt significant avoidance responses in polar bears at distances up to 3,272 meters - over two miles.(965) Except for male adults, bears studied "typically had a pronounced response and frequently fled snowmobiles and continued to flee the area at lengthy distances."(966) The draft SEIS notes this study but fails to mention the two-mile response threshold noted for some bears and understates the intensity of the observed fleeing response.(967) The final SEIS must disclose the known snowmachine impacts more transparently and discuss the likely impacts of the many other mobile sources of foreseeable industrial noise on polar bears, including trucks, bulldozers, airplanes, helicopters, etc. Disturbance to individuals and hazing would only exacerbate impacts to an already depleted population, and BLM and FWS cannot assume polar bears would simply walk through or around an oil field without basis.(968) Indeed, BLM and FWS's own admissions that polar bears using onshore habitat tend to spend more time fasting and have less energy logically undercuts its assumption that maternal bears would be simply be discouraged from denning near industrial activities and move away from them.(969) (965) Andersen, M., and J. Aars. 2008. "Short-term behavioral response of polar bears (Ursus maritimus) to snowmobile disturbance." 31 POLAR BIOLOGY 501-507. (966) Id. (967) DSEIS at 3-247. (968) Id. at 3-251 to 3-252. (969) Id. at 3-252	Data from the referenced study (Andersen and Aars 2008) was described on 3.3.5, "In an experimental study on Svalbard, female bears with young cubs reacted to direct approaches by snowmachines nearly 1 mile away, on average (mean distance = 5,033 feet; 95 percent CI = 1,667–9,081 feet; Andersen and Aars 2008). Medium-sized single bears (subadults) also reacted at fairly long distances (mean distance = 3,806 feet; 95 percent CI = 1,230–4,439 feet) and adult males and females without cubs were the least reactive (mean distances = 1,070 and 538 feet, and 95 percent CI = 453–1,627 and 161–1,781 feet, respectively)." The researchers in that study intentionally disturbed bears on sea ice in Svalbard by approaching directly on two snowmachines traveling at speeds of 18-25 mph, then recording the reactions of the bears and the distances at which responses were noted, as well as the strength of the responses. The authors did not identify a 2-mile "response threshold for some bears" ; rather, that was the maximum distance at which a response was noted for any bear. Activities authorized in the program area would be required to adhere to restrictions intended to mitigate disturbance to polar bears, including minimizing interactions (Draft SEIS Section 2.3.5, Lease Stipulations and Required Operating Procedures). For example, required operating procedure (ROP) 42 specifically prohibits operators from following wildlife with ground vehicles or aircraft.
Brisson	Brook	Trustees for Alaska	80131	346	BLM and FWS further state that FWS concluded impacts to individual bears from disturbance and interaction with humans resulting from oil and gas activities would be "short-term and localized," based on oil exploration and development west of the Arctic Refuge.(970) The agencies also state that while impacts to date have been deemed "negligible," this might not be the case in the future "if full-scale industrial development proceeds in the program area, polar bears continue to increase their use of terrestrial habitats, and the SBS population continues to decline."(971) There is no evidence to suggest that polar bears will decrease their use of terrestrial denning habitat or that the SBS population will suddenly bounce back, absent urgent reductions in greenhouse gas emissions.(972) And BLM and FWS are considering opening the Coastal Plain to full-scale industrial development. As such, BLM and FWS must analyze what the impacts of this development will be on polar bears, not simply raise questions as to whether such impacts will occur. Again, BLM and FWS should evaluate the potential of its RFD scenario to impact both denning and non-denning bears. Instead, BLM and FWS rely heavily on Incidental Take Regulations that do not yet exist for the Coastal Plain to conclude that noise from industrial activities will have no significant impact on bears.(973) This reliance is misplaced. (970) Id. at 3-251 to 3-252. (971) Id. at 3-251. (972) See e.g., Molnár et al. (2020) (examining polar bear persistence under various emissions scenarios and finding "high greenhouse gas emissions ... will jeopardize the persistence of all but a few high-Arctic subpopulations by 2100"). (973) See e.g., DSEIS at 3-250 to 3-251.	The SEIS notes that new ITRs, "if" promulgated, would be the principal mechanism to address impacts (SEIS Section 3.3.5, Marine Mammals - Cumulative Impacts), but the SEIS includes additional protections for polar bears and their habitat in leasing stipulations and required operating procedures (see Section 2.3.5, Lease Stipulations and Required Operating Procedures). Additionally, any proposed project with on-the-ground activity would be subject to project-specific environmental review (e.g., NEPA) and permitting, where additional protective restrictions may be required to receive authorization.
Brisson	Brook	Trustees for Alaska	80131	347	In sum, the draft SEIS fails to disclose the specific noise sources and associated detectability distances expected. The potential impacts are significant, including abandonment of dens which can equate to death for cubs, and curtailed nursing time in the den, which also can impair cub survival. There have also been observed strong avoidance reactions of non-denning bears to sources of noise, which could have significant impacts given the energy deficient state of many onshore bears. BLM and FWS must fully analyze these impacts in the final SEIS and cannot rely on future, unspecified ITRs to protect polar bears from noise disturbance.	There are no proposed projects under consideration in this SEIS, and as such, specific noise sources cannot be provided. However, SEIS Section 3.2.3, Acoustic Environment - Direct and Indirect Impacts, does provide a description of equipment likely to be employed should exploration or development occur. Impacts to marine mammals from noise are discussed throughout Section 3.3.5, Marine Mammals - Direct and Indirect Impacts.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	348	While the draft SEIS acknowledges that oil and gas activities lead to more human-bear encounters, it downplays the effects of those activities on the SBS population, particularly in light of the cumulative effects of climate change on the population. BLM and FWS must disclose the foreseeable impacts to polar bears and describe how the increased human-bear interactions, increased incidences of hazing and other efforts to deter bears from seeking food sources in developed areas, and increased energetic costs for polar bears will translate into adverse impacts for the SBS population. For instance, BLM and FWS concede that "[a]ny injury or mortality from oil and gas development-related human/bear conflicts would pose a problem because of the declining status of the SBS population."(975) And the agencies acknowledge that such impacts could occur during autumn/early winter when females prospect for dens, and again in spring when maternal bears and cubs leave their dens to move to the coast. (976) BLM and FWS also acknowledge that as polar bears increasingly use land, starving bears might attack more people in the future, leading to higher rates of intentional take than in the past.(977) But BLM and FWS then fail to assess the likelihood of such encounters occurring, again relying on information and mitigation measures from the western North Slope to minimize these impacts or point to decreasing rates of deterrence events.(978) But again, this fails to account for the higher concentrations of denning bears and critical habitat in the Leasing Program area as compared to the western North Slope, and the increasingly depleted state of SBS polar bears. (975) DSEIS at 3-257. (976) Id. at 3-259 to 3-260. (977) Id. at 3-255 (citing Wilder 2017). (978) DSEIS at 3-255, 3-259 to 3-260.	Information concerning past and ongoing oil and gas activities in other parts of the North Slope region sheds valuable light on the potential impacts associated with human-bear encounters that may result from similar activities in the Program Area. As evidenced by the commenter's references to various portions of the Draft SEIS, the agencies also consider other factors relevant to the potential frequency and severity of human-bear interactions during future Program-related activities on the Coastal Plain.
Brisson	Brook	Trustees for Alaska	80131	349	BLM and FWS also failed to assess and disclose the potential threats to polar bears from oil spills. While the draft SEIS states that accidental spills, leaks, and other sources of contamination exposure are a potential source of injury or mortality - potentially one of the largest threats to bears after climate related habitat loss, citing Routti 2019(979) - BLM and FWS brush aside the potential impacts by relying on assumptions that any spill would be small, on-land, and cleaned up quickly.(980) The assumptions underlying BLM and FWS's discussion of oil spills are faulty, and the agencies underestimate the potential environmental damage from spills on the Coastal Plain. Further, BLM and FWS state that spills associated with development projects on the mainland are less concerning for polar bears than marine spills.(981) This finding seemingly ignores the fact that polar bears are spending more time onshore due to climate change, so terrestrial spills are increasingly likely to affect their habitat and prey. BLM and FWS also failed to explore alternatives or mitigation measures to reduce spills and protect areas of particular importance to bears, like feeding and resting areas, summer refugia and winter denning areas. Thus, BLM and FWS's analysis of impacts to polar bears from oil spills is deficient. (979) Id. at 3-257. (980) Id. at 3-256. (981) Id. at 3-256.	Based on other project-specific spill analysis (e.g., Nanushuk Project EIS, Willow Master Development Plan EIS/SEIS), most spills and accidental releases are likely to occur and be contained to gravel pads and gravel roads or ice pads and ice roads. Under NSO restrictions, large portions of polar bear terrestrial habitat will not be at risk of contamination from spills or other accidental releases. The SEIS also includes a variety of restrictions intended to protect polar bears and their habitat (see Draft SEIS Section 2.3.5, Lease Stipulations and Required Operating Procedures). Finally, any proposal to construct oil-producing and transportation infrastructure would be subject to project-specific environmental analyses (e.g., NEPA), where proposed infrastructure would be analyzed and additional mitigation measures may be required
Brisson	Brook	Trustees for Alaska	80131	350	The draft SEIS's discussion of cumulative impacts to polar bears is inadequate. The draft SEIS does not mention, let alone analyze, the majority of current and reasonably foreseeable circumstances and activities that are affecting and will affect polar bears cumulatively and synergistically with Arctic Refuge development. The draft SEIS fails to analyze the direct, indirect, and cumulative effects of the proposed action against a backdrop of continued climate change, which is already causing habitat loss, conflicts with humans, energetic costs, nutritional stress, and strenuous long-distance swimming for polar bears.	While this SEIS will not authorize any on-the-ground activities what would result in GHG emissions, the SEIS does offer projections of potential GHG emissions for each alternative under the SEIS's hypothetical development scenario (see Section 3.2.1, Climate and Meteorology - Local and Global Direct and Indirect Impacts). Impacts to marine mammals from projected climate change are discussed in Draft SEIS Section 3.3.5, Marine Mammals - Climate Change, and in Section 3.3.5, Marine Mammals - Cumulative Impacts.
Brisson	Brook	Trustees for Alaska	80131	351	The draft SEIS is devoid of any discussion or analysis of how the additive GHG emissions from Coastal Plain leasing and development, acting cumulatively with GHG emissions from other sources, will affect polar bears and polar bear critical habitat. Although the draft SEIS recognizes that sea ice loss and habitat degradation caused by climate change is the primary threat to polar bears, it is silent as to the Leasing Program's emissions and climate effects. BLM and FWS characterize the prospect of considering the Leasing Program's climate effects as "challenging," but does not consider available scientific information to assess the climate change-related impacts of BLM's action in approving leasing on the Coastal Plain - in particular how the program's future significant GHG emissions would further reduce sea ice extent and thus exacerbate the effects of climate change on polar bears. As Dr. Whiteman explains, the best available science allows FWS and BLM to assess impacts to polar bears from oil and gas development on the Coastal Plain, and the agencies should undertake this analysis to full consider impacts to polar bears from the Leasing Program. (983) (983) Whiteman DSEIS Comments at 10-11.	The effects of climate change on polar bears are specifically addressed on 3.3.5 of the SEIS. Recent studies have linked emissions and declines in sea ice to demographic outcomes for polar bears (Molnár et al. 2020, Amstrup and Bitz 2023). The text on 3.3.5 (Cumulative effects) has been edited to include discussion of how the impacts of GHG (GHG) emissions from program-related activities would combine with global GHG emissions and incrementally contribute to the ongoing and projected climate change trends described above. Additionally, the framework described in a recent study by Amstrup and Bitz (2023) was applied to assess the potential extent of this contribution and the possible impacts on polar bears. Amstrup, S. C., and C. M. Bitz. 2023. Unlock the Endangered Species Act to address GHG emissions. Science 381:949–951. Molnár, P. K., C. M. Bitz, M. M. Holland, J. E. Kay, S. R. Penk, and S. C. Amstrup. 2020. Fasting season length sets temporal limits for global polar bear persistence. Nature Climate Change 10:732–738.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	352	BLM and FWS's conclusions regarding the programs GHG emissions, particularly cumulative emissions, underestimate the project's climate impacts as discussed elsewhere in this letter. However, the draft SEIS nonetheless provided an estimate of GHG emissions that BLM and FWS should have considered in determining the Leasing Program's effects on polar bears. BLM and FWS's failure to evaluate how the Leasing Program's contribution to climate change would impact climate-vulnerable polar bears violates NEPA's requirement to consider all foreseeable effects of the agencies' action.	While this SEIS will not authorize any on-the-ground activities what would result in GHG emissions, the SEIS does offer projections of potential GHG emissions for each alternative under the SEIS's hypothetical development scenario (see Section 3.2.1, Climate and Meteorology - Local and Global Direct and Indirect Impacts). Impacts to marine mammals from projected climate change are discussed in Draft SEIS Section 3.3.5, Marine Mammals - Climate Change, and in Section 3.3.5, Marine Mammals - Cumulative Impacts. No changes to text.
Brisson	Brook	Trustees for Alaska	80131	354	BLM and FWS possessed information necessary to gauge how much sea ice from the Arctic Ocean would be lost due to the additive emissions resulting from the Leasing Program, and thereby assess its impacts on polar bear survival and recovery and impacts to critical habitat. A 2016 scientific study quantifies the areal extent of sea ice loss per ton of anthropogenic CO2e emissions.(987) This important study provides an estimate of September sea ice loss area of 3.0 ± 0.3 m2 per each ton of anthropogenic CO2 emissions.(988) Given the finding that September sea ice will be completely lost by the middle of this century at current emissions rates, it also provides a means of gauging how much sooner those effects will happen due to any action that has the effect of inducing additional emissions. (987) See Notz, Dirk and Julianne Stroeve, Observed Arctic sea-ice loss directly follows anthropogenic CO2 emission, 354 SCIENCE 747(2016). (988) Id.	Additional analysis of the potential for Program-related activities to contribute to reductions in Arctic sea ice is now provided in the Final SEIS. The Final SEIS provides quantitative estimates of marginal sea ice reductions that can be attributed to Program-related GHG emissions and evaluates the potential for ensuing consequences to environmental resources such as polar bears.
Brisson	Brook	Trustees for Alaska	80131	355	Thus, given information about the tons of additional CO2e that the Leasing Program and reasonably foreseeable future oil development enabled by it would emit over the project life, it is possible to quantify the acreage of September sea ice loss that can be attributed to BLM's decision. Similarly, this information makes it possible to examine and quantify the extent to which the Leasing Program will undermine attainment of GHG mitigation necessary for polar bears to survive and recover. Such a quantitative analysis was not only possible, but available to BLM and FWS. Even if the agencies were not required to provide a quantitative analysis of the program's GHG emissions on sea ice extent, at a minimum, the agencies needed to qualitatively describe the climate impacts from its additional GHG emissions on polar bears.	Additional analysis of the potential for Program-related activities to contribute to reductions in Arctic sea ice is now provided in the Final SEIS. The Final SEIS provides quantitative estimates of marginal sea ice reductions that can be attributed to Program-related GHG emissions and evaluates the potential for ensuing consequences to environmental resources such as polar bears.
Brisson	Brook	Trustees for Alaska	80131	357	Consistent with the 2016 study, the best available science indicates that due to the relationship between polar bears and sea ice, actions that undermine emissions reductions by generating additive emissions affect the survival and recovery of polar bears. A 2010 modeling study found that GHG mitigation could enable polar bears to persist in greater numbers and more areas than under the "business-as-usual" emissions case, where two-thirds of the world's polar bears could disappear by mid-century.(989) It found that, due to the linear nature of the relationship between sea ice loss and temperature, mitigating greenhouse gas emissions would mean "that previously predicted declines in polar bear distribution and numbers are not unavoidable."(990) (989) Amstrup, S., DeWeaver, E., Douglas, D. et al., Greenhouse gas mitigation can reduce sea-ice loss and increase polar bear persistence, 468 NATURE 955 (2010). (990) Id. at 955 (internal citations omitted).	The relationship between ongoing and projected decreases in Arctic sea ice extent and potential impacts to SBS polar bears is thoroughly discussed in the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	358	Another recent study examined the persistence of polar bear subpopulations based on projected relationships between sea ice decline and fasting period duration under both a "high" and "moderate" GHG emissions scenario. The study found that "with high greenhouse gas emissions, steeply declining reproduction and survival will jeopardize the persistence of all but a few high-Arctic subpopulations by 2100. Moderate emissions mitigation prolongs persistence but is unlikely to prevent some subpopulation extirpations within this century."(991) The authors concluded that "[a]voiding continued sea-ice decline requires aggressively mitigating greenhouse gas rise, and our results explicitly describe the costs to polar bears of avoiding that mitigation."(992) Thus, again, the best available science shows that emissions mitigation will preserve more polar bear subpopulations for longer over a larger geographic area. Conversely, these studies demonstrate that authorizations for oil and gas projects which in turn increase future GHG emissions will contribute further to declines in sea ice, which in turn reduces polar bear populations. (991) Molnár, P.K., Bitz, C.M., Holland, M.M. et al, Fasting season length SEIS temporal limits for global polar bear persistence, 10 NATURE CLIMATE CHANGE 732 (2020). (992) Id.	Additional analysis of the potential for Program-related activities to contribute to reductions in Arctic sea ice is now provided in the Final SEIS. The Final SEIS provides quantitative estimates of marginal sea ice reductions that can be attributed to Program-related GHG emissions and evaluates the potential for ensuing consequences to environmental resources such as polar bears.
Brisson	Brook	Trustees for Alaska	80131	359	The question of how much extra sea ice will be lost or how much sooner a given level of sea ice loss will occur due to the Leasing Program's approval is important to assessing the impacts of the action on polar bears and critical habitat. The scientific information to gauge this impact exists and will be submitted to BLM and FWS with public comments on the draft SEIS. According to the agencies' own calculations, the Leasing Program will result in millions of additive tons of CO2e being emitted between now and the mid-century that otherwise would not be emitted. Since these additional emissions can be directly translated into additional sea ice loss, and polar bear survival and recovery depends on delaying those sea ice losses, BLM and FWS cannot simply ignore the effect of these emissions on the species and its habitat.	While this SEIS would not authorize any on-the-ground activities that would result in GHG emissions, the SEIS does offer projections of potential GHG emissions for each alternative under the SEIS's hypothetical development scenario (see Section 3.2.1, Climate and Meteorology - Local and Global Direct and Indirect Impacts). Impacts to marine mammals from projected climate change are discussed in Draft SEIS Section 3.3.5, Marine Mammals - Climate Change, and in Section 3.3.5, Marine Mammals - Cumulative Impacts.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	360	The draft SEIS recognizes that climate change is causing, and will continue to cause, an increase in polar bears denning on land and spending time on land, which will lead to more bear-human conflict.(993) The draft SEIS does not, however, assess the myriad other ways climate change will act cumulatively with Refuge activities to increase threats to polar bears. For example, polar bears' decreased body condition will mean that any disturbance from oil and gas activities will take a greater energetic toll than it would on healthy bears. As Dr. Whiteman explains, any disturbance that causes a bear to flee has a high metabolic cost which is very damaging to energy-depleted SBS polar bears. (994) Moving at even relatively slow speeds results in bears expending 13 times more energy than they otherwise would.(995) The draft SEIS notes that polar bear walking is "less efficient" at speeds above 3.3 miles per hour, but does not analyze the energetic demands or consequences associated with these greater lengths and speeds of travel.(996) Female polar bears that are energetically stressed may forgo reproduction, rather than risk incurring the energetic costs of an unsuccessful reproductive process, and the persistent deferral of reproduction could contribute to a declining population trend, further threatening a species with an intrinsically low rate of growth.(997) (993) See e.g., DSEIS at 3-251 to 3-252, 3-255. (994) Whiteman DSEIS Comments at 10. (995) S. Schliebe, et al., Range-Wide Status Review of the Polar Bear (Ursus Maritimus), U.S. Fish and Wildlife Service (2006) at 75. (996) DSEIS at 3-242. (997) Schliebe (2006) at 20.	The agencies agree that increased disturbance of bears due to industrial development in the area could potentially lead to increase energetic expenses of bears if harassment occurs. However, not all bears that encounter human development display harassment responses, thus it's unclear how frequently energetic consequences from disturbance may occur. Additionally, any harassment would be of short duration and thus unlikely to lead to prolonged increases in energetic output due to disturbance. Because the Draft SEIS reflects leasing and not the physical development or exploration of the area, it is not possible to estimate the level of energetic consequences to bears that might occur. For example, most non-denning bears occur along the coastline and don't venture very far inland. If future development is located further inland than most bears go, it could have minimal energetic effects. Alternatively, if development or exploration were to occur close to the coast when bears are most likely to be in area, then the level of disturbance and energetic consequences could be greater. At this point, there are no concrete development plans being put forth, so it's not possible to estimate the energetic consequences to bears directly from authorizing a lease.
Brisson	Brook	Trustees for Alaska	80131	361	The draft SEIS also notes that polar bears face "increasing difficulty" due to declining sea ice cover from climate change, including more time on land, higher activity levels while ashore, longer swimming distances, unusual predation behavior (including cannibalism) and increased human-bear interaction.(1006) It is undisputed that increased travel distances could negatively affect denning success and ultimately the population size of polar bears, but the draft SEIS does not offer any analysis of the consequences of these impacts, in conjunction with future exploration and development on the Coastal Plain, on polar bear populations. (1006) DSEIS at 3-242-3-243.	Because this is a leasing SEIS, there is no corresponding information related to what would happen on the ground if leases were acquired. Because this information would be required to understand any potential energetic effects to maternal polar bears, it is not possible to estimate energetic costs associated with disturbance. However, large areas of the coast have protections included in the SEIS for polar bears during summer along the coastline which should minimize disturbance. During a recent study, even very high levels of disturbance from low-flying helicopters and aircraft only lead to short-term behavioral responses (Quigley et al. 2024). Because of the short duration of these responses, it is unlikely that they would result in a substantial increase in energetic expenditure to bears, especially given that most bears concentrate their onshore summer distribution around Kaktovik and Cross Island, which are not within the area where leasing could occur (Wilson et al. 2017).
Brisson	Brook	Trustees for Alaska	80131	362	While it acknowledges the additive distance that SBS bears will need to travel from sea ice to denning habitat, the draft SEIS does not estimate the actual energetic loss or nutritional stress that polar bears will have to overcome nor assign any expected additive mortality due to this dynamic. The draft SEIS thus understates the likely consequences for SBS bears.	There is currently a lack of knowledge of body mass of bears when SBS bears arrive on shore which is required to understand the energetic consequences of increased land use (Amstrup and Bitz 2023) and thus for potential disturbance disturbances resulting from the SEIS. Additionally, a large proportion of the onshore population of SBS bears use subsistence bowhead whale remains and there is similarly no current information to inform how much energy those bears receive from that source of food that could offset any additional cost incurred from swimming to shore.
Brisson	Brook	Trustees for Alaska	80131	363	In addition to cumulative impacts from climate change, polar bears in the SBS population face cumulative impacts from a wide range of industrial activities, including onshore and offshore oil and gas development and increased shipping. BLM and FWS failed to identify and assess the many ongoing and reasonably foreseeable oil and gas activities that will affect polar bears, including increased onshore oil development in the Reserve, including the future satellite pad at Willow and further westward development enabled by Willow. BLM and FWS also failed to fully consider impacts from increasing development on state lands adjacent to the Reserve, such as development of the Liberty offshore island in the Beaufort Sea.	Cumulative effects to polar bears, including offshore developments on the North Slope, are described in Section 3.3.5, Marine Mammals - Cumulative Impacts. The projects considered in the cumulative effects analysis are described in the SEIS Appendix G: Approach to the Environmental Analysis, Section G.3, Cumulative Impacts.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	364	Critically, BLM and FWS entirely fail to consider the impacts of the 20-year right-of-way (ROW) sought by the Kaktovik Iñupiat Corporation (KIC) across the Coastal Plain under Alaska National Interest Lands Conservation Act (ANILCA) Section 1110(b) to connect the community with the snow and ice road system on state lands to the west.(1009) While the agencies include the KIC ROW in its list of reasonably foreseeable future actions in Appendix F, it does not include any analysis of how the proposal will cumulatively impact polar bears in conjunction with leasing and potential future development of the Refuge.(1010) KIC's map of the proposed route indicates that its seeks a ROW across the western and central denning hotspots, and KIC proposes to use this road in the winter. BLM and FWS also state that they cannot preclude such a road passing through NSO areas.(1011) Given the fact that polar bears den in the Arctic Refuge in higher concentrations than other onshore areas on the North Slope, any impacts to polar bears associated with this proposal must be fully analyzed as a cumulative effect in the final SEIS. (1009) Kaktovik Iñupiat Corporation's Application for the Marsh Creek East 3D Seismic Program: https://www.fws.gov/project/arctic-refuge-decisions-and-nepa-processes . (1010) DSEIS App. F at F-10. (1011) DSEIS at 3-271 ("In areas subject to NSO, new land uses would be precluded, except where ANILCA allowances would allow construction such as roads allowed under 1110(b).").	The proposed Kaktovik Iñupiat Corporation (KIC) right-of-way for a seasonal snow trail has been added to the cumulative effects discussion in SEIS Section 3.3.5, Marine Mammals - Cumulative Impacts.
Brisson	Brook	Trustees for Alaska	80131	365	BLM and FWS are obligated under NEPA to analyze appropriate mitigation measures to reduce impacts to polar bears. It fails to do so. Throughout its analysis, the agencies improperly rely on conclusory statements about Incidental Take Regulations (ITRs) mitigating impacts to polar bears.(1012) (1012) See e.g., DSEIS at 3-251 (explaining disturbance to denning females with cubs could cause major to moderate impacts where dens are undetected in advance of activities, but concluding the ITR process "would be required to reduce those impacts to negligible levels").	The SEIS uses lease stipulations and required operating procedures (ROPs) to help mitigate potential impacts to polar bears and their habitat. Lease stipulations and ROPs that would help mitigate impacts are described in SEIS Section 2.3.5, Lease Stipulations and Required Operating Procedures), including lease stipulations 4, 5, and 9, and ROPs 1, 2, 4, 10, and 15.
Brisson	Brook	Trustees for Alaska	80131	366	For instance, the draft SEIS states: New ITRs to the program area, if promulgated, would be the principal mechanism to address [cumulative] potential impacts, such as possible mortality or injury from 3D seismic exploration, marine oil spills, and lethal takes around program facilities and activities. That would be in addition to the effects on polar bear movements, energy budgets, and denning behavior from the increased presence of human infrastructure and activities in coastal habitats currently not subject to industrial activities.(1013) (1013) DSEIS at 3-267. The agency assumes such ITRs would be promulgated for this leasing program but does not explain its assumptions for what specific mitigation measures it believes will be in place at which phase of oil and gas activities or how those measures would reduce all foreseeable impacts to negligible. And as Dr. Whiteman explains, existing ITRs for oil fields west of the Coastal Plain are not instructive because the effectiveness of ITRs in those areas is not quantified or described, leaving it impossible to ascertain what "effective mitigation" means in terms of bear behavior, health, survival, or reproduction. Further, the geographic differences are significant, since bears on the Coastal Plain den on the mainland, where oil and gas activities are completed; but the majority of polar bear dens to the west den on barrier islands (Patil et al. 2022).(1014) (1014) Whiteman DSEIS Comments at 9-10.	In response to various comments, portions of the Final SEIS discussing the ITR/LOA process and the potential influence of MMPA ITAs on impacts to polar bears have been revised for clarity and precision. The agencies maintain that information concerning other, similar North Slope oil and gas activities, including monitoring reports submitted pursuant to past MMPA ITAs, enhances our understanding of potential impacts to SBS polar bears from Program-related activities. As noted in a separate comment response, it is premature to assume which mitigation measures will be prescribed in any MMPA ITAs for specific Program-related activities in the future.
Brisson	Brook	Trustees for Alaska	80131	367	The draft SEIS relies on a buffer zone around known dens to mitigate noise disturbance and other impacts from seismic, but as explained above, such a buffer is ineffective if den-detection surveys are not mandated in the first place.(1019) Since dens are not visible to the naked eye, it is unclear what "appropriate tools" would be used to detect a den prior to disturbing it absent a den-detection survey using FLIR.(1020) Further, even when pre-activity den-detection surveys are conducted, such a buffer will fail to protect dens that remain undetected due to the high failure rate of the den-detection method employed. (1019) See March 2019 Amstrup Letter at 22 (explaining that dens are not visible due to overlying snow and must be located using forward looking infrared camera surveys (FLIR) to detect heat); id. at 26 (explaining that polar bears do not return to the same exact den location from year to year). (1020) See March 2019 Amstrup Letter at 22, 26.	Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.
Brisson	Brook	Trustees for Alaska	80131	369	There are a number of methods of infrared surveys which could be theoretically captured by this mitigation measure, but which would be ineffective at preventing impacts to denning bears. Assuming BLM and FWS's ROP refers to aerial FLIR, in its most recent ITR for onshore oil and gas activities on the North Slope, FWS assumed that this den detection technology would detect 41% of dens.(1022) The draft SEIS assumes 25-54% of dens would be detected.(1023) But as explained by Dr. Whiteman, this is an overestimate, and the likely detection rate is much lower - at best, within the range of 15-45%, based on the findings in Woodruff.(1024) Even assuming that den detection methods could successfully locate dens at least half the time, this means that nearly half of the bears denning within the areas open to seismic surveys will be exposed to disturbance at proximities that in the past caused mothers to open their dens.(1025) Those disturbances will bring energetic costs and may also lead to lethal results.(1026) (1022) 86 Fed. Reg. 42982, 43030 (Aug. 5, 2021). (1023) DSEIS at 3-249. (1024) Whiteman DSEIS Comments at 4-5. (1025) March 2019 Amstrup Letter at 13 (anticipating at least 50% failure rate for den detection); id. (explaining that vehicles passing 65 meters from den caused premature opening in past); id. at 14 (calculating that if there were 15 undetected dens, on average at least 13 of them would be within 65 meters of vehicle passage). (1026) Id. at 14-15 (describing latent lethal consequences for cubs due to disturbance).	Until better methods are developed, FLIR represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. The Draft SEIS states that FLIR does not provide perfect detection. The best available data indicate a range of detectability from 24 percent to 54 percent, depending on the experience of the crew, the number of surveys flown, the prevailing weather conditions at the time of the survey(s), and seasonal timing and snow depth (Wilson and Durner 2020; Smith et al. 2020; Woodruff et al. 2022b). Smith et al. 2020 summarized single industry-led, fixed-wing aircraft FLIR survey of real polar bear dens and recorded a 45% detection rate with flight crews naïve to the presence of, or location of, dens. Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	370	Despite the foregoing, BLM and FWS largely brush off the effects of noise, vibration, human presence and other disturbance to polar bears produced by seismic exploration activities. BLM and FWS assume effective mitigation will be implemented via ITRs that do not currently exist. The agencies cannot assume that such measures are wholly effective given recent research demonstrating the shortcomings of these surveys. FLIR surveys, while more effective at detecting polar bear dens than visual observations, cannot identify all of them. As described by Dr. Whiteman, research suggests that a 15-45% detection rate is probably close to the highest that could reasonably be expected from FLIR surveys, and 15% is the most realistic rate for any given survey. (1027) Additionally, locating dens on the Arctic Refuge Coastal Plain is even more complex than in other parts of Alaska's Arctic slope. This is because "den concentration areas" are typical in some other Arctic regions and can be protected with restrictions on industrial and other human activities. However, snow accumulation sufficient for denning in the Coastal Plain occurs mainly in narrow linear features following drainage courses, lake shores and coastal banks. These features and their associated denning habitat are so abundant that they can be considered essentially uniform on the Coastal Plain.(1028) This means that FLIR surveys are likely to be even less effective when applied in the Coastal Plain than other parts of Alaska.(1029) (1027) Whiteman DSEIS Comments at 4-5. (1028) See March 2019 Amstrup Letter at 14. (1029) Id. at 23.	The SEIS includes protections for polar bears and their habitat in leasing stipulations and required operating procedures (see Section 2.3.5, Lease Stipulations and Required Operating Procedures), specifically lease stipulations 4, 5, and 9, and ROPs 1, 2, 4, 10, and 15. Lease stipulation 5 in Alternative D has been revised to increase protections for polar bear denning habitat and takes into account the linear features. The stipulation prohibits leasing (and seismic surveys) from the coast to 1 mile inland along the coastline along the Canning/Stains rivers and in the Camden Bay area, protecting 20,400 acres of maternal denning habitat. From the coastline to 5 miles inland, no permanent oil and gas infrastructure would be permitted within 1 mile of potential polar bear denning habitat on the Canning/Staines River, Niguanak River, Katakturuk River, Marsh Creek, Carter Creek, and Sadlerochit River, and all associated tributaries. Timing limitations prevent oil and gas activities from the coastline to 2 miles inland (and up to 5 miles inland along the Niguanak River, Katakturuk River, Marsh Creek, Carter Creek, Canning/Staines and Sadlerochit River) in winter (between October 30 and April 30 of any year). Any proposed project with on-the-ground activity (e.g., seismic surveys, exploration activity, construction, operations) would be subject to project-specific environmental review (NEPA) and permitting (ESA Section 7 consultations), where additional protective restrictions may be required to receive authorization.
Brisson	Brook	Trustees for Alaska	80131	371	BLM and FWS nonetheless state that aerial FLIR has "proven to be an effective means" of locating dens across large area."(1030) "Using airborne FLIR, the best available data indicate a range of detectability from 24 percent to 54 percent, depending on the experience of the crew, the number of surveys flown, the weather conditions prevailing at the time of the surveys, and seasonal timing and snow depth (Wilson and Durner 2020; Smith et al. 2020; Woodruff et al. 2022b)."(1031) But BLM and FWS then go on to acknowledge that some occupied dens are likely to be missed even under good conditions, and that fox dens could be mistaken for polar bear dens.(1032) Exposing half to three-quarters of the maternal dens within a proposed seismic survey area to disturbance and potential crushing cannot be considered an "effective means" of locating dens and protecting denning bears. BLM and FWS estimate that 14 maternal dens may occur annually across the program area, of which 6 to 11 may go undetected.(1033) As described by Dr. Whiteman, using the range of 0.15 - 0.45, this should state that 8 to 12 occupied dens may go undetected. (1034) The agencies also acknowledge that seismic exploration vehicles may pass within 165 to 660 feet of all dens in the program area, leading female bears to abandon dens prematurely.(1035) BLM and FWS acknowledge this could cause "moderate to major direct impacts on the SBS population of bears if they abandon those dens prematurely (i.e., before 15 March) and the cubs die."(1036) Given the imperiled state of SBS polar bears, seismic exploration occurring with no restrictions in the western hotspot could have lethal impacts to denning cubs and their mothers posing potentially population-level effects. The draft SEIS must grapple with this reality and assess measures to avoid such impacts. (1030) DSEIS at 3-249. (1031) Id. at 3-249. (1032) Id. (1033) Id. (1034) Whiteman DSEIS Comments at 5. (1035) I Id. at 3-249. (1036) DSEIS at 3-255 to 3-256.	Lease stipulation 5 in Alternative D has been revised to increase protections for polar bear denning habitat. The stipulation prohibits leasing (and seismic surveys) from the coast to 1 mile inland along the coastline along the Canning/Stains rivers and in the Camden Bay area. This stipulation now protects 20,400 acres of maternal denning habitat. From the coastline to 5 miles inland, no permanent oil and gas infrastructure would be permitted within 1 mile of potential polar bear denning habitat on the Canning/Staines River, Niguanak River, Katakturuk River, Marsh Creek, Carter Creek, and Sadlerochit River, and all associated tributaries. Timing limitations prevent oil and gas activities from the coastline to 2 miles inland (and up to 5 miles inland along the Niguanak River, Katakturuk River, Marsh Creek, Carter Creek, Canning/Staines and Sadlerochit River) in winter (between October 30 and April 30 of any year). Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	372	The draft SEIS also relies on a recent study, Woodruff 2022, which provides information on the "maximum possible detection probability if all dens were available to be detected by AIR surveys" but does not account for those dens which may be undetectable.(1037) Accordingly, the researchers note that it informs the "upper bound on how high detection could be."(1038) It is notable that only 7 of the 14 dens were detected after four AIR surveys by one crew, and seven of the dens in the study were never detected in any survey.(1039) Importantly, the researchers conducted the survey in favorable weather conditions, pausing the surveys if the weather deteriorated and re-starting them when the weather conditions improved.(1040) As Dr. Whiteman explains, the study involved multiple subSEIS of data based on different approaches to AIR surveys. (1041) Subset 1 "was the most similar to industry AIR surveys as we used all available detection/nondetection data."(1042) For this subset, the estimated den detection probability was 0.15 with a confidence interval of 0.08 to 0.23, a result that is omitted from DSEIS despite being the most realistic and relevant result from the study.(1043) (1037) Susannah P. Woodruff and Ryan R. Wilson, Evaluating the efficacy of aerial infrared sensors to detect artificial polar bear dens, 46(3) WILDLIFE e1324 (2022) [hereinafter Woodruff and Wilson]. (1038) Id. (1039) Id. at 6; see also Memorandum from Trent McDonald, Ph.D., McDonald Data Sciences LLC to Karimah Schoenhut, Sierra Club, and Bridget Psarianos, Trustees for Alaska at 5-6 (July 1, 2021) (explaining that, based on these results, there are likely "easy" and "hard" to detect dens, but that FWS treated dens as all equally detectable in the ITR modeling) [hereinafter McDonald Memo 2021]. (1040) Woodruff and Wilson at 6-7. (1041) Whiteman DSEIS Comments at 3. (1042) Id., quoting Woodruff et al. (2022). (1043) Id.	Until better methods are developed, FLIR represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. The Draft SEIS states that FLIR does not provide perfect detection. The best available data indicate a range of detectability from 24 percent to 54 percent, depending on the experience of the crew, the number of surveys flown, the prevailing weather conditions at the time of the survey(s), and seasonal timing and snow depth (Wilson and Durner 2020; Smith et al. 2020; Woodruff et al. 2022b). Smith et al. 2020 summarized single industry-led, fixed-wing aircraft FLIR survey of real polar bear dens and recorded a 45% detection rate with flight crews naïve to the presence of, or location of, dens. The Woodruff study built and surveyed artificial dens to estimate detection probabilities. The study design required deviating from industry AIR methods by reducing pilot and observer situational awareness and not incorporating terrain imagery in navigational software to aid in directing the aircraft (Woodruff et al. 2022). In their discussion, the authors acknowledged that these adjustments may have contributed to low detections, which is why the SEIS reports a range of detection probabilities that best approximates surveys of actual polar bear dens (e.g., Smith et al. 2020).
Brisson	Brook	Trustees for Alaska	80131	373	Additionally, while this study concluded that there was not a correlation between den detection and the snow depth of the den cover, the researchers appear to have not actually measured the snow depth of the den covers at the time that the FLIR surveys were conducted.(1044) Den cover depth may change over the course of the denning period as weather and wind affect snow distribution. Therefore, the study's conclusion regarding snow depth and den detection is questionable. Regardless, the researchers conclude that AIR surveys are unlikely to detect dens and that additional methods should be used to reduce impacts to polar bears from industry activities.(1045) Given this study's results regarding den detection and that the results inform the question of the upper limit of den detection, FWS should not have treated all dens as equally detectable.(1046) Also, by averaging the results from this research in the den detection rates modeled with other studies, such as Wilson and Durner, BLM and FWS failed to account for the fact that the study intended to address the upper limits of detection. Both of these issues mean that BLM and FWS overestimate the efficacy of AIR/FLIR surveys to detect dens, which is probably closer to 15-45%, as described above. (1044) Id. at 5-6, 7. (1045) Id. at 8-9. (1046) McDonald Memo 2021 at 5-6.	Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.
Brisson	Brook	Trustees for Alaska	80131	374	These shortcomings will be made even worse if FLIR surveys are attempted during poor weather and visibility. Theoretically, FLIR detection should be most effective in early winter when snow cover over dens is minimal, as FWS acknowledged in the 2021-2026 Beaufort Sea ITR.(1047) However, FLIR detection is also fickle, and its accuracy may change as a result of airborne moisture including precipitation, fog, and clouds limiting FLIR effectiveness. Changing Arctic weather conditions further limit the utility of FLIR as a den detection and protection tool. BLM and FWS must include a requirement that FLIR surveys be conducted during optimal weather conditions for den detection, i.e., by setting a "floor" for visibility and wind conditions below which FLIR surveys for purposes of meeting MMPA requirements cannot be conducted.(1048) (1047) See 86 Fed. Reg. at 43,072. (1048) Steven C. Amstrup, PhD Chief Scientist, Polar Bears International, Letter re: Marine Mammal Protection Act 5-year Incidental Take Regulations (June 30, 2021) [hereinafter 2021 Amstrup ITR Letter] at ¶ 64.	Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detection requirements.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	375	There are also clear limitations on den detection success with the use of hand-held FLIR.(1052) A recent 2020 study found that the ability to detect artificial dens with ground-level FLIR was only one-fourth that of aerial FLIR, even when the exact location of the den was known.(1053) This study demonstrates the limited efficacy of ground based FLIR for surveying. Given the known limitations on aerial FLIR, this means that expected effectiveness of hand-held FLIR would be in the range of 11%.(1054) This is only when the exact location of the den was known, meaning that using hand-held FLIR to search broad expanses of habitat for dens is impractical. It is one thing to detect whether a heat source is "still there" when it has already been detected, but totally another to try to use that tool to go out into an area to scan for dens. As such, ground based FLIR is of limited value in a search context. Because ground-based detection capability is only one-fourth as effective as aerial surveys, and the effectiveness of aerial surveys is already low, BLM and FWS should be clear that any such infrared surveys must be aerial surveys. (1052) See Robinson et al., Factors Influencing the Efficacy of Forward-Looking Infrared in Polar Bear Den Detection 64(8) BIOSCIENCE 735 (2014) (dens with more than 90 cm of snow cover not detectable; describing weather effects on handheld FLIR detection success); Richard T. Shideler, Grizzly Bear Use of the North Slope Oil Fields and Surrounding Region, Div. of Wildlife Conservation, Alaska Dep't of Fish & Game, Federal Aid Annual Research Performance Report (2014) (reporting that handheld infrared only detected 56 percent of dens surveyed); Smith et al., Post-Den Emergence Behavior of Polar Bears (Ursus Maritimus) in Northern Alaska, 60(2) ARCTIC 187 (2007) (describing 45 percent success rate of aerial FLIR surveys studied). (1053) Pedersen et al., Effects of Environmental Conditions on the Use of Forward Looking Infrared for Bear Den Detection in the Alaska Arctic, 2(7) CONSERVATION SCIENCE & PRACTICE e215 (2020) (explaining that hand-held FLIR is useful for verifying previously detected dens but is of little value for first discovery), available at https://conbio.onlinelibrary.wiley.com/doi/pdf/10.1111/csp2.215 . (1054) 2021 Amstrup ITR Letter at ¶ 76.	Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements.
Brisson	Brook	Trustees for Alaska	80131	376	Also, ROP 4 says the lessee/operator/contractor "would prepare and implement bear-interaction plans to minimize conflicts between bears and humans. These bear interaction plans would be developed in consultation with Tribal Governments and the community of Kaktovik and approved by the BLM and USFWS." ROP 4 goes on to cite the 2021-2026 ITR requirements and notes that Coastal Plain plan may include similar measures, and points to a general list of items that must be included such as a waste management plan, but does not identify the specific measures, leaving them unexamined for efficacy. The final SEIS should identify the specific measures, and an actual evaluation of the impacts to polar bears from these interactions while considering these measures' efficacy.	Proposals received in the future would require the development of a human/bear interaction plan to address the specific planned activity prior to the activity commencing. Past experience from North Slope operators informs current and new plans and mitigation measures.
Brisson	Brook	Trustees for Alaska	80131	556	The statement includes several Alternatives, of which D offers the most protection for polar bears. However, there are major flaws in Alternative D which would allow substantial disturbance of polar bears and likely increase their mortality rates. A key issue is that oil and gas activities would only avoid maternal dens beneath the snow, where polar bears give birth and nurse their cubs during the vulnerable first months of life, if those dens are detected by airborne infrared sensors. The statement as currently written expects detectability of 0.25 - 0.54, meaning that the majority of dens would not be identified. This range also overestimates the accuracy of the technology, as the best available science indicates a detectability of 0.15. The activity that would be allowed under this leasing program would thus be expected to subject most or nearly all maternal polar bear dens in the project area to extreme disturbances (e.g., seismic vehicle activity, pile-driving, gravel blasting) at potentially very close distances, including directly overhead. Because of this disturbance, and the other issues addressed in my comments, the leasing program as described in this statement is incompatible with the protections required for polar bears, even under the proposed Alternative D.	The SEIS uses lease stipulations and required operating procedures (ROPs) to help mitigate potential impacts to polar bears and their habitat. Lease stipulations and ROPs that would help mitigate impacts are described in Draft SEIS Section 2.3.5, Lease Stipulations and Required Operating Procedures), including lease stipulations 4, 5, and 9, and ROPs 1, 2, 4, 10, and 15. Lease stipulation 5 in Alternative D has been revised to increase protections for polar bear denning habitat. The stipulation prohibits leasing (and seismic surveys) from the coast to 1 mile inland along the coastline along the Canning/Stains rivers and in the Camden Bay area. This stipulation now protects 20,400 acres of maternal denning habitat. Until better methods are developed, FLIR represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. The Draft SEIS states that FLIR does not provide perfect detection. The best available data indicate a range of detectability from 24 percent to 54 percent, depending on the experience of the crew, the number of surveys flown, the prevailing weather conditions at the time of the survey(s), and seasonal timing and snow depth (Wilson and Durner 2020; Smith et al. 2020; Woodruff et al. 2022b). Smith et al. 2020 summarized single industry-led, fixed-wing aircraft FLIR survey of real polar bear dens and recorded a 45% detection rate with flight crews naïve to the presence of, or location of, dens.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	557	The ability to remotely detect polar bear dens beneath the snow is incorrectly reported. The best current estimate is 0.15, and the potential maximum is 0.24. Detection of unknown polar bear dens, in advance of seismic exploration and other oil and gas activities, is critically important for reducing impacts. This is noted on page 3-250 of the statement: "If dens go undetected, however, then they are likely to be disturbed by seismic exploration. Such disturbance would be short term (during the denning period) but widespread, with potentially grave consequences...". In the statement, it is estimated that 0.24 - 0.54 of dens will be detected with airborne infrared radar (AIR; page 3-249). This range is an incorrect interpretation of available data. Four key studies are cited in the statement regarding maternal den detection beneath the snow as a thermal hotspot.	Until better methods are developed, FLIR represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. The Draft SEIS states that FLIR does not provide perfect detection. The best available data indicate a range of detectability from 24 percent to 54 percent, depending on the experience of the crew, the number of surveys flown, the prevailing weather conditions at the time of the survey(s), and seasonal timing and snow depth (Wilson and Durner 2020; Smith et al. 2020; Woodruff et al. 2022b). Smith et al. 2020 summarized single industry-led, fixed-wing aircraft FLIR survey of real polar bear dens and recorded a 45% detection rate with flight crews naïve to the presence of, or location of, dens.
Brisson	Brook	Trustees for Alaska	80131	558	The first key study, Amstrup et al. (2004), included multiple targeted surveys of known den sites to maximize detection. Of the 23 known den sites, four (0.17) were never detected, ten (0.43) were detected on some of the survey attempts (2 - 7 surveys at each den; success of 0.28 - 0.83), and nine (0.39) were detected on every survey. These data clearly demonstrated that den detection is possible with AIR, but also that the effectiveness in discovering unknown dens would vary widely based on weather conditions and other variables. Amstrup et al. (2004) thus created the question of how effective AIR would be in searches for unknown dens by industry.	The range of detection probabilities cited in the SEIS includes some of the values from Amstrup et al. 2004 but does not include the highest values precisely because they are outside the range of values estimated using survey protocols consistent with current industry FLIR surveys mandated by existing ITRs (e.g., Smith et al.2020, Woodruff et al. 2022).
Brisson	Brook	Trustees for Alaska	80131	559	The second key study, Wilson and Durner (2020), did not collect new data regarding den detection, but instead simulated potential success based on Amstrup et al. (2004). Although Wilson and Durner (2020) did not report a detectability across their entire simulated dataset, a 2021 Incidental Take Regulation (ITR) used their simulation to infer an overall detectability of 0.54 (USFWS 2021). However, Wilson and Durner (2020) assumed that dens beneath > 100 cm of snow were not detectable, whereas this threshold has been experimentally quantified to be 90 cm (Robinson et al. 2014). It is unclear why Wilson and Durner (2020) used a 100 cm threshold.	Until better methods are developed, FLIR represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. Although there is uncertainty around the average depth of snow over polar bear dens in the Refuge, the SEIS uses the best available information to determine uncertainties in den detection with FLIR. There is likely a functional relationship between snow depth and detection with FLIR (not a threshold), but that relationship has not yet been determined. Wilson and Durner 2020 used a cutoff of 100 cm based on results from Amstrup et al. 2004 and then further restricted the dataset to account for surveys conducted in darkness (as is required for aerial FLIR surveys of polar bear dens). They then applied a Bayesian model to develop a more accurate detection probability. The variation in depth of snow above actual den chambers (+/- 87 cm, Durner et al. 2003) far exceeds the 10 cm difference mentioned in the comment. The design of this simulation incorporates uncertainty in the average depth of snow above the chamber of the dens and uncertainty in detection probabilities within the 1,000 iterations of the model.
Brisson	Brook	Trustees for Alaska	80131	560	The third key study (Smith et al. 2020) attempted to answer the question of practical efficacy by combining archived data of known den sites with AIR survey results collected by industry for the purpose of detecting dens during 2004 - 2016. Of 33 known dens, 15 were detected (0.45). The relatively low success rate was speculated to be the result of surveys conducted in non-ideal conditions and technological limits of AIR, especially an inability to detect dens beneath deep snow. A constraint is that this study was limited to areas of spatial overlap between the occurrence of known dens and industry surveys. This limitation led to inclusion of only 33 of the likely ~816 dens on land during that timeframe (12 years × ~68 terrestrial dens per year [Patil et al. 2022]), or ~4%. It is unknown if focusing on this small subset of dens introduced any unintended bias, such as dens that were easier to detect.	Smith et al. 2020 summarized single industry-led, fixed-wing aircraft FLIR survey of real polar bear dens and recorded a 45% detection rate with flight crews naïve to the presence of, or location of, dens. It is one of several sources used to support the range of detection probabilities presented in the SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	561	Finally, the fourth key study, Woodruff et al. (2022), experimentally replicated industry surveys with a set of known artificial dens and control sites. The dens were similar in physical size and heat properties to real dens, and the control sites lacked dens but had snow disturbance similar to that caused by artificial den construction. Researchers conducted survey flights with aircraft, pilots, and sensors used by industry for den surveys. The observers and operators of the AIR equipment were agency or industry employees who were responsible for AIR surveys for dens in the study area. The flights followed the same environmental guidelines and restrictions that are used by industry to selectively fly during the best possible conditions for successful den detection. Flights differed from industry surveys in some ways, such as steps taken during the flight to reduce observer spatial awareness that could bias the results (e.g., disabling some electronic guidance features). However, the realism of most aspects of the surveys, and the use of a controlled, experimental approach, indicates that this is the best available detectability dataset. Woodruff et al. (2022) analyzed their AIR data in three subSEIS, defined by what were considered "non-detected dens". In Subset 1, non-detected dens were those which were flown over but for which either a) AIR did not detect a hotspot, or b) AIR detected a hotspot that was overlooked by observers during the flight and during post-flight review of imagery. For this subset, the estimated den detection probability during a single survey was 0.15 with a credible interval of 0.08 to 0.23, a result that is omitted from the statement - yet this is the most realistic and relevant result from the study. As Woodruff et al. (2022) concluded, Subset 1 "was the most similar to industry AIR surveys as we used all available detection/nondetection data".	The Woodruff study built and surveyed artificial dens to estimate detection probabilities. The study design required deviating from industry AIR methods by reducing pilot and observer situational awareness and not incorporating terrain imagery in navigational software to aid in directing the aircraft (Woodruff et al. 2022). In their discussion, the authors acknowledged that these adjustments may have contributed to low detections, which is why the SEIS reports a range of detection probabilities that best approximates surveys of actual polar bear dens (e.g., Smith et al. 2020).
Brisson	Brook	Trustees for Alaska	80131	562	To create Subset 2 of the data, after the search for dens had concluded, survey imagery of the known locations of artificial dens was reviewed. For each den, if the imagery was deemed to be of inadequate quality to allow den detection, the den was removed from analysis. The resulting estimated detection probability during a single survey (0.24, credible interval of 0.13 - 0.37) represents a best-case scenario, as stated by Woodruff et al. (2022): "Results from subset 2 provide an estimate of the maximum detection probability when visibility and survey effort are optimal." However, it is not clear how industry could replicate this optimal scenario. Creating the subset of data to achieve this result required removing poor-quality imagery of known den locations. By definition, industry surveys seek to locate unknown dens and thus this quality-control step would be impossible.	The Woodruff study built and surveyed artificial dens to estimate detection probabilities. The study design required deviating from industry AIR methods by reducing pilot and observer situational awareness and not incorporating terrain imagery in navigational software to aid in directing the aircraft (Woodruff et al. 2022). In their discussion, the authors acknowledged that these adjustments may have contributed to low detections, which is why the SEIS reports a range of detection probabilities that best approximates surveys of actual polar bear dens (e.g., Smith et al. 2020).
Brisson	Brook	Trustees for Alaska	80131	563	To create Subset 3 of the data, post-survey quality-control also included removing known dens for which AIR did not detect a hotspot, resulting in a detectability of 0.41 during a single survey. In other words, Subset 3 reflected the assumption that AIR was perfect at detecting dens via hotspots, and that the only source of potential error was observers overlooking the hotspots. This approach cannot be replicated by industry because this study itself demonstrates that not every den produces a hotspot in AIR. As stated by Woodruff et al. (2022), the result for this data subset "does not account for undetected dens", which is the purpose of industry surveys. This result is useful for technical context but not for predicting survey results in practice.	Woodruff et al (2022b) estimate of 0.41 from their Subset 3 is not used in the SEIS. The estimate from their Subset 2 (Woodruff et al. 2020b) of 0.24 is used as a minimum detection probability. They state that Subset 2 "most closely resembled den surveys flown for oil and gas industry."
Brisson	Brook	Trustees for Alaska	80131	564	An additional consideration in Woodruff et al. (2022) is the depth of snow covering dens. Their study area was west of the project area, in a region that contains fewer topographical features that can trap snow and create deep drifts, as described by (Sturm et al. 2019): "...the strong winter winds typical of the region continually move new and recently deposited snow, eroding the snow from exposed locations and piling it in sheltered areas. This process creates linked scour and drift zones, each of which might cover hundreds to thousands of hectares (several square miles), with drifts in excess of 8 m thickness running for many kilometers along the bluffs and cut-banks that line these northern rivers. These processes are more extreme in the 1002 area than farther to the west."	There is likely a functional relationship between snow depth and detection with FLIR (not a threshold), but that relationship has not yet been determined. Woodruff et al (2022) evaluated the efficacy of FLIR using artificial dens created with a certain depth of snow to determine detection probabilities. They were able to detect a den with snow over thickness of 145 cm and did not detect a den with 66 cm thickness, illustrating the uncertainty in the relationship between snow cover and detection. Although there is uncertainty around the average depth of snow over polar bear dens in the Refuge, the SEIS uses the best available information to determine uncertainties in den detection with FLIR. Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	565	Given the greater abundance of deeper snow drifts in the project area than in the study region of Woodruff et al. (2022), their reported den detection may have been better than they would have achieved in the project area. It is also important to note that Woodruff et al. (2022) reported detection of a den beneath 145 cm of snow, which would call into question the 90 cm threshold shown by experiments in Robinson et al. (2014). However, the 145 cm measurement was taken at the time of den construction, December 2nd-5th 2019. The first den detection in the study occurred later, on December 16th. This sequence left 9 days of strong winds between den construction and detection (December 6th-15th), including a 25-hour period during which hourly wind speeds remained > 48 km per hour (30 mph; Table 1). Table 1. Wind speeds(a) near the study area of Woodruff et al. (2022), between the dates of artificial den construction and first den detection. Day of December 2019 Max. hourly wind speed(b) km per hour miles per hour 6 23 14 7 47 29 8 42 26 9(c) 69 43 10(c) 61 38 11 24 15 12 13 8 13 14 9 14 24 15 15 23 14 16 51 32 (a) Data from Deadhorse Airport weather station (www.wunderground.com/history) (b) Stronger periodic gusts recorded on some days (c) Hourly wind speed continuously > 48 kph (30 mph) for 25 hours during Dec. 9th-10th	The 145 cm detection reported by Woodruff et al. (2022) is not used in the SEIS. The SEIS relies on the estimate derived by Wilson and Durner (2020) who used data from Amstrup et al. 2004 with additional restrictions to generate an imputed dataset that was then used in a Bayesian framework to estimate the probability that a den was detected during a single survey, given that it had a den wall <100 cm thick. The <100cm cut-off was determined by Robinson et al. (2014) who observed that dens with snow depth >100 cm were not detectable with handheld FLIR devices, which have ~1/4 the detection capability of airborne sensors.
Brisson	Brook	Trustees for Alaska	80131	566	It is highly likely that wind action on the snow surface during those 9 days between den construction and detection altered the depth of snow that had previously been measured at 145 cm. Woodruff et al. (2022) acknowledged this possibility and excluded from their depth-effect analysis the surveys that were completed much later after den construction. However, it remains the case that their modeling of snow depth and den detection contains unknown and potentially substantial measurement error. In contrast, Robinson et al. (2014) measured snow thickness every time that they recorded infrared imagery, indicating that their modeling and the associated 90 cm threshold for detection is more likely to be realistic.	The 145 cm detection reported by Woodruff et al. (2022) is not used in the SEIS. The SEIS relies on the estimate derived by Wilson and Durner (2020) who used data from Amstrup et al. 2004 with additional restrictions to generate an imputed dataset that was then used in a Bayesian framework to estimate the probability that a den was detected during a single survey, given that it had a den wall <100 cm thick. The <100cm cut-off was determined by Robinson et al. (2014) who observed that dens with snow depth >100 cm were not detectable with handheld FLIR devices, which have ~1/4 the detection capability of airborne sensors.
Brisson	Brook	Trustees for Alaska	80131	567	Overall, the controlled experimental approach by Woodruff et al. (2022) provides the best currently available point estimate of detectability: 0.15 with a maximum of 0.24 in optimal conditions. The retrospective estimate of 0.45 from Smith et al. (2020) provides an alternative maximum, although this was based on detection attempts of a small subset of naturally-occurring dens with unknown potential biases. Amstrup et al. (2004) does not provide a detectability estimate that can be applied to industry practice. Wilson and Durner (2020) demonstrate that den detection is key for mitigating impacts, but their detectability estimate is based on a simulation that did not include the best available data for a snow depth threshold. Combining this information, an estimate of 0.15 with a maximum of 0.24 is most reasonable. Including a maximum of 0.45 is worthwhile because it represents archived industry data, although the caveat must be acknowledged that the dataset potentially included unknown biases.	The best available data indicate a range of detectability from 24 percent to 54 percent, depending on the experience of the crew, the number of surveys flown, the prevailing weather conditions at the time of the survey(s), and seasonal timing and snow depth (Wilson and Durner 2020; Smith et al. 2020; Woodruff et al. 2022b). The 0.15 estimate by Woodruff et al (2022) was for a subset of the data where the sites were poorly scanned.
Brisson	Brook	Trustees for Alaska	80131	568	Detection success could be improved by using multiple AIR surveys. Woodruff et al. (2022) provided the best assessment of how multiple surveys improve detectability, but their effort - six surveys - is likely beyond what industry can provide, and it resulted in a total success rate of only 0.50 with most of that success being just one detection in six attempts. These results make it clear that while multiple surveys increase detectability, this benefit does not have a simple, additive relationship to survey effort. That is, the detectability of 0.15 for a single survey does not become 0.30 with two surveys; some dens will never be detected; and some dens require far more than two surveys to be detected (i.e., dens detected only once in six attempts [Woodruff et al. 2022] or only twice in seven attempts [Amstrup et al. 2004]). Surveys are also highly likely to occur during sub-optimal conditions, limiting the benefits of repeated attempts. Wilson and Durner (2020) evaluated four years of weather conditions (2013 - 2017) in the project area during December - January, a window for detecting dens after they are established but before maximum snow depth is reached. Optimal conditions for AIR surveys, including low wind speeds and a lack of visible precipitation, only occurred for a mean of 4.4% (±3.6% SD) of the time.	Until better methods are developed, FLIR, represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. The SEIS acknowledges that FLIR does not provide perfect detection rates. The SEIS does not assume that with 2 surveys, you will double detection rates or detect all dens. But additional surveys will ultimately increase detection rates and lead to protection of more occupied dens.
Brisson	Brook	Trustees for Alaska	80131	569	Detection success could also be improved by additional ground-based efforts such as handheld and drone-mounted AIR surveys and the use of trained, scent-detecting dogs, as described in the statement (pages 2-24, 2-40, 3-249). However, these efforts cover much smaller areas than airborne surveys, and are more likely to find that AIR hotspots are false positives rather than real dens. Smith et al. (2020) reported that industry surveys during 2004 - 2016 yielded more false positives (n=19) than true dens (n=15), indicating that the majority of ground-based efforts do not contribute to den detection.	Until better methods are developed, FLIR, represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. The SEIS acknowledges that FLIR does not provide perfect detection rates. The SEIS does not assume that with 2 surveys, you will double detection rates or detect all dens. But additional surveys will ultimately increase detection rates and lead to protection of more occupied dens. Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	570	In sum, the estimated detectability of 0.15 could likely be improved with multiple surveys and ground-based efforts, but this improvement would be modest. In light of this, the estimated maximum of 0.24 remains a plausible upper bound, and this passage of the statement should be modified: "By applying the detectability rates described above to the average of 14 maternal dens estimated to occur annually in the program area (see Appendix J.4.2), 6 to 11 occupied dens may go undetected during seismic exploration of the entire program area if additional den mitigations are not applied" (page 3-249). Using the range of 0.15 - 0.24 instead, this should state that 11 to 12 occupied dens may go undetected. Using 0.45 as a maximum would lead to 8 dens being undetected.	The Draft SEIS presents a range of 6 to 11 dens that could go undetected in the entire program area. The comment recommends adjusting the number to 11 to 12 dens, very similar to the values currently in the Draft SEIS. Lease stipulation 5 in Alternative D has been revised to prohibit leasing (and seismic surveys) from the coast to 1 mile inland along the coastline along the Canning/Stains rivers and in the Camden Bay area. This stipulation now protects 20,400 acres of maternal denning habitat. With a smaller area available for leasing, the number of dens estimated in the SEIS is accurate. As this is a SEIS, no project proposals have been made to BLM that would allow site-specific analysis, thus limiting the ability to model the possible number of dens affected more precisely. Any proposed project with on-the-ground activity (e.g., seismic surveys, exploration activity, construction, operations) would be subject to project-specific environmental review (e.g., NEPA, ESA).
Brisson	Brook	Trustees for Alaska	80131	571	There is unwarranted speculation that den detection will improve in the future and thus reduce impacts. The statement includes that: "Over time, advancements in den detection technology and methodologies may increase den detection rates and thereby reduce impacts associated with 3D seismic surveys and other oil and gas operations" (page 3-257). However, the last two decades of research provides no basis for this expectation. AIR data has been collected to detect polar bear dens since at least 2004 (Amstrup et al. 2004; Smith et al. 2020) yet the most recent detectability estimate is 0.15, as described above. Instead of reflecting improvement, peer-reviewed studies have instead concluded that the detectability by AIR is too low to be a primary method for preventing polar bear disturbance: "...current and future threats to polar bears mandate development of new den location technologies with higher detection rates than possible with FLIR." (Smith et al. 2020) "Our results suggest that AIR, as it is currently used, is unlikely to detect most polar bear dens in surveyed areas." (Woodruff et al. 2022)	Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.
Brisson	Brook	Trustees for Alaska	80131	572	Furthermore, the rare windows of optimal conditions for AIR surveys (4.4% ± 3.6% SD of the time; Wilson and Durner 2020) are expected to narrow even further, reducing success: "In addition, as the Arctic has warmed airborne moisture has increased and is expected to continue to do so. Because airborne moisture significantly limits FLIR detection capabilities, finding optimal operational windows for FLIR surveys is likely to become increasingly difficult, and probabilities of den detection by FLIR may decline." (Smith et al. 2020) New research is exploring the use of airborne Synthetic Aperture Radar (SAR) for detecting polar bears, as this technology is less vulnerable to suboptimal weather conditions. However, the current state of the art for this approach yielded only a 66% success rate in identifying known polar bears that were out in the open, against a background of mostly terrestrial vegetation (George et al. 2023). SAR has not been used to attempt to identify polar bear dens, and the low success rate for targeted identification of known bears indicates that this approach remains far from improving den detection efforts.	The text has been revised "The best results are obtained by employing experienced crews to conduct multiple surveys during cold, clear, calm weather early in the denning season, when snow cover is shallower than later in the season (Amstrup et al. 2004b; Owyhee Air Research 2018; Pedersen 2019). <i>Increased air moisture in relation to climate change, may make finding optimal operation windows for FLIR surveys increasingly difficult (Smith et al. 2020)"</i>

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	573	NSO (no surface occupancy) categorization allows extensive, undocumented disturbance of denning polar bears by seismic exploration. The statement includes that: "Depending on the specific dimensions of the exploration grid, seismic vehicles would be likely to pass within 165 to 660 feet of all dens in the program area, distances at which some maternal females have been known to abandon dens prematurely..." (page 3-249). Regarding polar bear hearing of human-caused noises, the statement also includes that: "...ground-based sources have high probabilities of detection at distances =0.5 miles (Owen et al. 2021)" The distance of 0.5 miles is 2,640 feet. Combining this information, seismic activity in denning habitat during denning season will be perceived by virtually every denning bear, at distances known to cause disturbance. Disturbance can have severe outcomes. The statement includes that: "A review of disturbance at 46 polar bear dens between 1972 and 2018 determined that 67 percent of dens had outcomes (i.e., early emergence, early departure) with potentially critical consequences, and 9 percent of dens resulted in possible cub mortality (Woodruff et al. 2022a)." Polar bear cubs are negatively affected by early den emergence or departure, as acknowledged in the statement (page 3-248). For example, in the Southern Beaufort Sea and the adjoining subpopulation (Chukchi Sea), of the females that remained in their maternal dens for > 100 days, 78% were later observed with new cubs. In contrast, of the females that were in their dens for < 100 days, only 44% were later observed with cubs (Rode et al. 2018).	The Final SEIS includes a revision to lease stipulation 5 under Alternative D2 that would decrease the seismic exploration in polar bear denning habitat. Under Alternative D2, lease stipulation 5 would prohibit leasing from the coast to 1 mile inland along the coastline of the critical denning habitat near the Canning/Staines River and in Camden Bay, in addition to an NSO limit from the coastline to 5 miles inland, where no permanent oil and gas infrastructure would be permitted within 1 mile of potential polar bear denning habitat along the Canning/Staines River, Niguanak River, Katakturuk River, Marsh Creek, Carter Creek, Sadlerochit River, and all associated tributaries, and institute timing limitations from the coastline to 5 miles inland between October 30 and April 30, when oil and gas activities would be prohibited within 1 mile of potential polar bear denning habitat along the Niguanak River, Kakakturuk River, Marsh Creek, Carter Creek, Canning/Staines River, Sadlerochit River, and all associated tributaries. The SEIS describes the potential impacts of seismic surveys on denning bears, how required den detection surveys and buffer zones would serve to reduce (but not eliminate) the potential for impacts, and the importance protecting mothers and cubs from disturbance associate with seismic exploration and other oil and gas activities.
Brisson	Brook	Trustees for Alaska	80131	574	Changes in behavior and early den emergence or departure are not the only consequences of disturbance. Other physiological responses, such as increased heart rate and energy consumption, cannot be observed remotely. A study of two captive polar bears included a trial in which a nearby snowmobile was started and allowed to run for 30 seconds. The bears increased their metabolic rates by 12% and 18% the first time the snowmobile was started, and by 24% (both bears) when it was started 30 minutes later (Watts et al. 1991). A study of the response of black bears to the disturbance of flights by unmanned aerial vehicles (UAV; i.e., drone) concluded that: "UAV flights induced a physiological response, but most bears did not respond behaviorally by increasing movement rates or moving to a different location." (Ditmer et al. 2015) Black bears were disturbed by all 17 UAV flights in the study, as indicated by elevated heart rates lasting for 2 - 204 minutes, with the greatest elevation being 123 beats per minute above baseline. Despite this clear physiological response, bears only increased their movement rate in response to 1 of the 17 UAV flights. Elevated heart rates represent energy cost, as heart rate directly correlates with energy expenditure. Other studies have found elevated heart rates in response to human presence or machine noise with little to no accompanying behavioral change for species as varied as white-tailed deer (Moen et al. 1982) and Humboldt penguins (Ellenberg et al. 2006). Thus, bears that remain in their dens during disturbance can experience substantial physiological costs, in addition to the risk of being crushed by direct passage of a vehicle overhead.	As noted, polar bears may respond physiologically as well as behaviorally. The text has been revised as follows: "Hence, the initiation of intensive human activities during the period when females seek den sites (October to November) would give them the opportunity to choose sites in less-disturbed locations (Amstrup 1993), at least in areas where oil field activity occurs consistently throughout the year. <i>Polar bears may also have a physiological response to disturbance including increased metabolic rates and energy expenditure (Watts et al. 1991, Ditmer et al. 1991)</i>" .
Brisson	Brook	Trustees for Alaska	80131	575	The risks to cubs are important because their survival is a key influence on polar bear population trajectory - whether it is growth or decline. Vital rates are the rates at which animals survive and reproduce across years, and they can be calculated for specific age classes and sexes, and assessed for their relative influence on population trajectory. For the Southern Beaufort Sea subpopulation, a study that ranked the influence of 11 vital rates on population trajectory using four years of data (2002 - 2005) found that cub survival ranked first, second, third, and fourth, respectively (Hunter et al. 2010). In other words, the rate at which cubs survived was consistently one of the four most influential factors on whether the population would grow or decline. Combining this information, seismic activity would be expected to disturb virtually all polar bear dens in the project area, with risks of cub mortality from behavioral changes (e.g., early den departure) or from remaining in the den (e.g., the potential energetic costs to cubs or to lactating adult females). These risks greatly reduce the usefulness of the NSO categorization for protecting polar bears, unless meaningful TL restrictions are included (see Comments 4 and 5).	The Final SEIS includes a revision to lease stipulation 5 under Alternative D2. This stipulation institutes timing limitations from the coastline to 5 miles inland between October 30 and April 30, when oil and gas activities would be prohibited within 1 mile of potential polar bear denning habitat along the Niguanak River, Kakakturuk River, Marsh Creek, Carter Creek, Canning/Staines River, Sadlerochit River, and all associated tributaries. The SEIS describes the potential impacts of seismic surveys on denning bears, how required den detection surveys and buffer zones would serve to reduce (but not eliminate) the potential for impacts, and the importance protecting mothers and cubs from disturbance associate with seismic exploration and other oil and gas activities.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	576	The Canning River denning area is inadequately protected. Lease Stipulation 5 describes three additional requirements/standards that apply from the coastline to 5 miles inland. First, key waterways and their tributaries (Canning River, Niguanak River, Katakturuk River, Marsh Creek, Carter Creek, Sadlerochit River) are categorized as NSO. Second, any infrastructure must be designed to avoid impeding travel to and from dens. Third, the key waterways and tributaries that are listed above - with the exception of the Canning River - are subject to TL (timeline) restrictions of no activity within 1 mile during October 30 to April 30. The first and third requirement are specific to regions within the program area, as shown by diagonal green lines in Map 2.6 and the associated description of "Lease Stipulation 5 - coastal polar bear river denning habitat". However, these green lines do not include the Canning River area. As important denning habitat, the Canning River area needs the same TL protection as other denning habitat. Indeed, in the statement, the Canning River area (northwestern corner of the project area) is described (page 3-232): "...the highest density of maternal dens in Alaska 2000-2015 (2.06-2.32 dens per 100 km2) was located in the northwestern corner of the project area (Patil et al. 2022)". As described in Comment 3, under NSO categorization, seismic activity in the Canning River area during denning season is virtually guaranteed to cause disturbance, with risks of cub mortality contributing to population decline.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Brisson	Brook	Trustees for Alaska	80131	577	TL restrictions to protect polar bear dens should extend to April 30th across all Alternatives. The best available dataset of polar bear den chronology in and near the project area includes emergence dates for 147 dens (USGS Alaska Science Center, Polar Bear Research Program 2018). Of these, seven dens had emergences later than March 31st: April 1st, 2nd, 5th (twice), 10th, 13th, and 26th. Bears typically spend approximately two weeks near the den after emergence, thus safe end dates for these dens would have been April 15th, 16th, 19th, 24th, 27th, and May 10th. The Southern Beaufort Sea subpopulation is declining and survival of cubs is one of the most important and vulnerable vital rates that can contribute to the decline (see Comment 3). Thus, even the small number of dens protected by the 30th cutoff instead of the 15th (as in other Alternatives) are meaningful for the population.	The Final SEIS includes a revision to lease stipulation 5 under Alternative D2 that is intended to increase protections for polar bears. Timing limitations prevent oil and gas activities from the coastline to 2 miles inland (and up to 5 miles inland along the Niguanak River, Katakturuk River, Marsh Creek, Carter Creek, Canning/Staines and Sadlerochit River) in winter (between October 30 and April 30 of any year). BLM and USFWS agree that extending timing limitations to April 30, as contemplated under Alternatives D and D2, would reduce the potential for impacts to polar bear cubs.
Brisson	Brook	Trustees for Alaska	80131	578	The potentially severe disturbance of polar bears by ROW (right of way) construction, blasting at gravel mines, and pile-driving of bridge abutments is acknowledged but not assessed. Regardless of the protection conferred by NSO categorization and TL restrictions, polar bear dens can be disturbed by other activity, as described in the statement: "...pipelines, road crossings, gravel mines, and other permanent facilities would be permitted with ROWs or easements across the Coastal Plain" (page 2-7) "Note that PL 115-97 requires that the BLM authorize ROWs for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or with a NSO stipulation" (page 2-5) "Pile-driving would occur at bridge crossings over rivers and would produce strong in-air noise levels (Greene and Moore 1995; Blackwell et al. 2004). Along with gravel blasting, this would be one of the noisiest activities during construction. The level of received sound at any specific distance from pile-driving depends on the density or resistance of the substrate, bottom topography and composition, such as mud, sand, rock, the physical properties and dimensions of the pile being driven, and the type of pile-driver that is used (Richardson et al. 1995; Blackwell et al. 2004)." (page 3-250)	Impacts from potential disturbance sources to marine mammals are described in Draft SEIS Section 3.3.5, Marine Mammals - Direct and Indirect Impacts - Disturbance and Displacement. Potential impacts from creating and using roads and pipelines, blasting, pile-driving, permanent facilities, etc. are analyzed in the SEIS. It is the nature of the activities, as opposed to the legal mechanism for authorizing the activities (e.g., exploration or development and production plan approval versus essential ROW approval), that matters to the environmental resource. The analysis provided in the SEIS encompasses the potential impacts of granting essential ROWs even where that specific approval mechanism is not specified.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	579	The open-ended description of ROW construction implies that roads and pipelines could traverse critically important polar bear denning habitat, which would render the NSO categorization meaningless. This construction could also include blasting and pile-driving, some of the loudest disturbances possible from oil and gas activities. For example, blasting noise may heard within dens at distances > 0.8 miles (MacGillivray et al. 2003). Despite the clear potential to severely disturb denning polar bears, there is no assessment of the miles and locations of road construction, the frequency and locations of gravel blasting and pile-driving, or any other metric. Without such assessment, any leases approved under this program as described in the statement would permit any amount of disturbance to polar bears from ROW construction, blasting, and pile-driving, regardless of the negative impacts on the species.	The Final SEIS (Section 2.3.5, Lease Stipulations and Required Operating Procedures) notes that essential road and pipeline crossings of areas designated as NSO would still be allowed, "PL 115-97 requires that BLM authorize ROWs for essential roads and pipeline crossings, and other necessary access, even in areas closed to leasing or with a NSO stipulation." This SEIS uses the best available information to identify general potential impacts that could result from oil and gas exploration, development, and production. Until proposals for activity are submitted to BLM-USFWS, it is not possible to determine the locations where future infrastructure may be proposed, or the extent to which that infrastructure may overlap with denning habitat, the presence of which depends on localized topographic characteristics.. As described in Draft SEIS Section 1.2, Overview, BLM developed a hypothetical development scenario to aid in impact analysis, but noted that any development scenario is speculative at this time. Issuance of an oil and gas lease would not authorize any on-the-ground activity, and any proposals to conduct such activity would require additional environmental analysis and permitting. No changes to text.
Brisson	Brook	Trustees for Alaska	80131	580	ITR (incidental take regulations) are unlikely to be as effective as stated. The statement heavily relies on ITRs to reduce impacts on polar bears, which are defined as: "The current Alaska Beaufort Sea ITR/LOA process requires that surveys of potential denning habitat be conducted within a 1-mile buffer zone surrounding the proposed locations of roads and pads, a mitigative measure that is expected to be stipulated under the new ITRs that would be required for the program area." (3-249)	In response to various comments, portions of the Final SEIS discussing the ITR/LOA process and the potential influence of MMPA ITAs on impacts to polar bears have been revised for clarity and precision. For examples of potential mitigation measures that could be included in any future MMPA incidental take authorizations, we direct the commenter to the provisions of the 2021-2026 Beaufort Sea ITR which are reflected in proposed lease stipulations applicable to Alternatives D and D2. The analysis does not assume applicability of any ITR/IHA requirements. Note that the mitigation measures included in MMPA ITAs often vary due to differences in the timing, location, nature, and scope of activities at issue, as well as request-specific practicability considerations. Available mitigation measures also evolve over time as additional information is gathered and technology improves. It is thus premature to assume which mitigation measures would be prescribed in any MMPA ITAs for specific Program-related activities in the future. The Final SEIS includes revisions to Lease Stipulations and ROPS that would provide additional protections to polar bear dens; Lease Stipulation 14 requires lessees/operators observe the exclusion zone around known polar bear dens. Per ROP 10, seismic survey activity is prohibited within 1 mile of known, observed, or suspected polar bear dens, unless alternative protective measures are approved by the BLM Authorized Officer. Furthermore, under Alternative D2, certain areas of high-density polar bear denning habitat are excluded from leasing and seismic activity altogether.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	581	The surveys conducted for ITRs are assumed to be highly effective at reducing disturbance, as stated in several places: "...disturbance of denning female polar bears in the program area by 3D seismic exploration has the potential to cause moderate to major impacts by disturbing bears in dens that are not detected during pre-activity surveys. An ITR/LOA process governing post-leasing activities in the program area would be required to reduce those impacts to negligible levels. Judging from experience farther west on the North Slope, the potential effects of short-term behavioral disturbance on polar bears during the development and production phases of the program are likely to be negligible under a future ITR/LOA process." (3-251) "USFWS-approved mitigation measures for avoidance and minimization of disturbance of dens, as required under the ITR/LOA process, would reduce the potential impacts of blasting and pile-driving on polar bears, however." (3-250) "Effective mitigation is available, based on experience from the ITR/LOA process in the established North Slope oil fields west of the program area" (3-257) "The combination of seismic exploration with a relatively large number of polar bear dens underscores the crucial importance of developing new ITRs that are effective at mitigating potential impacts on the SBS stock of bears in the program area." If ITR surveys rely on AIR they will likely only detect 0.15 of dens (maximum of 0.24; see Comments 1 and 2). Even the higher estimate of detectability of 0.45 from industry surveys with potentially unknown biases (Smith et al. 2020) would leave more than half of dens undetected. Similarly, the current detectability estimate of 0.54 in the statement is not much better, leaving just under half of dens undetected.	In response to various comments, portions of the Final SEIS discussing the ITR/LOA process and the potential influence of MMPA ITAs on impacts to polar bears have been revised for clarity and precision. For examples of potential mitigation measures that could be included in any future MMPA incidental take authorizations, we direct the commenter to the provisions of the 2021-2026 Beaufort Sea ITR which are reflected in proposed lease stipulations applicable to Alternatives D and D2. The analysis does not assume applicability of any ITR/IHA requirements. Note that the mitigation measures included in MMPA ITAs often vary due to differences in the timing, location, nature, and scope of activities at issue, as well as request-specific practicability considerations. Available mitigation measures also evolve over time as additional information is gathered and technology improves. It is thus premature to assume which mitigation measures would be prescribed in any MMPA ITAs for specific Program-related activities in the future. The Final SEIS includes revisions to Lease Stipulations and ROPS that would provide additional protections to polar bear dens; Lease Stipulation 14 requires lessees/operators observe the exclusion zone around known polar bear dens. Per ROP 10, seismic survey activity is prohibited within 1 mile of known, observed, or suspected polar bear dens, unless alternative protective measures are approved by the BLM Authorized Officer. Furthermore, under Alternative D2, certain areas of high-density polar bear denning habitat are excluded from leasing and seismic activity altogether.
Brisson	Brook	Trustees for Alaska	80131	582	As it is written, the statement thus includes the expectation that around half of denning bears would be subject to disturbance from seismic activity, blasting, and pile-driving at unknown distances, including directly over dens. Using the more accurate detection rate of 0.15 (see Comments above), it is expected that nearly all dens will experience this disturbance. Disturbing half or nearly all denning polar bears - in a potentially severe fashion that can reduce cub survival - contradicts the assertion that ITRs will reduce impacts to negligible levels.	Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.
Brisson	Brook	Trustees for Alaska	80131	583	Existing ITRs in oil fields to the west do not necessarily indicate success in the project area. The majority of polar bear dens to the west are on barrier islands whereas nearly all dens in the project area are instead on the mainland, where oil and gas activities are presumably much more likely to occur (Patil et al. 2022). Indeed, dens in the oil fields to the west may be concentrated on barrier islands in part because of the industry activity on the mainland. Also, barrier islands offer fewer denning opportunities in the project area because the islands tend to be gravel and have gentle slopes, whereas to the west islands are more likely to contain tundra with abrupt banks that can form deep snowdrifts (Patil et al. 2022).	The commenter is correct that there are fewer barrier islands in the Program Area than to the area to the west, and that most denning within the Program Area would occur on the mainland section of the coast. Thus, FLIR surveys will be important in planning exploration and development activities and ensuring dens are protected after development occurs. Activities would be conducted subject to lease stipulations and required operating procedures, which would reduce potential impacts to polar bears and their habitat (see Draft SEIS Section 2.3.5, Lease Stipulations and Required Operating Procedures). For example, Lease Stipulation 5 would remove 20,400 acres of high-density polar bear denning habitat from leasing altogether, prevent surface occupancy on 93% of the areas available for leasing, and place timing limitations on activities to reduce the probability of disturbing polar bears. Lease stipulation 14 and ROP 10 would require operators to attempt to locate dens using aerial infrared imagery and would require operators to observe a 1-mile operational exclusion zone around all known dens.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	584	Habitat loss considerations of the project footprint do not account for additional travel and energy demand. The statement asserts that habitat loss and disturbance affecting polar bears prior to denning will be short term and of minimal consequence, because bears will travel elsewhere and select den sites away from oil and gas activity: "...the initiation of intensive human activities during the period when females seek den sites (October to November) would give them the opportunity to choose sites in less-disturbed locations (Amstrup 1993), at least in areas where oil field activity occurs consistently throughout the year." (page 3-248) "It is likely that maternal denning will continue to increase in terrestrial habitats in the future, although the presence of operating facilities would probably discourage female bears from denning in suitable habitat nearby; instead, they would be more likely to seek suitable den sites in less-disturbed habitat away from facilities." (page 3-252) "Short-term behavioral responses are not likely to have population-level effects and thus are considered less problematic than are den disturbance and abandonment (USFWS 2008, 2009; 86 FR 42982)." (page 3-251) However, as the statement also notes, climate change and sea ice loss increasingly cause bears to experience negative energy balance, leading to reductions in survival and reproduction (page 3–243). For polar bears experiencing long-term declines in body condition from sea ice loss, any additional energy expenditure is a negative influence. It is critical to estimate the magnitude of this influence.	The magnitude of the reductions in survival and reproduction due to additional energy expenditure due to habitat loss and disturbance from the proposed action are not known. The text has been edited to recognize that this is a cumulative impact. Revise text "Models predict decreased survival of polar bears in the SBS population with reduced sea ice coverage, including reductions in breeding rates, cub survival, and recruitment of young bears into the breeding population. Polar bears in poor body condition from declines in sea ice, may not have the ability to travel elsewhere and select den sites away from oil and gas activity, and may be more vulnerable to habitat loss and disturbance from the proposed action"
Brisson	Brook	Trustees for Alaska	80131	585	A recent study found that each increase of 0.05 of a day spent active correlated to a 7% increase in field metabolic rate (FMR) for polar bears (Pagano et al. 2018). For example, if a polar bear goes from spending 3.6 hours of the day being active (0.15 × 24 hours) to spending 6 hours of the day being active (0.25 × 24 hours), this increase would elevate its FMR by 14%, creating an energy demand that must be met by additional food intake or the bear would lose body condition. Thus, the expected spatial distribution of alternative denning sites is important. It is unclear from the statement if less-disturbed areas of equal or better denning quality are expected to be nearby (e.g., within several km) or if bears are expected to move longer distances (e.g., the 75 km from the easternmost denning habitat near Griffin Point, to the central denning habitat near Collinson Point). Without this information, it is hard to interpret the assertion that bears will simply select different denning sites without consequence.	Polar bear maternal den habitat (Durner and Atwood 2018) is distributed across the program area (Map 3-40) and movements would likely be short. Additionally, the denning habitat with the highest density of maternal dens would not be available for leasing under the revised Lease Stipulation 5 in Alternative D. There is a large amount of suitable denning habitat along the entire northern coast of Alaska, thus it is not a concern that there will be increased energetic demands to find denning habitat. Even if one area is avoided because of activity (which is questionable) there would be additional denning habitat available at a similar distance, or closer.
Brisson	Brook	Trustees for Alaska	80131	586	The best available science now includes calculation of the decline in polar bear recruitment caused by emissions. The statement rightfully focuses on maternal denning habitat of polar bears. However, the impact of emissions from future oil and gas development that would be enabled by the leasing program, on sea ice habitat of polar bears and consequently on their survival, can now also be calculated. Amstrup and Bitz (2023) combined information from the 15 years of peer-reviewed publications since polar bears were listed as threatened in 2008, producing equations that link Gigatons (Gt) of emissions of CO2 equivalents to sea ice loss in each of the 19 polar bear subpopulations; that sea ice loss to the duration of annual fasting periods, in which there is not enough sea ice to hunt prey; and that duration of annual fasting to the survival of cubs, as the latter is such an important influence on population trajectory. Given that the statement reports expected emissions from future activities that would be enabled under each alternative, the reductions in cub survival related to sea ice loss should also be calculated.Under the activities that would be enabled by Alternative D, the net emissions of 100-year CO2 equivalents during 2023-2053 are 92.56 million metric tons, or 0.09256 Gt, based on the information provided in the statement (page 3-12). For the Southern Beaufort Sea, Amstrup and Bitz (2023) report a decrease in the annual cub survival rate (i.e., an increase in cub mortality) of 0.065% per Gt (95% confidence interval or CI: 0.037 - 0.099%). Thus, in 2053, the annual cub survival rate would be expected to be lower than in 2023 by 0.006% (CI: 0.003 - 0.009%; point estimate calculated as 0.09256 Gt × 0.065%) as a direct result of sea ice loss caused by emissions from lease-enabled activities.	The effects of climate change on polar bears are specifically addressed on 3.3.5 of the SEIS. Recent studies have linked emissions and declines in sea ice to demographic outcomes for polar bears (Molnár et al. 2020, Amstrup and Bitz 2023). The text on page 3-280 (Cumulative effects) has been edited to include discussion of how the impacts of GHG (GHG) emissions from program-related activities would combine with global GHG emissions and incrementally contribute to the ongoing and projected climate change trends described above. Additionally, the framework described in a recent study by Amstrup and Bitz (2023) was applied to assess the potential extent of this contribution and the possible impacts on polar bears. Amstrup, S. C., and C. M. Bitz. 2023. Unlock the Endangered Species Act to address GHG emissions. Science 381:949–951. Molnár, P. K., C. M. Bitz, M. M. Holland, J. E. Kay, S. R. Penk, and S. C. Amstrup. 2020. Fasting season length sets temporal limits for global polar bear persistence. Nature Climate Change 10:732–738.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	587	While this number seems small, it cannot be ignored. First, environmental impacts must consider predicted declines in survival based on the best available science. Second, total emissions through today are simply the sum of many individual projects, and those total emissions have caused ice loss that is driving polar bear subpopulation declines. Why should this lease avoid scrutiny and be allowed to enable activities that will contribute to further declines? Third, other sources of emissions during 2023-2053 will also contribute to declines in cub survival, raising the possibility that the emissions related to this lease will be responsible for pushing survival beyond an important threshold. As an analogy, a very small increase in projected sea level rise can seem insignificant - unless your home is just above sea level in an extremely low-lying area like the Maldives. Cub survival is one of the most important controls of polar bear population trajectory (see Comment 3), and previous years of low cub survival have had a profound influence on population size in the Southern Beaufort Sea, which fell by roughly half from the early 2000s to 2015 (Bromaghin et al. 2021).	The effects of climate change on polar bears are specifically addressed on 3.3.5 of the SEIS. Recent studies have linked emissions and declines in sea ice to demographic outcomes for polar bears (Molnár et al. 2020, Amstrup and Bitz 2023). The text on page 3-280 (Cumulative effects) has been edited to include discussion of how the impacts of GHG (GHG) emissions from program-related activities would combine with global GHG emissions and incrementally contribute to the ongoing and projected climate change trends described above. Additionally, the framework described in a recent study by Amstrup and Bitz (2023) was applied to assess the potential extent of this contribution and the possible impacts on polar bears. Amstrup, S. C., and C. M. Bitz. 2023. Unlock the Endangered Species Act to address GHG emissions. Science 381:949–951. Molnár, P. K., C. M. Bitz, M. M. Holland, J. E. Kay, S. R. Penk, and S. C. Amstrup. 2020. Fasting season length sets temporal limits for global polar bear persistence. Nature Climate Change 10:732–738.
Oates	Russell	-	80142	2	Another concern is that there is not enough protection for on-shore denning habitat for polar bears: the SEIS is inconsistent in protecting polar bear denning habitat, protecting some habitat but leaving some vulnerable, especially for denning sows and cubs. Stronger protections are needed for both the Canning River Delta and the Camden Bay area.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Heslep	Alison	-	80164	28	#14 Ch/Sec/Sub-sec 3.3.5 Title Critical Habitat Comment(s) The subsection highlights the critical habitat zones for polar bears, specifically the terrestrial denning habitat situated on the northern coast of Alaska. It explains that the denning habitat lies within 20 miles inland from the coast between the US-Canada border and the Shaviovik and Kavik Rivers, and within 5 miles from the coast from there to Point Barrow. 81.1 percent of the program area was determined as the polar bear's critical habitat. However, the draft SEIS notes that not all parts within this area serve as potential maternal denning habitats due to topographical differences and varying bank-habitat characteristics. Map 3-40 in Appendix A displays the distinct units of the polar bear's critical habitat, with some known dens extending further inland than 20 miles. The impacts on polar bear habitats under different Alternatives were also outlined. Specifically, it states that Alternative C - Lease Stipulation 5 applies no surface occupancy and has timing restrictions on 8.8% of the terrestrial critical habitat. Further Lease Stipulations under this Alternative would protect denning habitats, but there is not a quantitative estimate of the amount of critical habitat that would be covered. Alternative D was stated as providing the maximum protection for denning polar bears but lacks a detailed breakdown of the critical habitat coverage. Some Lease Stipulations under Alternatives C and D extend only 5 miles inland, even though the defined critical habitat reaches 20 miles inland. One such stipulation, Lease Stipulation 5, pertains to the Coastal Polar Bear Denning River Habitat. It puts forth restrictions for polar bear denning habitats within a 5-mile zone inland, but only offers protection within a 1-mile range within that zone, and only seems to apply to the fine-scale denning habitat identified on Map 3-40 surrounding specific rivers listed in the Lease Stipulation. This stipulation also requires that proponents "Comply with ESA and MMPA requirements" which are not specified in the draft SEIS. Lease Stipulation 14 (Table 2-3, page no. 2-24 of the draft SEIS) focuses on detecting, avoiding, monitoring, and reporting polar bear dens, it does not specify the coastal distance where these rules are applicable, nor does it mention the critical habitat. Recommendation(s) Lease Stipulation 14 (Table 2-3, page no. 2-24 of the draft SEIS) focuses on detectin+I1678 However, it does not specify the coastal distance where these rules are applicable, nor does it mention the critical habitat. Modify Lease Stipulation 5 to include all the terrestrial units of polar bear critical habitat that extends 20 miles inland from the coastline. Describe the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA) requirements referenced under Lease Stipulation 5 that proponents must comply with under all Alternatives. Clarify whether Lease Stipulation 14 applies to the entire program area. Provide a clear quantitative comparison of the percentage of the barrier island and terrestrial denning units of designated polar bear critical habitat that will be protected from destruction/disturbance under each of the Alternatives.	The impact analysis used maternal denning habitat (as determined at a finer scale by USGS), not designated critical habitat. The comparison of Alternatives by lease type and hydrocarbon potential is presented in Table 3-41 and in the text under each action alternative. The text has been edited to more clearly compare maternal denning habitat between alternatives. The suggestion to modify Lease Stipulation 5 to extend 20 miles inland is not a reasonable mitigation given statutory mandates and the location of areas of highest hydrocarbon potential.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Rich	Sadie	-	80243	3	Seismic exploration greatly disturbs polar bears as noise and vibrations from the heavy vehicles and equipment, often result in den abandonment.(21) For example, "In 1985, a female polar bear abandoned her maternity den in the Arctic Refuge coastal plain after seismic exploration vehicles tracked within 700 feet of it - even though regulations at the time required a 0.8-kilometer buffer from known dens."(22) (21) Imperiled polar bears face new threat in Alaska's Arctic National Wildlife Refuge. "World Wildlife Fund," n.d. https://www.worldwildlife.org/stories/imperiled-polar-bears-face-new-threat-in-alaska-s-arctic-national-wildlife-refuge . (22) "Impact of Oil Drilling on Polar Bears." Accessed November 8, 2023. https://web.mit.edu/12.000/www/m2007/teams/7/final_report/impacts_polarbears.html#:~:text=Polar%20bears%20are%20especially%20sensitive%20to%20oil%20spills%20because%20they,oiling%20and%20another%20was%20euthanized .	Lease stipulation 5 in Alternative D has been revised to increase protections for polar bear denning habitat. The stipulation prohibits leasing (and seismic surveys) from the coast to 1 mile inland along the coastline along the Canning/Stains rivers and in the Camden Bay area. This stipulation now protects 20,400 acres of maternal denning habitat. From the coastline to 5 miles inland, no permanent oil and gas infrastructure would be permitted within 1 mile of potential polar bear denning habitat on the Canning/Staines River, Niguanak River, Katakturuk River, Marsh Creek, Carter Creek, and Sadlerochit River, and all associated tributaries. Timing limitations prevent oil and gas activities from the coastline to 2 miles inland (and up to 5 miles inland along the Niguanak River, Katakturuk River, Marsh Creek, Carter Creek, Canning/Staines and Sadlerochit River) in winter (between October 30 and April 30 of any year). Any proposed action with on-the-ground activity would be subject to project-specific environmental review (e.g., NEPA) and permitting, where additional protective restrictions may be required to receive authorization.
Rich	Sadie	-	80243	4	Additionally, multiple research studies have found that the aerial FLIR surveys conducted by the oil and gas industry do not reliably detect all polar bear dens present in an area.(23) One study evaluated the results from oil-field FLIR surveys conducted between 2004 and 2016 and found that only 45 percent of dens were detected - meaning more than half were missed.(24) The failure of these surveys poses a significant risk to denning mothers and their cubs as undetected dens are likely to be run over and crushed by seismic equipment.(25) (23) Fears, Darryl. "Arctic Drilling Operators Can't Accurately Pinpoint Polar Bear Dens - Which Means They Can't Avoid Destroying Them." Washington Post, February 27, 2020. https://www.washingtonpost.com/climate-environment/2020/02/27/polar-bears-drilling-anwr/ . (24) "Polar Bear Dens at Risk From Oil, Gas Exploration Polar Bears International." Accessed November 8, 2023. https://polarbearsinternational.org/news-media/articles/polar-bear-dens-oil-gas-exploration-risk/ . (25) Imperiled polar bears face new threat in Alaska's Arctic National Wildlife Refuge. "World Wildlife Fund," n.d. https://www.worldwildlife.org/stories/imperiled-polar-bears-face-new-threat-in-alaska-s-arctic-national-wildlife-refuge .	Until better methods are developed, FLIR represents the best available technology to search large areas for maternal dens in advance of seismic exploration and other on-the-ground activities. Any proposed project with on-the-ground activity (e.g., seismic surveys, exploration activity, construction, operations) would be subject to project-specific environmental review (NEPA) and permitting (ESA Section 7 consultations), where additional protective restrictions may be required to receive authorization. Language within Lease Stipulation 14 and ROP 10 has been revised to clarify and strengthen den detections requirements. Ground-based FLIR may be utilized on a case-by-case basis as an additional tool to supplement aerial FLIR surveys.
Mantell	Jace	-	80284	3	3. Stronger protections are also needed for on-shore denning habitat for polar bears. There needs to be more consistent, stronger protections for denning sows and cubs, particularly in the Canning River delta and area around Camden bay.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Miller	Debbie	-	80286	3	Polar bears are a particular concern. The Beaufort Sea population is a threatened species under the Endangered Species Act. They are also protected under the 1973 Polar Bear Treaty which mandates that critical denning habitat be protected for polar bears. With climate change and the continued loss of sea ice, polar bears are denning more on land and the coastal plain provides excellent, critical denning habitat for their survival. No industrial activity should be allowed in a wildlife refuge with critical habitat for threatened polar bears. Maternal females are extremely sensitive to disturbance and known to abandon their cubs when disturbed. When abandoned, the cubs die --- a long-term significant impact on their small, declining population, particularly given their slow reproductive cycle. I urge BLM and USFWS to honor our treaty obligations and laws that protect threatened animals under the Endangered Species Act.	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	62	Topic Marine Mammals, Direct and Indirect Impacts, Polar Bears Section # 3.3.5 Page # 3-257 SEIS Text In contrast with the exploration phase, the net effects of program-related activities during the development, production, abandonment, and rehabilitation phases are likely to be minor to negligible in terms of injury and mortality at the population level, with required mitigation in place under the ITR/LOA process. (as one example of text concerning the comment) Comment Throughout the Polar Bear impact analyses for the different alternatives, the impact discussions include unique and undefined labels for describing the degree of potential impacts to bears, i.e., negligible, minor, moderate. These are terms not used for other resources and are not defined anywhere.	The terms “negligible,” “minor,” and “moderate,” appear in the polar bear impacts analysis and as well as some other portions of the SEIS. The meaning of these terms is sufficiently understood from the contexts in which the terms are used, and as such, no generally applicable definitions are required.
Heun	Christi	-	80448	3	The Coastal Plain is also home to one of the world's most imperial polar bear populations, the Southern Beaufort Sea population, providing critical denning habitat from other polar bears and their clubs. As climate changes, mother bears have been forced to shore from the preferred sea ice habitat to den and raise their cubs on land. Simply put any oil and gas activities in the Coastal Plain are incompatible with the survival of this iconic species, and severely challenge the survival of other species present on the Coastal Plain.	The SEIS describes the population size of the SBS polar bear population and the potential impacts of climate change as well as the cumulative impacts of the proposed action

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Young	Pam	-	80460	3	Also, please consider extending and specifying better protection for polar bear denning habitat, and be sure to include the Canning River Delta and the Campton Bay area,	The Final SEIS includes a revision to Lease Stipulation 5 under Alternative D2 that would increase protections for polar bear denning habitat in the high-density northwestern denning hotspot.

U.3.33 Public Health

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Boldrick	Lauren	EPA Region 10	80058	12	Temporary Worker Violence The DSEIS discusses the potential impacts brought by the influx of non-resident temporary workers, including substantially higher rates of domestic and other violence in Native women and girls.(15) EPA recommends collaborating with impacted communities to develop mitigation measures to these identified potential harms to communities with EJ concerns. EPA is available to provide support in responding to this recommendation. (15) DSEIS page 3-359	Existing stipulations and Required Operating Procedures currently contain the requirement for community outreach. In particular, communication methods could include holding community open house meetings, workshops, newsletters, and radio and television announcements. These requirements are included in Table 2-3.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Councill	80190	157	NEPA requires federal agencies to take a hard look not only at the potential impacts to the natural environment, but to the human environment as well. As such, it is incumbent on the agency to thoroughly analyze in the SEIS how all phases of a proposed oil and gas leasing program will impact the health of the region's residents, including residents of Arctic Village and Venetie, the Yukon Flats region, and other United States and Canadian communities that are connected to the Coastal Plain through ecological and social systems, like the Porcupine Caribou Herd. As the Tribes raised during agency's prior NEPA process, BLM's 2019 Final EIS failed to adequately analyze the potential public health impacts to the communities outside the program area that harvest the migratory species that rely on the program area. This legal deficiency remains in the draft SEIS and must be remedied in the final SEIS. Moreover, impacts to subsistence resources will have cascading indirect and cumulative impacts on public health (both mental and physical) as well as food security and village economies. The agencies' failure to acknowledge this indicates its resistance to taking a hard look at the actual impacts of development on Gwich'in communities. In the final SEIS, the agencies should address the public health impacts associated with adverse impacts to migratory species, including increased stress and anxiety about food security and contamination of wild foods. In doing so, the agencies should incorporate Gwich'in Traditional Knowledge of public health impacts related to food security as found in Attachment A to this comment letter. As the agencies will find, Gwich'in cultural experts have extensive knowledge about the importance of reliable, clean subsistence resources to public health and describe the ways industrial innovations and associated western cultural vices have damaged the health of their communities.	The SEIS states specifically, "Gwich'in would be affected to a greater degree from reductions in caribou than Kaktovik, who have access to whales, walrus, and other marine mammals to offset losses in caribou." Moreover, the SEIS Section 3.4.3 addresses the potential social and cultural impacts of subsistence disruptions (General Development and Culture), and also addresses the potential increased safety risks associated with traveling farther for subsistence (Cumulative Impacts).
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Councill	80190	158	Finally, the agencies also should address the public health impacts to these communities associated with leasing and development in the Coastal Plain, including stress and fear for their way of life and food security. Again, for this information the agencies should look to the Tribes' compilation of Traditional Knowledge in Attachment A.	The SEIS Section 3.4.3 addresses the potential social and cultural impacts of subsistence disruptions (General Development and Culture), and also addresses the potential increased safety risks associated with traveling farther for subsistence (Cumulative Impacts).
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Councill	80190	159	In addition, to adequately analyze such human health impacts, the BLM and USFWS must complete a thorough Health Impact Assessment ("HIA").(287) This type of assessment has an established framework and methodology that allows the agencies to take a hard look at the health impacts of various leasing alternatives and compare them to the "no action" alternative.(288) This analysis needs to focus on how oil leasing, exploration, construction, operation, and the cumulative effects of development would expose residents to health risks, as well as how direct and indirect determinants that positively contribute to health may be compromised by development-related activities. (287) See Karen Lock, Health Impact Assessment, 320 BRITISH MEDICAL J., 1395 (2000). (288) See Alaska Health Impact Assessment Program, Technical Guidance for Health Impact Assessment in Alaska (2015), http://dhss.alaska.gov/dph/Epi/hia/Documents/AlaskaHIAToolkit.pdf . In the 2018-2020 NEPA process, BLM failed to undertake a HIA, instead deferring an HIA and other evaluations of human health impacts until later stages of oil and gas development. In their scoping comments, the Tribes requested that this legal deficiency be remedied in the SEIS.(289) The Tribes are disappointed to see that the agencies failed to remedy this deficiency in the draft SEIS. Without an HIA to inform the NEPA analysis, none of the action alternatives in any SEIS will maximize protection for public health. (289) Attachment D at 25-26.	While HIAs can aid NEPA analyses for certain types of actions, they are not required. Agencies have discretion as to how to analyze health impacts. Additional site-specific analysis including a Health Impact Assessment may be conducted when specific projects are proposed after lease sales are conducted.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	160	In undertaking an HIA, the BLM must compile comprehensive baseline data to complete a thorough assessment. When analyzing human health, the BLM must comprehensively examine how oil and gas development would impact the numerous health benefits that subsistence resources and practices provide to regional residents. These benefits include: food security and nutrition, social networks, physical activity, and mental health. While ecosystems are a foundational determinant of the public's health and wellness everywhere, in Alaska's subsistence-based Tribal communities this connection is particularly important. (290) (290) See Philip A. Loring & S.C. Gerlach, Food, Culture, and Human Health in Alaska: An Integrative Health Approach to Food Security, 12 ENVIRONMENTAL SCIENCE & POLICY 466 (2009). The HIA must also consider how a Coastal Plain leasing program would impact the region's food security.(291) All three pillars of food security should be examined: food availability, food access, and food use.(292) Within each of these pillars, attention should be given to the importance of nutrition and traditional foods, as well as subsistence. The HIA must examine how oil and gas activities would impact the harvest, preparation, sharing, and consumption of wild resources and subsistence through the lens of dietary, identity, and cultural changes. This should also include an analysis of how changes to the harvesting, preparing, sharing, and consumption of wild resources would impact social networks and community structure within potential affected communities.(293) Social networks contribute significantly to human health outcomes. (294) How these networks may change and how these alterations will impact residents' health must be considered and described. (291) See Janell Smith et al., Measurable Benefits of Traditional Food Customs in the Lives of Rural and Urban Alaska Inupiaq Elders (2009), http://www.alaskaanthropology.org/wp-content/uploads/2017/08/akanth-articles_275_v7_n1_Smith-Saylor-Easton-Wiedmen-Elders.pdf . (292) See World Health Org., Trade, Foreign Policy, Diplomacy, and Health: Food Security (2014), http://www.who.int/trade/glossary/story028/en/ . (293) See Gary Kofinas et al., Subsistence Sharing Networks and Cooperation: Kaktovik, Wainwright, and Venetie, Alaska. BOEM Report 2015-023DOI; AFES Report MP 2015-02 (2016). (294) See Kristin P. Smith & Nicholas A. Christakis, Social Networks and Health, 34 THE ANNUAL REV. SOCIOLOGY 405 (2003).	While HIAs can aid NEPA analyses for certain types of actions, they are not required. Agencies have discretion as to how to analyze health impacts. Additional site-specific analysis including a Health Impact Assessment may be conducted when specific projects are proposed after lease sales are conducted.
Bright	Roselie	-	20475	5	The use of the mined oil and gas to generate industrial energy and chemicals will continue to poison the land, water, and air in the surrounding communities, many of which are populated by disadvantaged groups [105-107].	Disproportionate impacts on populations residing in communities that could potentially be affected by the proposed action are addressed in Section 3.4.5 of the SEIS, Environmental Justice.
Bright	Roselie	-	20475	6	The use of oil to operate combustion engine vehicles will end up generating more air and noise pollution, thus continuing to harm the people who live near major roads and highways in the US and throughout the world [1-91].	Impacts from the proposed action on Air Quality and Noise are addressed in Sections 3.2.2 and 3.2.3 of the SEIS, respectively.
Boldrick	Lauren	EPA Region 10	80058	6	Public Health EPA recommends that all mitigation measures related to public health in the FSEIS include an adaptive management plan. The guidelines found in Adaptive Management: the U.S. Department of the Interior Applications Guide(9) may be helpful. EPA recommends engaging with impacted communities when forming a plan. (9) https://www.doi.gov/sites/doi.gov/files/uploads/DOI-Adaptive-Management-Applications-Guide-WebOptimized.pdf . Accessed 9/28/2023.	No specific mitigation measures related to public health are identified in the SEIS. An adaptive management plan is therefore not provided.
Brisson	Brook	Trustees for Alaska	80131	494	BLM and FWS must ensure that any future development projects emerging from this analysis require a full health impact assessment (HIA). In at least two locations within the draft SEIS, the agencies state that health impact assessments are expected to be developed for future development projects that would require additional NEPA analysis.(1318) HIAs are an internationally recognized way to rigorously assess the health impacts of a proposed impact or development.(1319) In Alaska, HIAs have been completed for ExxonMobil's Point Thomson project and for climate change. These analyses are particularly valuable in rural Alaska where communities have deep connections to the natural environment through socio-cultural systems and subsistence uses. (1318) DSEIS at 3-431. (1319) See: Lock, Karen. "Health impact assessment." Bmj 320.7246 (2000): 1395-1398.	While HIAs can aid NEPA analyses for certain types of actions, they are not required. Agencies have discretion as to how to analyze health impacts. Additional site specific analysis including a Health Impact Assessment may be conducted when specific projects are proposed after lease sales are conducted.
Brisson	Brook	Trustees for Alaska	80131	495	In the Reserve, specifically in the cases of GMT-1, GMT-2, and Willow, HIAs were requested as part of the environmental impact analysis. In each of these instances, however, HIAs were never completed and the health analysis instead tiered to documents that were over a decade old. The importance of the Coastal Plain to surrounding communities' health and wellbeing cannot be overstated and requires this comprehensive level of analysis. If there are any future proposed developments, it is imperative that BLM ensures this condition is met for all communities with a connection to the Coastal Plain. The Record of Decision for this analysis should make HIAs a formal requirement of any future actions.	While HIAs can aid NEPA analyses for certain types of actions, they are not required. Agencies have discretion as to how to analyze health impacts. Additional site specific analysis including a Health Impact Assessment may be conducted when specific projects are proposed after lease sales are conducted.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	496	Within the "cultural continuity" section, as well as within the subsistence portions of the draft SEIS, the agencies correctly raise the importance of sharing subsistence resources.(1320) BLM and FWS write: "Sharing the harvest is an important objective in subsistence lifestyles; 42 percent of households shared half or more of their harvests with others in the community."(1321) From a public health perspective, however, BLM and FWS fail to describe how sharing fosters strong social networks, and how these social networks are a positive determinant of health for individuals and communities. (1320) DSEIS at 3-434. (1321) DSEIS at 3-435.	An entire discussion of sharing networks for subsistence resources is now contained under the heading "food sharing" in the Final SEIS. This section describes how NSB communities have strong sharing networks for subsistence resources and cites a study conducted in Kaktovik and Wainwright which found that a household harvested only approximately 25 percent of the subsistence resources consumed in a year, indicating that sharing occurs within and between communities and highlighting the importance of community to sustain a subsistence diet.
Brisson	Brook	Trustees for Alaska	80131	497	BLM and FWS should elaborate on how the social networks surrounding subsistence resources positively contribute to public health benefits in the final SEIS. There is a rich body of academic literature that speaks to the power of social networks as a determinant of health.(1322) In addition to food security, and the associated benefits to nutrition, these networks foster connections, support, and help contribute to cultural identity and mental health. (1322) See: Smith, Kirsten P., and Nicholas A. Christakis. "Social networks and health." Annu. Rev. Sociol 34 (2008): 405-429.	An entire discussion detailing social determinants of health is now contained in the Final SEIS. This section describes how cultural continuity and participation in subsistence activities contribute to measurable public health outcomes.
Brisson	Brook	Trustees for Alaska	80131	498	In addition to describing the positive health benefits of social networks, BLM and FWS must also disclose how social networks may be compromised through an oil and gas program on the Coastal Plain. In the final SEIS, the agencies must connect the potential decline of subsistence resource abundance and availability to how social networks and their health benefits may be diminished.	The impact analysis currently describes how, since only a few Kaktovik residents would work directly for oil and gas operators and housed outside of Kaktovik, impacts on community cohesion and from social isolation should be minimal. Effects on social determinants of health from all stages of oil and gas development are complex. There would be a combination of probable beneficial impacts on nutrition and mental health from increased employment and income, with possible long-term impacts on mental health and general health status from increased stress levels. The impact analysis also describes how oil and gas development may have both beneficial and adverse impacts on mental health. The potential for increased revenue and employment may reduce stress and anxiety, but concerns about environmental contamination and potential impacts on subsistence access and resource availability may result in adverse outcomes.
Heslep	Alison	-	80164	31	#17 Ch/Sec/Sub-sec 3.4.11 Title Social Determinants of Health Comment(s) The current document does not appear to discuss the potential impacts of the development of the Coastal Plain Leasing Program on Social Determinants of Health, particularly the spiritual and cultural importance of the PCH and subsistence for Indigenous communities both in Alaska and Canada. There may be impacts on social determinants of health because of the potential disruption of ritual and spiritual components of Cultural Continuity, Food Security, and Food Sharing. These impacts would be felt due to a decrease in subsistence resources (due to possible reduction in PCH particularly, and Bowhead and Beluga whales) and potential developments on a culturally or spiritually important site to the Gwich'in and Inuvialuit people (without direct consultation and engagement with Canadian IG and IOs, the location of these sites will remain unknown. It is noted that the potential disruption of ritual and spiritual components of Alaskan Gwich'in and Inuvialuit people is not mentioned in the Social Determinants of Health section earlier in the chapter. Recommendation(s) A paragraph at the end of Section 3.4.11 should discuss the potential impacts of the development of the Coastal Plain Leasing Program on Social Determinants of Health for Gwich'in and Inuvialuit communities in Canada. The GNWT recommends adding a section at the end of the Social Determinants of Health section which would discuss the potential impacts of a disruption of ritual and spiritual components of Gwich'in and Inuvialuit life due to a reduction in subsistence and cultural resources (including potential disruption of Beluga and Bowhead whale habitat) and development of the caribou calving region. These impacts should also be included in the discussion of alternatives on p. 3-445.	The existing analysis acknowledges community-level mental health effects resulting from components of the proposed action. It would be speculative to ascertain that direct impacts on health would accrue from the proposed action in the form of disruption of ritual and spiritual components of Gwich'in and Inuvialuit life. However, such effects are acknowledged in Section 3.4.3, which discusses the potential for reduction in subsistence and cultural resources (including potential disruption of Beluga and Bowhead whale habitat). The discussion specifically identifies potential subsistence impacts on Iñupiat and Alaska Gwich'in subsistence uses and resources. Inuvialuit and Canadian Gwich'in subsistence impacts are discussed under a separate heading of Transboundary Impacts.

U.3.34 Public Meetings

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	ASRC, ICAS, and NSB	80231	7	The Agencies have rushed to convene public meetings on the Draft SEIS before the comment period closes, and they are doing so at the expense of actual community participation. For example, the notice for the September 25 public meeting in Utqiagvik the largest community by population on the North Slope and the seat of the municipal government-was posted on September 18. The exact date and time of the meeting was posted September 20. BLM declined to reschedule the meeting, despite multiple requests from North Slope leaders. As a result, a mere ten people attended. Such a short time is simply insufficient to notify community members about a meeting to discuss a 1,400-page document, especially during whaling season.(14) And, the Fort Yukon meeting- which appears to have been posted on October 6-was scheduled at noon on October 9, which is a federal holiday. (14) The challenge of reviewing such a substantial document is compounded by the fact that it was released during a time when internet service in our region has been severely limited due to a subsea fiber cable cut, which has severely compromised internet access and phone service in our region for several months.	The dates of the public meetings were coordinated and approved with community leadership via telephone and email. Hard copies were distributed to Utqiagvik, Kaktovik, Arctic Village, Venetie, and Fort Yukon, and were also available upon request. The public meeting presentation was translated into Gwich'in and Inupiat, and was made available on the BLM ePlanning project website referenced above.
Hitchcock	Arleigh	-	80392	3	I would like to comment on the public process that is going on right now. This meeting is not accessible for most Fairbanksians that work until 5:00 p.m. and so had missed the beginning of your presentation. Also, if you're hosting a public event, you need to feed people and provide them with refreshments, especially when folks are coming here after long work days and picking their kids up from school.	There were six in-person public meetings held in communities across Alaska. In addition, there were four virtual public meetings held. The transcripts of the in-person are posted to BLM's ePlanning project website, as are the recordings of the virtual public meetings (https://eplanning.blm.gov/eplanning-ui/project/2015144/51).
Anderson	Bridget	-	80403	4	To reiterate what both Doreen said, what Morrie said, and what Asisaun said, is there is no feeling of respect from anyone in this region at this point. The leadership of multiple entities who represent and serve the North Slope Inupiat requested multiple times to have this meeting rescheduled. We were given a two-day business notice on this. And I don't understand how DOI can say that this is working when indigenous voices are being ignored, and in this case, from what you just shared, so a media representative could be here. When does our schedule matter? When does subsistence rights actually matter? Because we're at a point right now what we're feeling is that we are completely ignored and cast aside. I think, to process, do you think that a two-business-day heads-up is an appropriate timeline?	The dates of the public meetings were coordinated and approved with community leadership via telephone and email.
Anderson	Bridget	-	80403	5	And what was your response when -- I believe it was ICAS that responded and gave a response again saying Monday doesn't work. As the mayor pointed out, and Morrie pointed out, tonight is the community celebration for our mayor of the North Slope Borough, who is ending his term here in just a few days. So Morrie's point that there would be more people here if you guys had taken into account the requests of the region, and Utqiagvik specifically.	The dates of the public meetings were coordinated and approved with community leadership via telephone and email.
Edwardson	George	-	80404	1	We have 13,000 people that are in our, you know, regional tribal government, and you see less than a handful right here, because we weren't notified this was going to happen until this -- until, you know, you showed up.	The dates of the public meetings were coordinated and approved with community leadership via telephone and email.
Jones	Craig	-	80405	3	I'd just like to request that we have an in-person meeting in Anchorage, if there isn't already one scheduled. I understand there's a couple of Zoom meetings scheduled, but I think in-person would be more appropriate. And a lot of the shareholders -- a lot of shareholders from up in the North Slope, as well as the Interior villages, have residents in Anchorage.	An in-person meeting was held in Anchorage on October 16, 2023.
Leavitt	Doreen	-	80406	1	Did anyone from the North Slope relay with this message that this meeting time wasn't going to work?	The dates of the public meetings were coordinated and approved with community leadership via telephone and email.
Leavitt	Doreen	-	80406	2	What is the internal policy for notifying public meetings such as this?	A press release was distributed on September 6, 2023 announcing the publication of the Draft SEIS and where to find information on public meetings and hearings. The Notice of Availability of the Draft SEIS was published on September 8, 2023. Methods of notifying the public of opportunities for involvement include newspapers, emails, websites, social media, flyers, and Federal Register notices, among others.
Leavitt	Doreen	-	80406	3	So again, for the record, I'm going to just make some comments on that. So on September 21st after our local regional leadership, we felt that this meeting needed to be rescheduled because -- for a number of reasons. One, subsistence and our traditional hunting; two, because of our Internet connectivity has been down since June and just got back up. And then we didn't get -- I had e-mailed the response, as well as four other regional agencies within our region requested that meeting request. Because of Internet connectivity, I didn't get your response till today.	The dates of the public meetings were coordinated and approved with community leadership via telephone and email.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Leavitt	Doreen	-	80406	4	So in the tribe's opinion, a reporter that was coming -- that was planning on coming had more precedence than other Native village tribes. And our local regional -- like the North Slope Borough having a big celebration tonight, you have here one representative from the borough, the City of Utqiagvik, Inupiat Community of the Arctic Slope, and our AMC, who at the last minute was able to get here. So again, you're not listening to the tribes. And according to your own DOI manual, it says, if a notice announced a scheduled tribal consultation session, the bureau office will ensure that the notice to the tribes is given at least 30 days prior to the scheduled consultation. If exceptional circumstances prevent notification within 30 calendar days, an explanation for the abbreviated notification will be provided in an invitation letter. So is it because of the -- because of news reporters were coming and you were coming, not because tribes had that priority of setting those dates? If the notice -- if the notice announces the opportunity to consult without a scheduled tribal consultation session, the notice will be given to tribal leaders at least 30 calendar days, preferably 45 calendar days. We got the notice that you were coming on -- I believe it was last week. So I just wanted to say that the short, unreasonable timeline, of which going through 1,400 pages and when this came out, and that's the reason why we asked to reschedule, was giving our local region enough time, get through whaling, and reschedule for the end of the month, which it was not honored.	The dates of the public meetings were coordinated and approved with community leadership via telephone and email. Public meetings and Section 810 hearings are not considered Tribal consultation meetings.
Lemen	Morrie	-	80407	1	You know, the points that my natural resource director made are really important because of the break in the fiber optics that happened up here in the North Slope. We've been struggling to get connectivity. Just recently they got it fixed. You know, we've been struggling with Starlink, trying to make it work in a business environment with a lot of issues and everything else like that, and to try and download, you know, 1,400 pages on the Internet was next to impossible. You know, it wasn't doable. So, you know, to really sit here and make comment to any of the document that was put out or anything like that is a little shortsighted on our behalf. You know, we still felt that this meeting should have been postponed. Thank you.	Hard copies were distributed to Utqiagvik, Kaktovik, Arctic Village, Venetie, and Fort Yukon, and were also available upon request. The public comment period was extended from October 23, 2023 to November 7, 2023 to allow additional opportunities to review the document and provide comments.

U.3.35 Public Outreach

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Erickson	Diloolaa	-	80360	1	And if you truly want to listen to the indigenous knowledge and you truly want to acknowledge their stewardship, then you need to listen to what they're saying, which is no action. And I know that the laws say you have to have action and that you guys are the messengers for the bigger Bureau of Land Management decision-makers, but as the messengers, I urge you, it is important for you to convey -- you know, if you truly honor and respect their stewardship, to listen to them and to uplift their voices and to do the things that have been asked here, you know, give them adequate notice of these meetings. Give them the hard copies of the SEIS before you even come out here. Give them time to read it and to talk to their community members. People out here in the villages, we're busy. They have to go out and be on the land, they have to harvest, they have to process to live their way of life out here. So they need time, more time than the 30 days the SEISs are given, more time even than, like, sometimes I know you extend them to 60 days, but that's not enough. If you really want to listen, you need to give them the time to listen.	The Draft SEIS was made available to be examined at the BLM Alaska State Office, BLM Alaska Arctic District Office, and the USFWS Arctic National Wildlife Refuge Office, and were also available for download from the BLM ePlanning project website at https://eplanning.blm.gov/eplanning-ui/project/2015144/51 . These details were described in the Notice of Availability of the Coastal Plain Oil and Gas Leasing Program Draft SEIS that was published in the Federal Register on September 8, 2023. The comment period was extended from October 23, 2023 to November 7, 2023.
Peter	Enei Begaye	-	80363	1	And in thinking about this Draft Supplemental Environmental Impact Statement, which we don't currently even have a hard copy of yet, so it's -- while I've read summaries of it, some summaries, it's difficult to give a lot of comments on things when we don't even have the draft EIS in hand.	The Draft SEIS was made available to be examined at the BLM Alaska State Office, BLM Alaska Arctic District Office, and the USFWS Arctic National Wildlife Refuge Office, and were also available for download from the BLM ePlanning project website at https://eplanning.blm.gov/eplanning-ui/project/2015144/51 . These details were described in the Notice of Availability of the Coastal Plain Oil and Gas Leasing Program Draft SEIS that was published in the Federal Register on September 8, 2023. Hard copies were distributed to Utqiagvik, Kaktovik, Arctic Village, Venetie, and Fort Yukon, and were also available upon request.
Peter	Enei Begaye	-	80363	8	And I think, finally, final thoughts are just that the accessibility of this information is inadequate as well. We, as I mentioned, don't have hard copies of the EIS. That should come out before we're getting hearings. I think the downloading of these things on the Internet is difficult, especially in rural communities. In addition, as you heard, many people are not first language English speakers. So being able to have an understanding of what these alternatives are in language -- with language accessibility is key.	The Draft SEIS was made available to be examined at the BLM Alaska State Office, BLM Alaska Arctic District Office, and the USFWS Arctic National Wildlife Refuge Office, and were also available for download from the BLM ePlanning project website at https://eplanning.blm.gov/eplanning-ui/project/2015144/51 . These details were described in the Notice of Availability of the Coastal Plain Oil and Gas Leasing Program Draft SEIS that was published in the Federal Register on September 8, 2023. Hard copies were distributed to Utqiagvik, Kaktovik, Arctic Village, Venetie, and Fort Yukon, and were also available upon request. The public meeting presentation was translated into Gwich'in and Inupiat, and was made available on the BLM ePlanning project website referenced above.
Garnett	Tonya	-	80371	2	So we were given this opportunity to speak on protecting the caribou, again. We've been given this opportunity to -- to speak to protect our way of life, again. You know, it's getting tiresome for our people. We're constantly having to be vigilant, watching documents such as the SEIS or the EIS, and those are thick documents of technical language that our people don't understand. So we have -- we're -- we're grateful that we have people that help us to decipher that language and make us understand them. Like Hilda was saying, we translated a portion of the EIS, just a little portion of it, and by doing that our elders in the room, after several days of working on it, they were able to understand what the EIS was saying. And so if it takes that much work for them to understand -- we have thousands of Gwich'in people up there -- and thousands of people that do not understand what this SEI- -- this EIS, SEIS, is saying, and it's basically giving the -- it's basically giving the options for how -- which option do you want, the worse or the less worse to -- to destroy our way of life	The Draft SEIS was made available to be examined at the BLM Alaska State Office, BLM Alaska Arctic District Office, and the USFWS Arctic National Wildlife Refuge Office, and were also available for download from the BLM ePlanning project website at https://eplanning.blm.gov/eplanning-ui/project/2015144/51 . These details were described in the Notice of Availability of the Coastal Plain Oil and Gas Leasing Program Draft SEIS that was published in the Federal Register on September 8, 2023. The public meeting presentation was translated into Gwich'in and Inupiat, and was made available on the BLM ePlanning project website referenced above.
Anderson	Bridget	-	80403	7	So I guess I'm kind of struggling to understand your lack of knowledge about the fiber impact. One, it's my understanding that the owner of the fiber line has been in communication with BLM about alternative routes and -- but I don't know if you know when the line was restored and the providers that reached out.	Hard copies were distributed to Utqiagvik, Kaktovik, Arctic Village, Venetie, and Fort Yukon, and were also available upon request. The public comment period was extended from October 23, 2023 to November 7, 2023 to allow additional opportunities to review the document and provide comments.
Anderson	Bridget	-	80403	8	Okay. So, I mean, even the news stories about it in the ADN and the Arctic Sounder, you didn't see those? They started in June. And connectivity was stored on -- it was the 18th, 19th, or 20th. Last week the fiber was repaired and then the providers began the switch-over to start using that. I guess, taking that into consideration -- so it doesn't sound like any of these communications were taking place between the Alaska office and D.C.?	Hard copies were distributed to Utqiagvik, Kaktovik, Arctic Village, Venetie, and Fort Yukon, and were also available upon request. The public comment period was extended from October 23, 2023 to November 7, 2023 to allow additional opportunities to review the document and provide comments.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Leavitt	Doreen	-	80406	5	September 6th we wake up to the news that the DOI single-handedly canceled the leases in the 1002 area in ANWR and also put aside 13 million acres within NPRA. We heard about it in the news 19 days ago. Two days later, more than 1,400 pages of the draft SEIS were posted online. How long does it take you to read and process 1,400 pages? Well, it takes us a little bit longer than that. Ten days later, on the 18th, so just one week ago, BLM posted of the public meeting schedule with dates for some locations, including Barrow, and then Kaktovik as to be determined. So again, two days later, just last Wednesday, the public meeting date and time was shared with some entities in our region, not all. Once again, I'll reiterate, the only region affected by this decision is the North Slope. This past Thursday through Saturday many of our fellow leaders of the North Slope wrote to you that this does not work for us, but yet, here we are today. So we definitely think there's something wrong with this situation, and trying your best is not good enough. And respecting the tribe's wishes was not honored.	The dates of the public meetings were coordinated and approved with community leadership via telephone and email. Hard copies were distributed to Utqiagvik, Kaktovik, Arctic Village, Venetie, and Fort Yukon, and were also available upon request. The public meeting presentation was translated into Gwich'in and Inupiat, and was made available on the BLM ePlanning project website referenced above.

U.3.36 Purpose and Need

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Warren	Greg	-	72931	3	Draft SEIS: Purpose and Need at 1-3 states, "Any oil and gas program alternative must consider all five statutory purposes of the Arctic Refuge, none of which are superseded by any other (see Table 1-2)." Comment: The statement, "Any oil and gas program alternative must consider all five statutory purposes of the Arctic Refuge, none of which are superseded by any other" does not adequately described a criterion for alternative development. The Tax Act requires some level of oil and gas development, but does not diminish the need to protect surface resources. The Coastal Plain must continue to address, in part, a purpose of ANILCA, which states, "It is the intent of Congress in this Act to preserve unrivaled scenic and geological values associated with natural landscapes; to provide for the maintenance of sound populations of, and habitat for, wildlife species of inestimable value to the citizens of Alaska and the Nation, including those species dependent on vast relatively undeveloped areas; to preserve in their natural state extensive unaltered arctic tundra, boreal forest, and coastal rainforest ecosystems, to protect the resources related to subsistence needs; to protect and preserve historic and archeological sites, rivers, and lands, and to preserve wilderness resource values and related recreational opportunities including but not limited to hiking, canoeing fishing, and sport hunting, within large arctic and subarctic wildlands and on free flowing rivers; and to maintain opportunities for scientific research and undisturbed ecosystems" (ANILCA Sec. 101 (B)). The Purpose and Need should recognize that Public Law 115-97 directs that the BLM promulgate new regulations, "Secretary shall manage the oil and gas program on the Coastal Plain in a manner similar to the administration of lease sales under the Naval Petroleum Reserves Production Act of 1976 (42 U.S.C. 6501 et seq.) (including regulations)." The Tax Act directs that BLM follow processes that are similar to the 42 U.S.C. 6501 regulations, which indicates that the law excludes specific direction in 43 CFR Parts 3130, 3150, and 3160 for authorities for an action or process in the Arctic National Wildlife Refuge.	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97.
Allen	Mark	Government of Canada	79200	43	Canada's comments on the original draft EIS noted that section 1.15 of the National Wildlife Refuge System Mission and Goals and Refuge Purposes11 explains that "Purposes dealing with the conservation, management, and restoration of fish, wildlife, and plants and the habitats on which they depend take precedence over other purposes in the management and administration of a refuge unless otherwise indicated in the establishing law, order, or other legal document." There are several places in the draft SEIS where it states that none of the five statutory purposes of the Arctic Refuge supersedes any other (e.g., on page ES-2, or p. 1-3). Canada requests clarification of how PL 115-97 creates the circumstances whereby the National Wildlife Refuge System Mission and Goals and Refuge Purposes statement above (conservation paramountcy) is not applicable in the Coastal Plain. 11 https://www.fws.gov/policy/601fw1.html	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97.
Larsen	Lynn	-	79834	1	As far as recent proposals: Alternatives B, C, and D allow too much emphasis on oil and gas development, which overpowers the original four conservation purposes specified in ANILCA. This fifth purpose is incompatible with the other four. Even alternative D, which is the best alternative, does not protect fish and wildlife and their habitats, particularly for the Porcupine caribou herd and the polar bears.	All action alternatives are designed to meet the purpose and need, and to account for all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis. Alternative D2, consistent with the Section 20001(c)(1) of PL 115-97, also focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for sale. Alternative D2 also includes new no leasing areas on the coastal areas around the Canning/Staines rivers and in Camden Bay to further protect polar bears, and addresses how an Authorized Officer would need to coordinate with USFWS prior to waiving or modifying stipulations and required operating procedures.
Moriarty	Kara	Alaska Oil & Gas Association	79980	5	The Purpose and Need statement acknowledges that the Tax Act requires at least two lease sales to be held by December 22, 2024, but ignores that at least one of them needed to be completed by December 22, 2021. By canceling the 2021 leases, the DOI has fallen out of compliance with the Tax Act.	The BLM conducted its first lease sale in the Coastal Plain on January 6, 2021. A total of nine tracts were leased in this first lease sale. This sale met the requirements of the Section 20001(c)(1) of PL 115-97.
Moriarty	Kara	Alaska Oil & Gas Association	79980	6	Alternatives C and D do not meet the purpose and need as informed by the Tax Act because they restrict designating certain areas as opened or closed to leasing, permit less than 2,000 acres of surface development through the Coastal Plain, and prohibit surface infrastructure in sensitive areas contrary to the Tax Act's requirements.	All action alternatives are designed to meet the purpose and need, and to account for all purposes of the Arctic National Wildlife Refuge. Section 20001(c)(3) of the PL 115-97 states "the Secretary shall authorize up to 2,000 surface acres." Alternatives that include estimated acreages of surface disturbance less than 2,000 acres fall within this limit.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Moriarty	Kara	Alaska Oil & Gas Association	79980	18	The Draft SEIS must adhere to certain obligations mandated by law. For example, the Draft SEIS states that its "purpose" is to "inform the BLM's administration of the oil and gas leasing program in the Coastal Plain consistent with PL 115-97," and that the "need" is dictated by certain requirements in Section 20001 of the Tax Act.(63) The Draft SEIS's Purpose and Need Statement, however, is incomplete and glosses over key requirements in the Tax Act, which subsequently taints the scope of alternatives considered and the analysis of environmental effects. (63) Draft SEIS at § 1.3. The Associations emphasized certain fundamental points in our 2019 comments and requested that the Draft EIS be revised for consistency with the Tax Act. Specifically, we requested: (1) the Final EIS include a complete Purpose and Need statement consistent with congressional intent; (2) that BLM correct its application of the 2,000-acre surface area occupancy restriction; and (3) that BLM remove broad surface occupancy restrictions and setbacks at this leasing stage and allow area-wide access in the exploration phase while leaving appropriate surface mitigation measures to be determined later, once development plans are proposed.	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. Section 1.9.1 of the SEIS has been revised to describe the production and support facilities that are included in the 2,000-acre limit.
Moriarty	Kara	Alaska Oil & Gas Association	79980	19	The Purpose and Need statement must fully and accurately characterize the Tax Act's congressional mandate to establish and administer a competitive oil and natural gas leasing program for the development, production, and transportation of oil and natural gas in and from the Coastal Plain. In the Draft SEIS, BLM states that: Purpose: The joint lead agencies are undertaking this Leasing SEIS to inform the BLM's administration of the oil and gas leasing program in the Coastal Plain consistent with PL 115-97. Need: Section 20001 of PL 115-97 requires the Secretary of the Interior, acting through the BLM, to establish and administer a competitive oil and gas program for the leasing, development, production, and transportation of oil and gas in and from the Coastal Plain area within the Arctic Refuge. Further, Section 20001(c)(1) of PL 115-97 requires that at least two lease sales be held by December 22, 2024, and that each sale offer for lease at least 400,000 acres of the highest hydrocarbon potential (HCP) lands within the Coastal Plain, allowing for up to 2,000 surface acres of federal land to be covered by production and support facilities. Any oil and gas program alternative must consider all five statutory purposes of the Arctic Refuge, none of which are superseded by any other (see Table 1-2).(64) (64) Draft SEIS at § 1.3 (emphasis in original). However, BLM conveniently ignores a critical shortcoming created by the administration's decision to cancel the remaining leases issued under the 2021 lease sale, which effectively undid that lease sale in its entirety. Specifically, the Tax Act requires two lease sales to be held by December 22, 2024-but, it very specifically requires one lease sale by December 22, 2021, and another lease sale by December 22, 2024. The Purpose and Need statement's reference to administration of the Coastal Plain Oil and Gas Leasing Program "consistent with PL 116-97" is therefore misleading and inaccurate. The Associations also disagree with the Draft SEIS's suggestion that all five statutory purposes of the Arctic Refuge should receive equal weight in this review. Even if no single purpose is entirely "superseded" by another, given that the overarching reason for the amendments made by the Tax Act were to implement an oil and gas leasing program in the Coastal Plain, that purpose should receive greater weight.	The BLM conducted its first lease sale in the Coastal Plain on January 6, 2021. A total of nine tracts were leased in this first lease sale. This sale met the requirements of the Section 20001(c)(1) of PL 115-97 to hold the first lease sale by December 22, 2021.
Strassenburgh	John	-	80071	12	The 4 goals of the Arctic Refuge, according to ANILCA are: 1. To conserve animals and plants in their natural diversity, 2. ensure a place for subsistence hunting and gathering activities, 3. protect water quality and quantity, 4. and fulfill international wildlife treaty obligations. The 2017 Tax Act added a fifth goal, "provide for an oil and gas program on the Coastal Plain." ANILCA's 4 goals are compatible with and mutually supportive of one another in the protection and furtherance of the natural character and cultural use of the Arctic Refuge. The fifth is not only incompatible with the other original 4 goals; it is destructive to all of them. It is not possible to have an oil and gas program without harming the other 4. The fifth goal is not legitimate in part because of this fundamental incompatibility, but also because Section 20001 of the Tax Act came about through an abuse of the budget reconciliation process. Section 20001 is illegitimate. It is incompatible with, contrary to, and destructive of what the Arctic Refuge is all about. The draft SEIS indicates that it must balance all 5 goals. The draft SEIS fails to do so; which is understandable because, given the incompatibility, it's not possible.	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Flint	Alison	The Wilderness Society	80125	2	The draft SEIS purpose and need statement properly recognizes that any oil and gas program must comply with other Arctic Refuge purposes.(6) However, the agencies list only the ANILCA statutory purposes and fail to include the original three purposes (wildlife, wilderness, and recreational values) from Public Land Order 2214 establishing the Arctic National Wildlife Range. This approach is contrary to FWS policy(7) and must be remedied in the final SEIS. The ANILCA purposes supplement the original three purposes, with all seven conservation purposes superseding the subsequent oil and gas purpose, pursuant to FWS policy.(8) (6) DSEIS at 1-2. (7) U.S. Fish & Wildlife Service, National Wildlife Refuge System Mission and Goals and Refuge Purposes, 601 FW 1, 1.16 (July 26, 2006); U.S Fish and Wildlife Service, Arctic National Wildlife Refuge, Revised Comprehensive Conservation Plan Final Environmental Impact Statement at 1-21; see also ANILCA § 305 (preceding public land orders remain in force and effect if not inconsistent with provisions of the Act). (8) See ANILCA § 303(2)(B); 601 FW 1, 1.15.	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97.
Brisson	Brook	Trustees for Alaska	80131	53	The draft SEIS fails to include the original three purposes from the 1960 Range designation among the recognized Arctic Refuge purposes, acknowledging only the four original ANILCA purposes plus the Tax Act purpose.(294) FWS policy is clear the original three purposes set out in PLO 2214 apply to the Coastal Plain equal with its other purposes.(295) The agencies must include the three purposes from PLO 2214 among the purposes of the Coastal Plain outlined in the draft SEIS and specify that the Leasing Program must also be consistent with these purposes.(296) By not recognizing or including the original three purposes in its analysis, BLM and FWS cannot ensure that an oil and gas program would be consistent with Refuge purposes. (294) DSEIS at 1-5, App. D at D-3. (295) ANILCA § 305; FWS Refuge Management Part 601 National Wildlife Refuge System, 601 FW 1 at 1.16 (July 26, 2006); U.S Fish and Wildlife Service, Arctic National Wildlife Refuge, Revised Comprehensive Conservation Plan Final Environmental Impact Statement at 1-21 [hereinafter CCP EIS]. (296) DSEIS at 1-3 (explaining that alternatives "must be consider all five statutory purposes of the Arctic Refuge, none of which are superseded by any other").	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97.
Brisson	Brook	Trustees for Alaska	80131	54	Additionally, while the Tax Act added an additional purpose for the Coastal Plain for the oil and gas program,(297) the Tax Act did not prioritize the oil and gas purpose over any of the seven pre-existing purposes and in no way altered the applicability of the NWRSAA or ANILCA. BLM and FWS state that no purpose is "superseded" by any others.(298) However, as Groups pointed out in prior comments, FWS policy instructs that the oil and gas purpose of the Coastal Plain is subservient to the seven conservation purposes.(299) FWS's policy manual states the following regarding refuges with multiple purposes and priority of purposes: (297) Pub. L. 115-97, Title II, sec. 20001(b)(2)(B)(iii). (298) DSEIS at 1-3. (299) 2019 DSEIS Comment Letter at 64-65.	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97.
Brisson	Brook	Trustees for Alaska	80131	55	If a refuge has multiple purposes, do some purposes take priority over others? Purposes dealing with the conservation, management, and restoration of fish, wildlife, and plants and the habitats on which they depend take precedence over other purposes in the management and administration of a refuge unless otherwise indicated in the establishing law, order, or other legal document. The Improvement Act states that "compatible wildlife-dependent recreational uses are the priority general public uses of the System and shall receive priority consideration in refuge planning and management."(300) (300) U.S. Fish and Wildlife Service, 601 FW 1, 1.15, National Wildlife Refuge System Mission and Goals and Refuge Purposes (July 26, 2006) (emphasis added), available at: https://www.fws.gov/policy/601fw1.html . Despite this directly applicable policy, the agencies continue to fail to recognize that the seven conservation purposes are the priority purposes for the Coastal Plain. The final SEIS should correct this. To the extent that BLM and FWS believe that this policy does not apply, they should explain that reasoning, given that Congress is presumed to know these policies when it passes laws.	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Heslep	Alison	-	80164	15	#1 Ch/Sec/Sub-sec 1.5.1 Title Arctic National Wildlife Refuge Comment(s) Section 1.5.1 of the draft SEIS outlines the five purposes of the ANWR, as dictated by the Alaska National Interest Lands Conservation Act (ANILCA). Of those five purposes, only one provides for an oil and gas program in the Coastal Plain. The other four purposes can be summarized as providing for the conservation of fish and wildlife populations, the fulfillment of international fish and wildlife treaty obligations of the U.S., the opportunity for continued subsistence uses by local residents, and the ability to ensure water quality and necessary water quantity within the refuge. To better align the oil and gas program in the Coastal Plain with the other four purposes of the ANWR, the minimum amount of lease sales required under the Tax Cut and Jobs Act (PL 115-97) should be selected. Additionally, the minimum amount of land required under the Tax Cut and Jobs Act should be offered during each lease sale. This would meet the objective of the Tax Cut and Jobs Act while providing for a more balanced and sustainable approach to development. Limiting the number of oil and gas lease sales in the Coastal Plain to two lease sales and the minimum amount of land would better align with the 1987 international Porcupine Caribou Agreement between the Government of Canada and the Government of the United States on the Conservation of the Porcupine Caribou Herd (IPCA) than allowing more than two lease sales or allowing more than the minimum amount of land for lease. Beyond better aligning with the purpose and goals of ANILCA and the IPCA, limiting the number of lease sales to the minimum number and size required would reduce the potential impacts to critical calving and post-calving habitat for the Porcupine Caribou Herd (PCH) and polar bear denning areas. Recommendation(s) The GNWT recommends the BLM limit the number of oil and gas lease sales in the Coastal Plain to two sales, which is the minimum number of lease sales required under the Tax Cut and Jobs Act. The GNWT recommends that BLM confine lease offerings to 400,000 acres for each lease sale. The GNWT encourages the BLM to contact the Yukon Government for updates to the frequency of use of data layers for the PCH. This data should be used when deciding which land parcels to further remove from lease sales.	BLM will comply with the required two lease sales. Alternative D2 was added to the Final SEIS range of alternatives, which makes 400,000 acres available for lease sale.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	10	To comply with the Refuge Act and ANILCA, the agencies must: 1. include in the final SEIS all the original purposes of the Refuge and 2. develop a compatibility determination for the proposed oil and gas leasing program. During the development of the draft SEIS, the Tribes requested that the agencies include in the SEIS the original Arctic National Wildlife Range purposes in PLO 2214 ("for the purpose of preserving unique wildlife, wilderness, and recreational values") and ensure that all Refuge purposes are respected. To that end, the Tribes requested that the agencies include in the SEIS the proper legal framework that no one Refuge purpose supersedes another while also ensuring that USFWS's co-lead role endures through NEPA compliance to any future stages of the program. The agencies have failed to incorporate the Tribes' recommendations into the draft SEIS. To comply with the requirements of the Refuge Act and ANILCA, the agencies must make these changes prior to a final SEIS.	Section 1.3 of the SEIS notes that none of the statutory purposes of the Refuge are superseded by any other. A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97. Although Section 20001(a)(2) and (b)(2)(A) of PL 115-97 assigns sole responsibility to the BLM for administering the oil and gas program, it is understood that all activities, including plan development, study development, and consideration of exceptions, modifications, waivers, or any operations that will be conducted on the surface of the Refuge would include coordination with the USFWS to ensure that its considerations as the surface management agency are taken into account. Compatibility determinations stem from the Refuge Administration Act, which only applies to the USFWS' management of refuges.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	11	While the agencies now correctly acknowledge that no single purpose of the Refuge is superseded by any other,(50) the draft SEIS continues to fail to acknowledge the original three purposes in the 1960 Range designation PLO.(51) The Tribes reiterate their request that the agencies include the original Range purposes found in PLO 2214 in the final SEIS and specify that any leasing program adopted be consistent with these three purposes. That these original purposes remain valid is evident in the law, as ANILCA did not override them. Indeed, USFWS's Arctic Refuge Comprehensive Conservation Plan ("Refuge CCP") specifically acknowledges and directs its management of the Arctic Refuge to the original Range purposes as well as the purposes that originated in ANILCA.(52) As it currently reads, the draft SEIS not only fails to acknowledge the original Range purposes(53) but it does not address them in its analyses of the impacts of the oil and gas leasing program.(54) The agencies need to rectify this in the final SEIS. (50) Draft SEIS at 1-3. As the Tribes noted in a June 16, 2023, letter to the agencies, this acknowledgment of parity among the Refuge purposes is critically important to the integrity of the SEIS and to any decision that flows from it, since there is tension between the original Refuge purposes and the Tax Act's addition of an oil and gas leasing program to those purposes. While the original purposes are complimentary to one another in that respecting one does not readily lead to conflicts with another, that is not true of the new oil and gas purpose. History has shown that the act of exploring for and extracting oil and gas can have significant consequences for the environment, including to wildlife, water, and other human uses of that environment. (51) Draft SEIS at 1-5, Table 1-2. (52) See USFWS, Arctic National Wildlife Refuge Revise Comprehensive Conservation Plan, 1-21 (Jan. 2015) ["hereinafter Arctic Refuge CCP"] https://ecos.fws.gov/ServCat/DownloadFile/202893 . (53) Draft SEIS at 1-5. (54) See Draft SEIS at 1-5, Table 1-2. See infra Section VIII.E.2 for an example illustrating how the failure to incorporate all Refuge purposes in the analysis of impacts throughout the SEIS renders the discussion of direct, indirect, and cumulative impacts legally deficient.	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	12	This brings up another point related to the relationship between BLM and USFWS in ensuring that all Refuge purposes are respected and that no one purpose supersedes another-the legal requirement that USFWS conduct a compatibility determination prior to any lease sales. Each refuge "shall be managed to fulfill the mission of the System, as well as the specific purposes for which that refuge was established."(55) The Secretary of the Interior also "shall not initiate or permit a new use of a refuge or expand, renew, or extend an existing use of a refuge, unless the Secretary has determined that the use is a compatible use."(56) A use is "compatible" if it will not "materially interfere with or detract from the fulfillment of the mission of the [National Wildlife Refuge] System or the purposes of the refuge."(57) Compatibility determinations must be in writing and based on the Secretary's "sound professional judgment."(58) "Sound professional judgment" means a decision "that is consistent with principles of sound fish and wildlife management and administration, available science and resources, and adherence to the requirements of [the Refuge] Act and other applicable laws."(59) (55) 16 U.S.C. § 668dd(a)(3)(A). (56) Id. § 668dd(d)(3)(A)(i). (57) Id. § 668ee(1). (58) 50 C.F.R. § 25.12. (59) 16 U.S.C. § 668ee(3).	Section 20001(a)(1) of PL 115-97 explicitly directs that the Coastal Plain oil and gas program be managed by the Secretary of the Interior, acting through the BLM. Therefore, that authority cannot be delegated to USFWS. A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97. Stipulations and ROPs have been updated to reflect that the BLM Authorized Officer will coordinate with the USFWS.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	13	DOI is obliged by law to comply with all purposes of the Refuge and to ensure that any uses of the Refuge are compatible. Thus, as the Tax Act did not abrogate USFWS's refuge management obligations, the final SEIS should include a compatibility determination that covers the proposed oil and gas leasing program, regardless of BLM's Tax Act decision-making authority on oil and gas program-related matters. In addition, given the deep challenge to ensure that all uses of the Refuge are compatible-caused by the Tax Act's addition of a new purpose that can so easily overwhelm the other purposes-USFWS must collaborate with BLM in implementing an oil and gas program. The co-lead role for this SEIS honors that, and that co-lead relationship should endure through NEPA compliance for any future stages of the program.	Section 20001(a)(1) of PL 115-97 explicitly directs that the Coastal Plain oil and gas program be managed by the Secretary of the Interior, acting through the BLM. Therefore, that authority cannot be delegated to USFWS. A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97. Stipulations and ROPs have been updated to reflect that the BLM Authorized Officer will coordinate with the USFWS during program implementation.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	49	As an initial matter, the Tribes are encouraged to see that the purpose and need statement acknowledges any oil and gas program alternative "must consider all five statutory purposes of the Arctic Refuge, none of which are superseded by any other."(157) While this is encouraging, the Tribes also ask the agencies add to the purpose and need statement the original three purposes set out for the Range ("for the purpose of preserving unique wildlife, wilderness and recreational values"),(158) as USFWS has acknowledged these purposes apply to the Coastal Plain management today.(159) (157) Draft SEIS at 1-3. (158) PLO 2214 at 1. (159) Arctic Refuge CCP at 1-21.	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	51	-Seismic: The purpose and need statement should specifically discuss how seismic activities will be analyzed in the SEIS. The SEIS should not defer analysis of seismic to later NEPA processes. To include seismic activities, the purpose and need statement can be amended to avoid language contained in the 2019 Final EIS (such as the SEIS "may also inform post-lease activities, including seismic and drilling exploration") and rather make it explicit that the SEIS will indeed be used to inform post-lease activities. To the extent that the SEIS is used to inform post-lease activities, the analysis of impacts must be robust and place based.	Appendix C explains the different types of seismic exploration that are analyzed in the SEIS. Seismic exploration can be done absent a lease (a lease is not required). Separate NEPA analyses would be completed for all seismic exploration applications, which would analyze the site-specific impacts.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	52	-Recognize ANILCA and other laws: The purpose and need statement should be updated to include recognition of ANILCA, the Refuge Act ("Refuge Act"), and NHPA ("NHPA") as well as the dictates of NEPA. The purpose of the SEIS should be updated to explicitly mention that all alternatives will be formulated to ensure compliance with these laws. These laws should then form the basis of the range of alternatives that will be analyzed in the SEIS. For instance, the alternatives developed must guarantee compliance with the mandates of the Refuge Act ensuring "the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources"(160) within the Arctic Refuge. By way of another example, the alternatives developed must guarantee compliance with the mandates of ANILCA to "provide for the maintenance of sound populations of, and habitat for, wildlife species of inestimable value to the citizens of Alaska...; protect the resources related to subsistence needs;" and "provide the opportunity for rural residents engaged in a subsistence way of life to continue to do so."(161) (160) 16 U.S.C. § 668dd(a)(2). (161) 16 U.S.C. § 3101(b) & (c).	All action alternatives are designed to meet the Purpose and Need, and to account for all purposes of the Arctic National Wildlife Refuge. The BLM must ensure that BLM-authorized activities comply with all applicable federal, state, Tribal, and local laws and regulations (see Appendix E).
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	53	-Include USFWS's Statutory Mandates: With the addition of USFWS as a co-lead agency in the development of the SEIS, the purpose and need statement should be updated to include the USFWS's statutory mandates and management principles of ANLICA and the Refuge Act, the agency's role as manager of the Arctic Refuge, and the dictates of the 2015 Comprehensive Conservation Plan for the Arctic Refuge. Nothing in the Tax Cuts and Jobs Act of 2017 diminishes or amends the USFWS's managerial obligations for the surface estate of the Arctic Refuge. Indeed, the USFWS will have to regulate multiple aspects of the oil and gas program as the Refuge manager, including: flight restrictions, camp locations, and animal harassment policies.	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97. Stipulations and ROPs have been updated to reflect that the BLM Authorized Officer will coordinate with the USFWS during program implementation.

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Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	54	-Incorporate Traditional Ecological Knowledge and the Sacred Place Where Life Begins as a Framework for SEIS Analysis: In line with the directives of Secretarial Order 3403 and Executive Orders 13007 and 13175, the purpose and need statement in the SEIS should be amended to include Traditional Knowledge as a framework for the SEIS development and analysis of alternatives. The purpose and need statement should make clear that the SEIS utilizes Traditional Knowledge to inform the discussion of environmental baseline and the analysis of impacts under the various alternatives. In furtherance of this, the SEIS purpose and need statement should include that one of the purposes of the SEIS is to analyze the broader impacts to Iizhik Gwats'an Gwandaii Goodlit, or the "Sacred Place Where Life Begins." Inclusion of these items is necessary to ensure a reasonable purpose and need statement that complies with NEPA.	The Final SEIS, including Appendix D, has been updated to incorporate additional Indigenous Knowledge from existing data sources as well as new information provided during the public comment period on the Draft SEIS.
Adoko	Ashlee	State Of Alaska	80221	9	The Purpose and Need Statement is flawed. The Purpose and Need Statement includes the statement, "Any oil and gas program alternative must consider all five statutory purposes of the Arctic Refuge, none of which are superseded by any other." This language erroneously suggests that ANWR's statutory purposes are on equal footing with one another. In fact, Congress did not make the oil and gas program secondary or subject to other purposes, and the purpose and need statement cannot suggest otherwise. Moreover, Section 303(2)(B) of ANILCA puts certain purposes secondary to others. For example, Section 303(2)(B) of ANILCA states that the Refuge should be managed to ensure water quality and necessary water quantity within it, but only in a manner consistent with the conservation of fish and wildlife populations and habitats.(29) Accordingly, all the Refuge's purposes are not on equal footing with one another, and the purpose and need statement cannot suggest otherwise. (29) Pub. L. No. 96-487, Sec. 303(2)(B), 94 Stat. 2390. BLM correctly determined previously that "[t]he purpose and need of the Supplemental EIS is bound by statute and remains the same as for the September 2019 [Leasing] EIS, i.e., to implement Section 20001 of Public Law 115-97." See the State's comments in its October 31, 2022, and May 31, 2022, letters to the Lead Agencies, and the State's October 4, 2021, scoping comments (enclosed and incorporated).	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97.
Wardlow	Cyndi	The Wildlife Society- Alaska Chapter	80261	1	The draft SEIS fails to include the original three purposes from the 1960 Range designation among the recognized Arctic Refuge draft purposes, instead acknowledging only the four original ANILCA purposes plus the added Tax Act purpose "to provide for an oil and gas program on the Coastal Plain". FWS policy is clear the original three purposes outlined in PLO 2214 for the Arctic National Wildlife Range apply to the Coastal Plain equally with its other purposes(1). The agencies must therefore include the original three purposes identified in PLO 2214 among the listed purposes of the Coastal Plain outlined in the draft SEIS. This would also apply to the Leasing Program being consistent with these purposes. By not recognizing or including the original three purposes in its analysis, BLM and FWS cannot ensure that an oil and gas program would be consistent with the legal purposes of the Refuge. (1) U.S. Fish and Wildlife Service, 601 FW 1, 1.15, National Wildlife Refuge System Mission and Goals and Refuge Purposes (July 26, 2006), available at: https://www.fws.gov/policy/601fw1.html .	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Wardlow	Cyndi	The Wildlife Society- Alaska Chapter	80261	3	It is important that the draft SEIS explicitly address the conflicting Refuge purposes. The draft SEIS does not explicitly address or resolve potential conflicts between the proposed leasing program and the original seven purposes (identified above) for which the Arctic Refuge was established. These conflicts must be explicitly discussed and resolved. Specifically, the draft SEIS must address how the original Refuge purposes for wildlife, fish, and water conservation; treaty obligations; and subsistence uses will be maintained through petroleum exploration and development. BLM and FWS's draft SEIS states that no purpose is "superseded" by any others. However, as has been pointed out in prior comments, FWS policy instructs that the oil and gas purpose of the Coastal Plain is subservient to the seven conservation purposes. This is clarified by FWS's policy manual that states the following regarding refuges with multiple purposes on the priority of those purposes: 1.15 If a refuge has multiple purposes, do some purposes take priority over others? Purposes dealing with the conservation, management, and restoration of fish, wildlife, and plants and the habitats on which they depend take precedence over other purposes in the management and administration of a refuge unless otherwise indicated in the establishing law, order, or other legal document."(5) (5) U.S. Fish and Wildlife Service, 601 FW 1, 1.15, National Wildlife Refuge System Mission and Goals and Refuge Purposes (July 26, 2006), available at: https://www.fws.gov/policy/601fw1.html . The Improvement Act states that "compatible wildlife-dependent recreational uses are the priority general public uses of the System and shall receive priority consideration in refuge planning and management."(6) (6) Id. Despite this completely applicable policy, the BLM and FWS continually fail to recognize that the seven conservation purposes are the priority purposes for the Coastal Plain above the oil and gas program language added by the Tax Act. The draft SEIS should correct this, especially as the most recent Refuge purpose to develop a robust oil and gas drilling program on the Coastal Plain is prohibitively exclusive to the implementation of all other seven purposes of the Arctic Refuge. To the extent that the BLM and FWS interpret this policy does not apply, they should explain this rationale in the draft SEIS, as they are the experts passing this information on to Congress who must know these policies when passing laws.	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	12	The ANWR SEIS purpose and need is set out on page 1-1: Section 20001 of PL 115-97 requires the Secretary of the Interior, acting through the BLM, to establish and administer a competitive oil and gas program for the leasing, development, production, and transportation of oil and gas in and from the Coastal Plain area within the Arctic Refuge. The BLM is undertaking this Leasing EIS to implement the leasing program consistent with PL 115-97. The Leasing EIS will serve to inform the BLM's implementation of PL 115-97, Section 20001(c)(1), which is the requirement to hold multiple lease sales. The first sentence may be factually correct, but as pointed out above, the decision at hand is based on the TCJA calling for the leasing of the areas that have the highest potential for the discovery of hydrocarbons. The purpose and need are incorrect in stating that BLM needs to "establish and administer a competitive oil and gas program for the leasing, development, production, and transportation of oil and gas." The purpose and need should be based on the decision at hand, which is to comply with the TCJA. AIDEA's reading of the original Record of Decision (ROD) is that it did not authorize exploration. The ROD states, "if and when BLM is presented with proposals for exploration or development, those decisions by BLM for specific authorizations will also be subject to project specific analysis, including compliance with NEPA and other laws." For off-shore wind, BOEM simply prepares programmatic EISs at this stage. If a lessee wants to conduct exploration, BOEM conducts another NEPA review (sometimes just an EA). If the lessee wants to develop a wind farm, BOEM conducts an EIS.	Alternative D2, consistent with Section 20001(c)(1) of PL 115-97, has been added to the Final SEIS. This alternative focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for lease sale.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	43	Topic Purpose and Need Section # 1-3 Page # 1-3 SEIS Text Purpose: The joint lead agencies are undertaking this Leasing SEIS to inform the BLM's administration of the oil and gas leasing program in the Coastal Plain consistent with PL 115-97. Need: Section 20001 of PL 115-97 requires the Secretary of the Interior, acting through the BLM, to establish and administer a competitive oil and gas program for the leasing, development, production, and transportation of oil and gas in and from the Coastal Plain area within the Arctic Refuge. Further, Section 20001(c)(1) of PL 115-97 requires that at least two lease sales be held by December 22, 2024, and that each sale offer for lease at least 400,000 acres of the highest hydrocarbon potential (HCP) lands within the Coastal Plain, allowing for up to 2,000 surface acres of federal land to be covered by production and support facilities. Comment The purpose and need statement is overly broad in stating that BLM needs to "establish and administer a competitive oil and gas program for the leasing, development, production, and transportation of oil and gas." That is what the TCJA ultimately requires, but the purpose and need should be based on the decision at hand. The SEIS states that the decisions to be made are a) which tracts to offer for leases, and b) the terms and conditions to be applied to the leases. SEIS p. 1-2. It goes on to state, "The decisions evaluated in this Leasing EIS and its ROD would not authorize any on-the-ground activity associated with the exploration or development of oil and gas resources in the Coastal Plain." The TCJA requires BLM to "lease those areas that have the highest potential for the discovery of hydrocarbons." § 20001(c)(1)(B)(i)(II). Consequently, the SEIS should have been focused on and be limited to those areas defined in the act that have the highest potential for the discovery of hydrocarbons.	Alternative D2, consistent with Section 20001(c)(1) of PL 115-97, has been added to the Final SEIS. This alternative focuses on the highest hydrocarbon potential area in the northwest portion of the program area and makes the statutory minimum of 400,000 acres available for lease sale.
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	7	The "Purpose and Need" section of the draft SEIS is vague and does not articulate the purpose or need for a new, comprehensive analysis of the Program. Rather, there is no reasoned explanation for the draft SEIS, and the exercise to "inform BLM's administration" of the Program appears to be designed to allow BLM, under a new administration, to go back and select a different alternative based on political motives. This becomes abundantly clear when you consider that the "purpose" of the draft SEIS is the same "purpose" that BLM previously provided for in the 2020 final EIS and ROD. If there are truly "legal deficiencies" serving as the rationale for the draft SEIS, then BLM must clearly articulate those details in this section.	Section 1.1 of the SEIS provides the explanation for the need to prepare a supplemental NEPA document. There were no legal deficiencies identified in the 2019 Final EIS related to the original purpose and need; therefore, the purpose and need has not changed.
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	8	BLM and the FWS also fail to provide any information on how they will manage the lands within the 1002 Area. The agencies also fail to provide the reader with the scientific information necessary to support the need for such analysis, leading one to conclude that this undertaking is a result of a political disagreement that Congress settled in 2017. There is no "need" for a new, comprehensive analysis and the reference included in the draft SEIS is misleading and inaccurate. For example, BLM fails to identify what constitutes a "competitive oil and gas leasing program," as required by the Tax Act. Rather, it contradicts the draft SEIS in its entirety by substituting "oil and gas program alternative" for "oil and gas leasing alternative."(28) The "need" section does not even cite the five laws governing the Program, a fundamental flaw by any account. (28) Id. (stating "Any oil and gas program alternative must consider all five statutory purposes of the Arctic Refuge, none of which are superseded by any other.").	The USFWS continues to be responsible for managing all federal lands on the Coastal Plain as part of the Refuge, including both leased and unleased areas. However, BLM is responsible for managing all aspects of the oil and gas program, including the issuance and administration of oil and gas leases, and permitting of all oil and gas activities. Stipulations and ROPs in Table 2-3 have been updated to reflect that the BLM Authorized Officer will coordinate with the USFWS during program implementation.
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	9	Indeed, the "need" for the draft SEIS specifically contradicts the "Decisions to be Made" section. The 2020 final EIS determined which tracts would be leased first, yet the draft SEIS offers the same exact tracts for leasing. It is illogical to think that the draft SEIS will dictate which tracts will be offered when that decision has already been made. BLM also mentions the terms and conditions being applied to leases issued pursuant to the Program, but remains silent on the competitive nature of those terms and conditions. BLM should therefore clearly define what constitutes a competitive program and how it intends to support that program. The current document simply does not support a competitive oil and gas leasing program in the 1002 Area. To date, no court has found any legal deficiencies with the final EIS, and given the time that has lapsed between 2020 and now, if such deficiencies existed, the Courts would have considered those deficiencies on the merits. There is clearly no need for the draft SEIS and BLM should therefore re-adopt "Alternative B" from the 2020 ROD and reinstate the cancelled leases.	Section 1.1 of the SEIS identifies the legal deficiencies found in the 2019 Final EIS by the Secretary of the Interior. At the time of publication of the Draft SEIS, there had only been one lease sale held (the second to be held by December 2024). Any future on-the-ground actions requiring BLM approval, including exceptions, modifications, or waivers for potential exploration and development proposals, would require further NEPA analysis and coordination with the USFWS as the surface management agency based on the site-specific proposal. Potential applicants would be subject to the terms of the lease; however, the BLM Authorized Officer may require additional site-specific terms and conditions before authorizing any oil and gas activity based on the project-level NEPA analysis.
Peter	Enei Begaye	-	80363	6	And so there are numerous, numerous issues with the draft EIS. I think that the few that I want to talk about are these climate impacts, which is a subsistence issue, the treaty obligations to relatives on the other -- in the so-called Canada, and the cumulative impacts of oil and gas development throughout the refuge. Right? So it was stated there's, like, five purposes of the refuge. This drilling leasing program is directly conflicting with the other purposes of the refuge and has not also been addressed within the draft EIS. How does this leasing then -- how does this leasing complement the other purposes? It doesn't. And so it doesn't seem that this -- it seems like no action must be taken. However, I understand the Tax Act. So the EIS hasn't fairly considered the other purposes of the refuge.	A list of where to find impacts from the oil and gas leasing program on Arctic Refuge Purposes are in Table 1-2 of the SEIS. The USFWS CCP (2015) may be revised in the future to reflect all five statutory purposes of the Arctic Refuge, as amended by Section 20001(c)(1) of PL 115-97.

U.3.37 Reasonably Foreseeable Development (RFD)

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	46	BLM and FWS need to clarify how they will regulate seismic exploration on areas open to leasing. It is unclear how BLM and FWS are treating pre-leasing seismic exploration and any proposals to conduct off-lease seismic exploration. Throughout the draft, BLM and FWS claim the SEIS is intended to inform post-lease activities, including seismic exploration.(270) There is a reference in the RFD scenario that indicates seismic exploration might occur separate from where areas are leased; that section states "[o]ff lease seismic could occur in frontier areas to inform potential future prospects."(271) It is unclear from that sentence if BLM and FWS anticipate allowing off lease seismic to occur and it appears to be at odds with every other reference to seismic exploration as being a post-lease activity. BLM and FWS also stated in the draft SEIS that they are expecting exploration of the first lease sale within two years after the lease sale.(272) But again, this appears to assume that seismic exploration would only occur on areas open to leasing, and potentially only on leased areas. BLM and FWS need to clarify whether seismic exploration will occur only after leasing or whether it can occur on unleased areas open to leasing or prior to leasing occurring in general. To protect the Coastal Plain to the maximum extent possible, BLM and FWS should expressly state that seismic exploration is limited to only leased areas and not just areas open to leasing, which could allow for additional, damaging and speculative seismic exploration. BLM and FWS should also incorporate requirements to limit the amount of seismic exploration that occurs in general since seismic can often occur repeatedly over the course of a lifetime for a particular development. (270) See, e.g., DSEIS 1-2. (271) Id. App.B at B-13. (272) Id. at 3-23; DSEIS App. B at B-11 tbl. B-3.	No pre-leasing seismic exploration on the Coastal Plain is currently being evaluated by the BLM. If an application was received prior to the Coastal Plain Oil and Gas Program ROD, it would undergo project-specific NEPA to identify potential impacts. However, at this stage, the joint lead agencies anticipate that any seismic exploration would occur after leasing and would be limited as defined in the alternatives and subsequent ROD. Applications to conduct seismic exploration within leased areas would undergo site-specific NEPA analysis.
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	12	BLM's use of the "hypothetical development scenario" fails to minimize environmental impacts, which DOI would be expected to minimize through the lease development process. Nor does it analyze a reasonably foreseeable development scenario or an economically feasible leasing and drilling program, which would be consistent with the plain text of the Tax Act. Rather, the "hypothetical development scenario" serves only to make the development of the Program impossible. It has been proven by the State of Alaska that companies can operate economically and competitively in the Arctic within a reasonable and competitive permitting structure. BLM's statement to the contrary is therefore false and subjective as there is no actual data to support such an assertion.	The hypothetical development scenario is not designed or intended to minimize environmental impacts. The hypothetical development scenario does not assert that companies cannot operate economically and competitively in the Arctic. The hypothetical development scenario provides estimates of how development might occur in the Coastal Plain under each alternative based on the proposed alternatives and what is known about fluid mineral potential in the area. These estimates are based on existing recent Arctic developments such as the Willow project, with minor operational adjustments (such as co-locating certain facilities) that would not reduce the feasibility of the development, but would reduce footprint to allow for maximum development within proposed alternative constraints.
Lampe	Charles	Kaktovik Iñupiat Corporation	80350	8	Since all the Reasonably Foreseeable Development scenarios are hypothetical modelling less than 2,000 acres of gravel fill is just as hypothetical as modelling the full amount of 2,000 acres. This doesn't improve the document at all because it's a circular argument but not a legal deficiency. It is not additive because, again, without sufficient low-impact 3-D seismic there is no way of really understanding the future of oil and gas in the 1002 Area. That is why KIC tried on several occasions to permit and participate in a modern 3-D seismic program using best available technology to better understand the prospectivity of the 1022 Area only to be shut down over the fear that it could lead to a significant discovery. However there was an equal chance that the data from such a program could have condemned the area for oil and gas. This was a more balanced approach - to know what the probabilities of oil in the 1002 Area are prior to going through this very expensive, time consuming, and difficult process. However, fear stoked by outside influences - has driven the narrative and politics of this area - our homelands. We know best how to walk lightly on this land, and we know we can allow for oil and gas without negatively impacting our future generations of Kaktovikmiut.	The RFD scenario varies the number of acres because under some alternatives less than 2,000 acres of disturbance would be expected. These acres are based on the areas available for leasing with various restrictions (NSO, CSU, TL, STC). As noted, the nature of oil and gas reserves within the Coastal Plain is speculative, therefore, consideration of a more site-specific reasonably foreseeable development scenario is not possible at the programmatic level.

U.3.38 Recreation

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	262	Birdwatching and Bird-Based Tourism. Both the Bird (3.3.3) and Recreation (3.4.6) sections fail to explicitly mention bird watching or bird-based tourism. While wildlife viewing is mentioned within the recreation portion of the draft SEIS, bird watching is not discussed. The Coastal Plain is a highly sought-after birding destination and bird-based tourism contributes significantly to Alaska's economy.(690) The final SEIS should discuss the impacts of an oil and gas program on this form of recreation. (690) See: Schwoerer T, Dawson NG (2022) Small sight-Big might: Economic impact of bird tourism shows opportunities for rural communities and biodiversity conservation. PLoS ONE 17(7): e0268594. https://doi.org/10.1371/journal.pone.0268594 .	Limited infrastructure (lodging, roads) precludes many birders from visiting the multiple habitats within the Coastal Plain to locate a diversity of bird species. Focused Arctic birding trips typically target western Alaska for a greater diversity of species, including many of the same species that occur on the Coastal Plain but in larger numbers, as well as rare bird species of Eurasian origin. Therefore, we disagree that the Coastal Plain is a highly sought-after destination for birding. The SEIS discusses potential impacts to birds in Section 3.3.3 and impacts on recreation, including wildlife viewing, in Section 3.4.6.
Yarnell	Ronald	All About Adventure	19299	5	Despite responding to the initial EIS the SEIS still has not documented the economic impacts these leases will have on the commercial wilderness operators and hunting guides that use the 1002 area. There is no list of commercial operators. There is no determination of the economic impacts leasing will have on these operators.	The effects on commercial wilderness operators and hunting guides that use the 1002 area are addressed in the Recreation Section (3.4.6) of the SEIS. The Recreation Section's affected environment sub-section described existing recreational opportunities in the region and the types of businesses associated with the recreational activities. For example, in 2021, eight commercial air service operators provided air taxi service for 811 visitors. The impacts section indicated that some of the recreation opportunities could be displaced by future exploration, development, and production of oil in the region. Quantifying the magnitude of economic impacts on these businesses however, is not possible at this time without a specific plan of development and/or a more involved survey and analysis.
Wald	Michael	-	20420	8	All alternatives should specifically address public access and ensure that subsistence and recreational users will continue to be able to utilize these public lands.	Subsistence use and access is specifically addressed in ROP 18 and while there are slight variations, would apply to all action alternatives. Recreational activities and access are considered under multiple lease stipulations and ROPs for the action alternatives.
Keim	Frank	-	53297	5	The viewshed is also an important factor to consider for purposes of adventure "tourism" on the Coastal Plain	Potential visual impacts are considered in Section 3.4.8 and account for visual impacts to recreationalists. Additionally, potential impacts on recreationalists as a result of changes in viewsheds are discussed in the environmental consequences for each action alternative in Section 3.4.6, Recreation.
Brisson	Brook	Trustees for Alaska	80131	444	The prior EIS failed to include a thorough analysis of the reasonably foreseeable direct, indirect, and cumulative impacts of all phases of an oil and gas program on recreational uses and the Leasing Program did not protect this Coastal Plain purpose. Groups are concerned that the draft SEIS still lacks a thorough analysis of the impacts of an oil and gas program on recreation.	Comment acknowledged.
Brisson	Brook	Trustees for Alaska	80131	445	Groups are glad to see BLM and FWS using more recent data on recreation use of the Coastal Plain, which shows an increase in visitor use over time (with the exception of 2020 due to COVID-19).(1214) We encourage the agencies to include additional data from the past two years in the final SEIS. Groups are disappointed that the draft SEIS still does not include information about the direct and indirect economic benefits associated with wilderness-dependent recreation.(1215) Groups encourage the agencies to include this information in the final SEIS to ensure that the analysis fully SEIS out the impacts to all users from an oil and gas program, as it is likely that recreation and the economy it supports, will decrease significantly if oil and gas development proceeds. (1214) DSEIS at 3-379. (1215) See also infra Section VI.V.	Section B.4.6 of the SEIS includes the most recent data available for recreational use of the Coastal Plain. Section B.4.11, Economy, includes a discussion of the economic value of recreation and specifically, wilderness recreation. The proposed action is for a leasing action only, which has potential indirect effects on recreation. Direct impacts on recreation and associated economic values would be addressed in subsequent NEPA for post-leasing activities.
Brisson	Brook	Trustees for Alaska	80131	447	Groups are deeply concerned that the impacts analysis suggests that protective measures, such as NSO, CSU, and TL, will minimize impacts.(1218) As explained elsewhere, NSO, CSU, and TL do not prohibit all activities or development, and the stipulations and ROPs that impose the standards can be waived, excepted, or modified. The agencies cannot, therefore, rely on these measures to reduce impacts to recreation. This is particularly so given that the recreation experience depends directly on the ability to experience the setting free from any industrial development or activities. BLM and FWS should revise the impacts analysis to remove assumptions that these measures will reduce recreation impacts. (1218) See, e.g., DSEIS at 3-384, 3-386 to 3-387.	Protective measures on leasing activities, common to all action alternatives, would improve recreational quality compared to the situations where action alternatives occur and no protective measures are in place. The assumption was modified to note that these NSO, CSU, and TL are applied to provide protections of important resources.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	448	The cumulative impacts analysis still includes the assumption that "[u]nder all alternatives, there would be an increased demand for recreation use in the program area driven by desirability of recreation in the program area and populations growth."(1219) It is unclear what this assumption is based on, especially where significant degradation of recreational settings can be expected under all action alternatives, which in turn would be expected to lead to decreases in wilderness recreation use and associated economic benefits. There is also still insufficient analysis of the impact of visitor displacement from the program area to other areas within the Arctic Refuge, including the Kongakut River, which is already experiencing visitor pressures and management challenges. (1220) To the extent that BLM and FWS are assuming visitors would tend to not visit or recreate on the Coastal Plain as a result of oil and gas development, but would instead concentrate in other areas of the Arctic Refuge, the agency must analyze the impacts that could occur. (1219) DSEIS at 3-388. (1220) DSEIS at 3-388.	This assumption has been included in Appendix G, Analysis Assumptions, and is based on the trend of increasing use of federal lands for recreation over the last several years. As noted in Appendix G, the cumulative effects analysis area is considered to be the program area due to its accessibility from Kaktovik.
Brisson	Brook	Trustees for Alaska	80131	449	The impacts analysis, including the cumulative impacts analysis, also rely on abandonment and reclamation to decrease or eliminate recreation impacts over time.(1221) This is unsupported, as reclamation of gravel infrastructure is unproven in the Arctic and other oil and gas activities, such as seismic exploration, have had permanent impacts. The final SEIS should remove references to abandonment and reclamation as limiting the duration of impacts. (1221) See, e.g., DSEIS at 3-383, 3-389.	The final SEIS has been revised to note that abandonment and reclamation would decrease, but may not fully eliminate impacts to recreation.
Brisson	Brook	Trustees for Alaska	80131	450	Overall, a more robust analysis of recreational impacts is necessary to evaluate whether an oil and gas program is consistent with the Coastal Plain's purpose of protecting recreational values. This will necessarily require inclusion of stronger protections based on a visibility analysis and careful examination of recreational use data; non-waivable stipulations for extensive NSO setbacks around river corridors, height restrictions on infrastructure, and mandatory photo simulations of proposed facilities to inform future visual resource assessments. However, we believe that oil and gas development is strictly incompatible with the Coastal Plain's recreation values.	The analysis in the SEIS is based on the most accurate and readily available information as applicable to the leasing action. Subsequent post-leasing activities would require NEPA analysis that accounts for site-specific impacts to recreation, including impacts from the height of proposed infrastructure and nature of disturbances. The BLM would identify the contract between existing conditions and proposed changes to the landscape with the aid of simulations, viewshed analyses, and other studies, as appropriate.

U.3.39 Requests for Information

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
H.	Zach	-	29045	1	Please provide an explanation of how the U.S. Supreme Court's decision in Sackett v. U.S. Environmental Protection Agency will impact projects in the 1002 program area. Please provide an explanation of how the revised definition (fall 2023) of Waters of the U.S. may impact future proposed development projects in the 1002 program area.	It is not within the scope of this SEIS to evaluate Supreme Court decisions that occur coincident with the issuance of this SEIS. The authors cannot reasonably foresee all of the implications and impacts of this decision. It is generally understood that the revised definitions of Waters of the U.S. will revoke federal protections of “wetlands that are not directly connected to another flowing body of water with a permanent flow.” It will then fall to other management or state agencies to issue protections for ephemeral, intermittent, and disconnected wetlands. A map of wetlands and waters can be found in Appendix A.
Not Provided	Not Provided	-	11708	6	Thank you for considering these comments and I respectfully request that all proceedings on this decision be made available to the public in a timely manner.	The joint lead agencies maintain a decision file which serves as the documentation of all aspects of the NEPA process.

U.3.40 Sand and Gravel Resources

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Proescholdt	Kevin	Wilderness Watch	80104	10	Gravel mining causes serious impacts. The DSEIS erroneously assumes the impacts would be limited to the actual footprint of the mine.	The sand and gravel section discusses the impacts from the alternatives on sand and gravel resources. Impacts from gravel mining as a result of the alternatives are addressed in the respective resources' sections.
Brisson	Brook	Trustees for Alaska	80131	169	However, the draft SEIS continues to misstate BLM's authority to permit gravel mining on the Coastal Plain, would allow gravel mines in NSO and setback areas, and the agencies have not provided adequate justification for the assumptions underlying the estimates of needed gravel or the impacts of gravel mining in general.	Introductory statement. Specific comments are addressed below.
Brisson	Brook	Trustees for Alaska	80131	170	In the draft SEIS, the agencies state that sand and gravel on the Coastal Plain are salable minerals subject to the Materials Act. (599) In its responses to comments on the final EIS, BLM asserted that the Tax Act amended ANILCA section 1002(i).(600) This is incorrect. The Tax Act amended ANILCA section 1003, which prohibited the production of oil and gas from the Refuge.(601) The Tax Act did not amend ANILCA section 1002(i), which stripped BLM of its authority to permit mineral leasing on the Coastal Plain. In the final EIS's responses to comments, BLM repeatedly stated that it is "not possible to have an oil and gas program without access to gravel."(602) That may be the case factually, but the need for gravel does not legally authorize BLM to extract it from the Coastal Plain in violation of the law. Nor did BLM otherwise address the fact that the Coastal Plain is withdrawn from mining and mineral leasing under ANILCA. If BLM cannot point to any legal authority to permit gravel mining despite ANILCA section 1002(i), then it must evaluate the impacts of importing gravel from outside the Coastal Plain for future construction needs. The draft SEIS does not address this concern, which must be fully considered in the final SEIS. (599) DSEIS at 3-61. (600) FEIS App. S at S-424. (601) See 16 U.S.C. § 3143; Section 20001(b)(1) of the Tax Act, 115 P.L. 97. (602) See, e.g., FEIS App. S at S-328, S-330.	ANILCA section 1002(i) does not prohibit gravel sales under the Materials Act.
Brisson	Brook	Trustees for Alaska	80131	171	Even if gravel mining could be allowed, the agencies should clarify FWS's role in any authorizations. The agencies correctly note in the draft SEIS that FWS is the administrator and manager of the Refuge.(603) In the final EIS, BLM claimed erroneously that the Tax Act stripped FWS of any authority over lands leased for oil and gas development in the Refuge.(604) The Tax Act nowhere removed FWS from its management position over the Refuge, nor subordinated FWS to BLM. FWS has independent legal obligations in other statutes, such as the National Wildlife Refuge System Administration Act, which were not modified by the Tax Act. BLM and FWS correctly note in the draft SEIS that FWS continues to manage federal lands in the Coastal Plain, but the agencies statement that BLM would coordinate with FWS for all activities does not go far enough to acknowledge FWS's role(605) and the division of responsibilities remains unclear. (606) The agencies should clarify that FWS's approval and a compatibility determination would be a prerequisite to approving any activity in furtherance of gravel mining on the Coastal Plain. (603) DSEIS at 1-3 to 1-4. (604) See, e.g., FEIS App. S at S-374 (claiming that "Section 20001(a)(2) of the Tax Act assigns the BLM the sole responsibility for making oil and gas program decisions for lands within the Coastal Plain") (605) DSEIS at 1-4. (606) See supra Section IV	Section 20001 directs BLM to administer the oil and gas program. In processing applications for gravel sales for oil and gas development under the Materials Act, BLM would closely coordinate with the USFWS.
Brisson	Brook	Trustees for Alaska	80131	172	BLM and FWS's analysis of the impacts of gravel mining and consideration of alternatives which would reduce impacts from gravel mining is insufficient to satisfy the agencies' NEPA duties. Critically, the agencies rely on designating lands as NSO to preclude or reduce impacts from oil and gas development in its analysis. But gravel mining could be allowed in these areas.(607) Because of the significant impacts gravel mining would have, discussed below, BLM and FWS must consider an alternative that precludes gravel mining in all NSO areas in order to protect sensitive resources. Otherwise, BLM and FWS should explain why areas it deems too sensitive for placement of gravel pads would still be subject to permanent and significant harm from blasting and mining activities. (607) DSEIS at 3-185 and 3-188 (gravel mines may be allowed within NSO-designated areas in Alternative C and D).	It is not practicable to preclude gravel mining in all NSO areas.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	173	Like the final EIS, the DSEIS provides little information on gravel mining beyond an estimated number of cubic yards of gravel needed for each action alternative. The final EIS anticipated that 12.4 to 12.7 million cubic yards of gravel would be needed for the Coastal Plain's exploration, construction, development, and maintenance under the various alternatives.(608) The draft SEIS presents a much wider range, estimating that between 6 and 12 million cubic yards of gravel would be needed.(609) It is impossible to check the veracity of this number, as the RFD scenario does not provide incremental gravel needs for various elements of potential infrastructure projects (e.g., central processing facilities, anchor pads, and airstrips are all combined).(610) The agencies also fail to explain how it is able to provide precise figures for miles of roads and pipelines without knowing where any projects would actually be located.(611) Furthermore, the agencies' math does not add up. BLM and FWS note that an estimated 6 million to 12 million cubic yards of gravel would be required, depending on the alternative selected.(612) In reaching this range, the agencies rely on gravel needs for various facilities constructed for similar projects to estimate gravel requirements at 10,000 cubic yards per acre.(613) The agencies then estimate the acreage to be developed for each alternative. But using the figure of 10,000 cubic yards of gravel per acre results in nearly 17 million cubic yards of gravel required for Alternative B, which is far above the 12 million upper bound projected(614) and its estimate that 10.9 million cubic yards of gravel would be needed for Alternative B.(615) The figures provided for Alternatives C and D similarly conflict with the agencies explanation of gravel requirements.(616) Alternative C tips the scales at 12.45 million cubic yards of gravel required. Only Alternative D lands within BLM's projected range of gravel requirements at 8.87 million cubic yards. But, despite being the least impactful alternative, it is still higher than BLM's 6 million cubic yard lower bound. (608) FEIS at 3-63. (609) DSEIS App. B at B-25. (610) Id. (611) Id. (612) Id. (613) DSEIS App. B at B-24. (614) Id. at B-26. (615) DSEIS at 3-85. (616) DSEIS at 3-85 to 3-86 (providing figures of 7.8 million cubic yards of gravel required for Alternative C and 5.49 million cubic yards of gravel required for Alternative D).	A table of potential gravel needs by alternatives was added to the Final SEIS, Section 3.2.9, Sand and Gravel Resources.
Brisson	Brook	Trustees for Alaska	80131	174	Further, it is entirely unclear whether BLM and FWS factored in the need for additional gravel (e.g., for roads that expand in width during use) and river and stream crossings, vehicle turnouts, or storage pads into these figures. The agencies need to provide far more information about the potential gravel resources necessary for each alternative over the expected life of the program to adequately analyze potential impacts. BLM and FWS must then fully analyze the direct, indirect, and cumulative impacts of gravel mining for each action alternative based on those predicted gravel needs.	Estimates are based on average gravel needs from typical north slope developments so they do include needs for vehicle turnouts, maintenance over time, and other causes of increased need. Many impacts are site specific and will be analyzed in site specific NEPA when a project proposal is received.
Brisson	Brook	Trustees for Alaska	80131	175	Moreover, gravel mining has very serious impacts that BLM and FWS fail to consider in the draft SEIS. In its explanation of potential environmental impacts, the agencies refer to impacts in general without undertaking any specific analysis. Regarding gravel mining, BLM and FWS note that gravel mining could result in the emission of criteria and hazardous air pollutants,(617) noise,(618) changes to topography,(619) disturbance of paleontological resources,(620) permanent loss of wetlands, vegetation, and wildlife,(621) and disturbance of soil, permafrost, and stream structure.(622) But the analysis simply refers to 'change,' 'alteration,' or 'losses.' Nowhere do the agencies actually analyze specific impacts or quantify the extent of impacts to be expected under each alternative. For example, when analyzing impacts to wetlands, BLM and FWS state that "site-specific acreages were not used due to hypothetical anchor development location and poor data quality"(623) Similarly, when analyzing impacts to birds, BLM and FWS note that gravel mining will cause habitat loss, but does not attempt to quantify or analyze impacts from that habitat loss.(624) (617) DSEIS App. F at F-13 to F-14, (618) Id. at F-15. (619) Id. at F-16. (620) Id. at F-17. (621) Id. at F-25-F-31. (622) Id. at F-18-F-20. (623) Id. at F-26.	Site-specific NEPA analysis for specific mines and projects will be required upon site determination.
Brisson	Brook	Trustees for Alaska	80131	176	Gravel extraction is generally done in large open pit mines typically located away from major streams and lakes. It is not clear how such mines could be located in a way that protects the sensitive wildlife and biological resources of the Coastal Plain and the draft SEIS appears to assume and allow gravel mining in rivers.(625) Open pit mines require extensive overburden removal - for example, over 50 feet of vegetation and soil needed to be excavated to reach suitable gravel in the mines created for Kuparuk.(626) The resulting overburden stockpile disturbs tundra, and the gravel pit itself causes permanent changes to the area's thermal regime due to "thaw bulbs" forming in the permafrost around the unfrozen water during flooding.(627) Indirect effects such as these have led some researchers to approximate that a one acre (0.4 ha) gravel pit may impact as much as 25 acres surrounding the site.(628) BLM and FWS acknowledge that impacts to land could occur from gravel pit mining and impacts to streams could occur from gravel mining in streambeds, but fails to evaluate any of the resulting impacts from thawing permafrost or hydrological changes.(629) The agencies must adequately describe what those changes will be and how they will impact local ecology, not simply state that they will happen, in order to take a hard look at the impacts of the proposed gravel mines. (624) Id. at F-32-F-33. (625) Id. at F-29. (626) BENJAMIN SULLENDER, AUDUBON ALASKA, ECOLOGICAL IMPACTS OF ROAD- AND AIRCRAFT-BASED ACCESS TO OIL INFRASTRUCTURE 3 (2017), available at http://ak.audubon.org/sites/g/files/amh551/f/road_aircraft_access_report_final_0.pdf (internal citations omitted). (627) Id. (internal citations omitted). (628) Id. (internal citations omitted). (629) DSEIS at 3-85, 3-122 to 3-123.	Site-specific NEPA analysis for specific mines and projects will be required upon site determination.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	178	In addition to open pit mines, the draft SEIS indicates that gravel mining might occur in streams or rivers.(630) This should not be permitted, and BLM has failed to analyze the impacts from such a destructive activity. BLM has recognized in another EIS that gravel mining in rivers, streams and floodplains is incredibly damaging: (630) DSEIS App. F at F-29. Gravel material sites in the floodplain also have the potential to be flooded during snowmelt or high-flow events, risking breaching of the material site into the stream corridor and resulting in increased sediment flow into the stream. If floodplains of meandering streams are not avoided for material sites, the stream's migration over time may also breach the gravel mine site. This could result in increased sediment introduction into the watercourse, changes in streambed characteristics, and degradation of fish habitat. Most potential material sites are underlain by permafrost and development of the site, and removal of surface vegetation may result in local permafrost thaw or thermokarsting, especially if the mine site is filled with snowmelt/floodwater or located in the floodplain of rivers or streams. Gravel mining would create some localized dust that could be carried to water bodies and downstream.(631) (631) BLM, Ambler Road Draft Env'tl. Impact Statement at 3-20 (2018).	The impacts of gravel mining on streams and rivers is analyzed in Section 3.2.10, Water Resources, and on other wetlands in Section 3.2.1, Vegetation and Wetlands and is appropriate for a programmatic level analysis. Location specific analyses would be conducted when activities are proposed and site-specific analyses can be completed.
Brisson	Brook	Trustees for Alaska	80131	179	Gravel extraction is one of the most damaging activities to take place during the construction period, and the draft SEIS fails to account for the inherent risks of such an activity. Nor does the draft SEIS identify any specific modifying protective criteria to assure water and fishery resource protection in the affected area. Gravel extraction poses a significant risk to fisheries habitat. BLM and FWS must not allow gravel activities in riverbeds and floodplains, to the extent the agencies determine such mining is legally viable.	Site-specific NEPA analysis for specific mines and projects will be required upon site determination.
Brisson	Brook	Trustees for Alaska	80131	180	BLM and FWS estimate the direct footprint of mining itself as being between approximately 160 and 310 acres,(632) but does not quantify or even discuss the indirect and far broader range of impacts to the sensitive ecosystems surrounding these mines. The agencies fail to explain how this figure was calculated, or why the range could now exceed the maximum estimated in the final EIS, which estimated a range between 280 and 300 acres of gravel mines.(633) BLM and FWS also note that "acreage required for gravel mining could increase or decrease, depending on local conditions," but fails to explain what those conditions might be, or what the actual total acreage could be.(634) Additionally, the agencies note that multiple material sources are expected to be used, but does not analyze impacts from multiple gravel mines, which could have a much greater impact on the Coastal Plain than a single mine.(635) (632) DSEIS App. B at B-25. (633) FEIS at 3-36. BLM has not explained how the estimated gravel mining footprint could be higher in the DSEIS than in the previous estimates. (634) Id. (635) DSEIS at 3-84.	The change from the Final EIS to the Draft SEIS was due to a revision of assumptions and estimates as a result of comments received.
Brisson	Brook	Trustees for Alaska	80131	184	BLM continues to discuss abandoned gravel mines as having "potential . . . for enhancing fish and wildlife habitat" in its considerations for mine siting.(648) This statement conflicts with BLM's statement in its responses to comments in the final EIS that "following the comment period, BLM decided to strike the mention of habitat creation post gravel mining. This is not ... a land-use strategy for wildlife refuges. Furthermore, these habitats may require maintenance long term to serve as usable fish habitats."(649) The agencies should remove these statements from the final SEIS. (648) DSEIS at 3-97 to 3-98, DSEIS App. F at F-32. (649) FEIS App. S at S-963 to S-964.	The Final SEIS has been revised to remove references to gravel mines as having the potential for enhancing fish and wildlife habitat.
Brisson	Brook	Trustees for Alaska	80131	185	In the final SEIS, the agencies should adequately explain its legal authority to permit gravel mining on the Coastal Plain, thoroughly assess the specific impacts those gravel mines and associated infrastructure may have, consider revising stipulations and ROPs to further limit the lands open to gravel mining, and require that mine sites are sited and remediated in a way that protects fish, wildlife, and cultural resources and does not leave lasting scars on the landscape.	Gravel sales are authorized under the Materials Act. Site-specific NEPA analysis for specific mines and projects will be required upon site determination.

U.3.41 Sociocultural Systems

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Lampe	Charles	Kaktovik Iñupiat Corporation	80350	4	Since the DSEIS is a public document, many people, including those that are opposed to oil and gas leasing, will only look at Map 3.44 in Volume 2. This map is very misleading because despite there are only three 'real' Gwich'in place names in the 1002 Area, which we have never disputed, this map depicts the Canning River as Gwich'in due to a single place name adjacent to the river while the Kaktovikmiut have five place names along the river -you need to explain this map. Please note that the Canning name is neither Gwich'in nor Iñupiaq! BUT the bigger issues and one that is incredibly offensive to us is to place the words "Iizhik Gwats'an Gwandaii Goodlit (The Sacred Place Where Life Begins)" ACROSS OUR HOMELANDS.	This map has been removed from the SEIS.
Brisson	Brook	Trustees for Alaska	80131	423	With respect to missing and murdered Indigenous women, the draft SEIS briefly acknowledges the high risk of violence to Indigenous women and girls and the potential associated sociocultural and public health impacts of oil and gas development.(1162) This discussion is inadequate to address the specific increases in impacts associated with industrial activity, including the increasing rates of missing and murdered Indigenous women and the subsequent strain on judicial systems.(1163) The introduction of extractive industries, most prominently oil and gas fields, often creates 'man camps,' temporary housing communities meant to host a mainly transient male workforce influx.(1164) These transient extractive industry worker populations can cause significant societal disturbance in surrounding communities, with the most vulnerable groups - Indigenous women and children - often suffering the most.(1165) The draft SEIS inadequately investigates the well-documented relationship between extractive industries and a rise in violent crime, sexual harassment, and exploitation; a connection that has led to a human rights crisis requiring immediate attention.(1166) (1162) Id. at 3-359, 3-440. (1163) National Inquiry into Missing and Murdered Indigenous Women and Girls, "Reclaiming Power and Place: The Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls," 2019. (1164) Sarah Deer, "Relocation Revisited: Sex Trafficking of Native Women in the United States, William Mitchell Law Review, vol. 36, no. 2, 2010. (1165) Amnesty International, "Out of Sight, Out of Mind: Gender, Indigenous Rights, and Energy Development in Northeast British Columbia, Canada," 2016. (1166) Sanjay Sharma (2010) The impact of mining on women: lessons from the coal mining Bowen Basin of Queensland, Australia, Impact Assessment and Project Appraisal, 28:3, 201-215, DOI: 10.3152/146155110X12772982841041.	Reviewed and edited sociocultural systems section to ensure the potential for increased social issues as they related to domestic violence and crime are adequately addressed.
Schaffer	carol	-	42642	1	Science shows that oil leasing and development would destroy the wild quality of both the coastal plain and adjacent designated Wilderness lands in the Arctic Refuge. The Draft SEIS fails to truthfully explain what would be lost by opening the Arctic Refuge to oil leasing and development. Vulnerable species will be effected, for example there is not enough protection for onshore denning habitat for polar bears, and caribou habitat and migration patterns in the Arctic Refuge will change in the coming decades because of climate change. Additionally the coastal plain is a sacred place to the Gwich'in Nation, and the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program.	The cultural impacts of oil and leasing program to the Gwich'in, including the cultural and spiritual impacts of oil and gas development on lands sacred to the Gwich'in, are addressed in Sections 3.4.2 (Cultural Resources), 3.4.3 (Subsistence) and 3.4.4 (Sociocultural Systems).
greer	jill	-	62177	4	Our Bureau of Land Management must think of the Seven Generations to come, as traditional Native wisdom would teach us to do in our planning. Climate change is affecting the sea level in the Arctic, the degree of snowfall, and much more in that ecosystem, such as how the Arctic Refuge will change in coming decades. We must prevent extractive destruction from damaging habitat & possible future migration paths of the Porcupine herd.	Climate change and potential impacts on Native subsistence patterns and caribou are addressed in the SEIS.
Rosenfeld	Robert	-	80455	1	Regarding the SEIS, BLM and U.S. Fish and Wildlife have failed. You have not taken this opportunity to accurately depict the social and economic and environmental justice impacts to the Gwich'in community, if oil development was to occur in the 1002 area. The social impacts to the Gwich'in is barely mentioned in the SEIS.	The SEIS addresses the potential impacts of the oil and gas leasing program on Gwich'in sociocultural systems.
Wilson	William	-	22128	4	The coastal plain is a sacred place to the Gwich'in Nation, and the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program.	The SEIS addresses the Refuge as a sacred place to the Gwich'in people, and the potential impacts to subsistence, sociocultural, and cultural resources.
Peter	Enei Begaye	-	80363	7	In addition, this is a human rights issue. This is an indigenous rights issue. Indigenous expertise must be more adequately included within the EIS process. It's unclear to me as I've read summaries -- again, we don't have a hard copy -- where indigenous knowledge and indigenous experts have contributed to that -- to this EIS.	Appendix D of the SEIS provides traditional knowledge of indigenous and local residents as it pertains to the Arctic Refuge.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	427	In addition, the analysis of road impacts should be clarified. While the agencies note industrial roads in the program area "are not expected to be publicly accessible" they also indicate such roads "could open up access for local hunters."(1176) These statements are at odds and do not indicate whether and how hunting might be allowed in the program area. In addition, the assertion that industrial roads will not be opened to the public is questionable given the history of opening roads previously closed to the public such as the Dalton Highway. The agencies should clarify whether and how hunting will be allowed along roads in the program area and avoid assertions that roads will remain private when assessing potential sociocultural impacts. (1176) Id. at 3-355.	By "publicly accessible," the SEIS refers to the roads becoming open to the general public. It is likely that agreements between industry and Kaktovik could result in opening access to Kaktovik residents for subsistence hunting. Will review discussion of potential road use and edit for clarity.
Baumann	MJ	-	19693	5	- BLM Lacks Important Information and Ignores Indigenous Knowledge - The SEIS does not adequately consider international Indigenous rights of free, prior, and informed consent (FPIC) for any development on their ancestral lands. This consent is not merely a moral obligation, it is a legal necessity with regards to Indigenous sovereignty.	Traditional knowledge is provided in Appendix D of the SEIS and incorporated into SEIS sections where relevant.
Brisson	Brook	Trustees for Alaska	80131	426	Overall, the discussion of direct and indirect impacts for the action alternatives lacks meaningful analysis. As a preliminary matter, the agencies refer to NSO, CSUs and TLs to describe impacts under each alternative and rely on these provisions to protect sociocultural systems.(1171) But as addressed above, reliance on such measures to reduce impacts is questionable given their significant limitations including but not limited to the potential for exceptions and waivers. The draft SEIS also fails to provide meaningful comparisons between alternatives. Regarding Alternative B, the agencies note sociocultural system impacts are "the same as those described under Impacts Common to All Action Alternatives."(1172) The agencies further note that subsistence impacts would be most intense in Kaktovik but could extend outside the program area to communities that rely on either the Porcupine Caribou Herd or the Central Arctic Caribou Herd.(1173) But, stating that impacts will occur, without attempting to address the likely degree of those impacts, is not meaningful analysis. This approach also renders the agencies' method of assessment for each successive alternative - measuring the degree of impacts for each alternative against those expected under alternative B - meaningless.(1174) The agencies' failure to describe the expected degree of impacts is particularly troubling given that an impact common to all action alternatives is the possibility of reaching "a tipping point" where residents can no longer adjust to reductions in subsistence resource availability.(1175) While the agencies state it is not possible to predict exactly when this tipping point might occur, the agencies must at a minimum address whether any of the action alternatives are likely to constitute such a tipping point. (1171) See, e.g., id. at 3-360 ("A majority of the remaining areas available for lease sale would be subject to NSO, CSU or TLs. As a result, direct impacts on subsistence, and associated sociocultural impacts for the community of Kaktovik, would be reduced under Alternative D."). (1172) Id. at 3-359. (1173) Id. at 3-359 to 60. (1174) See, e.g., id.at 3-360. (1175) Id. at 3-354.	It is accurate to state that the types of impacts that would occur under each alternative are the same as those described under the section Impacts Common to All Action Alternatives. The difference between the action alternatives is the magnitude and extent of the potential development area and how those areas overlap with subsistence use areas and habitat for individual resources. There is no single quantitative measure which one can use to measure these differences, as they are based on the conclusions of the various other resource sections (e.g., terrestrial mammals, birds, etc.), are largely indirect, and are based on hypothetical scenarios rather than specific project plans. Detailed quantitative analyses of impacts to sociocultural systems will be more appropriate in NEPA analyses for future individual developments. Reviewed and edited the discussion of "tipping points" for additional clarity.
Stern	Charlene	-	80444	2	You look at other places where their access to traditional resources have been restricted and you see really high rates of suicide, really high rates of alcoholism, really high rates of diabetes, all kinds of negative social ills. And here, our people, and especially our men, have been able to retain their identity and their role in our community, and you see that.	Section 3.4.4 and 3.4.11 of the SEIS addresses the potential for oil and gas development to cause social issues including tensions between communities and among community residents, increased alcohol use, and health problems.
James	Nancy	-	80361	1	We are supposed to be good stewards. The good Lord gave us this Gwich'in country. He also gave us a commandment. Take care of it, be good stewards of your land and resources, take care of your people. So what we have is not ours. We have to pass it on and good. And if we've been good stewards, it's water rights, global warming. Anytime you have development, you trade something. We are responsible for what we trade in, because when we take something out, it's got to be replaced with something else. And if we take something out without replacing it -- and that's what happens on oil and gas, and we see it in North Dakota. We see it in -- how it's developing and how it's dividing the people. You trade it in with social issues.	Section 3.4.4 of the SEIS addresses the potential for oil and gas development to cause social issues including tensions between communities and among community residents.
Rosenfeld	Rob	-	80382	2	Finally, I just want to mention what's really wrong with the SEIS as written. There is no analysis of the social impacts. There is no analysis of economic impacts to the Niintsyaa Gwich'in or any of the Gwich'in or even to the Inupiat. There is no environmental justice section that gives any kind of credence to the real consequences if the caribou herd was to migrate another direction.	Sociocultural (including social) impacts are analyzed in Section 3.4.4, economic impacts are addressed in Section 3.4.10, and environmental justice is analyzed in Section 3.4.5.
Brisson	Brook	Trustees for Alaska	80131	420	One notable improvement to draft SEIS is the agencies' inclusion of a dedicated section on climate change impacts relevant to sociocultural systems.(1155) This is an important change. The sociocultural impacts stemming from reduced availability and abundance of subsistence resources and impacts due to increased food insecurity are difficult to overstate. However, much of the rest of the agencies' analysis follows BLM's previous approach. Like the final EIS, the draft SEIS provides an overly narrow analysis that does not accurately capture impacts to the Gwich'in, Inuvialuit, and Iñupiat people outside of Kaktovik, or provide meaningful analysis of how each alternative will impact specific communities. (1155) DSEIS at 3-351.	Sections 3.4.3 and 3.4.4, expanded its discussion of transboundary impacts and indirect impacts to subsistence users outside the Program area, including all documented users of the Porcupine Caribou Herd and Central Arctic Herd, all Gwich'in communities, and the Inuvialuit and Gwich'in of Canada.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	415	The village of Kaktovik and the Iñupiat people also stand to be significantly impacted by oil and gas leasing on the Coastal Plain. Kaktovik is a largely Iñupiat community located on the northern edge of the Arctic National Wildlife Refuge. Kaktovik includes Barter Island, 90 miles west of the Canadian border and 280 miles southeast of Utqiagvik. Though the current village site was not established until the 1960s, "[t]he people of Kaktovik have a longstanding history and relationship with the program area that is based on the seasonal harvests of subsistence resources."(1149) That history is interwoven into the landscape and, today, the ruins of old Kaktovik can be seen from the road into the village from the airport. Like other communities in the region, subsistence hunting, fishing and whaling play a major role in the local subsistence economy. Kaktovik residents hunt the nearby area for subsistence resources such as Dall sheep, moose, caribou, and fox.(1150) As Former Kaktovik Mayor, Archie Brower explained "[t]he Brooks Range all the way to the ocean is our garden. We feed on that - the sheep, caribou, fish, seals, and whales."(1151) (1149) Id. at 3-334. (1150) Id. at 3-293. (1151) MICHAEL JACOBSON & CYNTHIA WENTWORTH, KAKTOVIK SUBSISTENCE LAND USE VALUES THROUGH TIME IN THE ARCTIC NATIONAL WILDLIFE REFUGE AREA, 28 (U. S. FISH AND WILDLIFE SERVICE, NORTHERN ALASKA ECOLOGICAL SERVICES 1982).	The importance of the Program area to the Inupiaq of the North Slope, particularly residents of Kaktovik, is addressed in Sections B.4.2, B.4.3, and B.4.4.
Potts-Joseph	Jody	-	80381	1	And as a Han Gwich'in I support my other Gwich'in relatives in Gwichyaa Zhee and -- and other relatives on the Canadian side as well. And, you know, our people have lived and thrived on these lands for a millennia. We've been people of the caribou, and we have been in relationship and stewards of this land for so long. And it's only been in the last -- since statehood -- since ANILCA that these lands have really been under other management. And in that short period of time we have lost varying kinds of salmon, other species, and lands are under threat and endangered. And, you know, it's -- it's long overdue for our people to take management back into our own tribal sovereign hands. Our people would never allow the sacred place where life begins to be developed for extractive industries because of the harm to our caribou and our way of life, our culture, and also even for our Inupiaq relatives.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections 3.4.2, 3.4.3, and 3.4.4.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	165	The draft SEIS must be amended to analyze the psychological, cultural, and spiritual effects of contamination; the feeling of loss of something so closely tied to culture; and confronting the impacts of colonization. In doing so, the agencies should utilize Gwich'in Knowledge about these impacts. The Coastal Plain is sacred to the Gwich'in; therefore, contamination, even perceived, within the program area would have more than just physical and subsistence effects. Any disruption, contamination, or degradation would have significant impacts on Gwich'in society, culture, economy, spirituality, way of life, subsistence, and public health.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections 3.4.2, 3.4.3, and 3.4.4. In addition, the SEIS Sections 3.4.3 and 3.4.4 discuss the adverse social, spiritual, and psychological effects of the oil and gas leasing program on the Gwich'in people.
Brisson	Brook	Trustees for Alaska	80131	425	The agencies' analysis significantly mischaracterizes the potential for sociocultural impacts to the Gwich'in. The draft SEIS states that residents of Kaktovik are "most likely to experience direct sociocultural impacts" from oil and gas leasing on the coastal plain because they "have strong cultural and subsistence ties and consider themselves the stewards of the program area."(1167) By contrast, the agencies explain that Gwich'in communities "may" experience sociocultural impacts and that there is a "potential" for indirect and cumulative impacts to subsistence in Gwich'in communities.(1168) This severely misstates what is at stake for the Gwich'in people. The Gwich'in are "Caribou People" for whom the Coastal Plain is sacred ground.(1169) Their culture and way of life is heavily dependent on the Porcupine Caribou Herd. Any reduction in the herd's size or migration will impact the abundance and availability of this important subsistence resource for all Gwich'in communities throughout the herd's range.(1170) Groups strongly encourage the agencies to include a more robust and accurate analysis of the impacts of the oil and gas program on the Gwich'in in the final SEIS. (1167) Id. at 3-332. (1168) Id. at 3-332. (1169) Id. App. E at E-21. (1170) Id.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections 3.4.2, 3.4.3, and 3.4.4. Potential impacts to the Porcupine Caribou Herd are discussed in Section 3.3.4.
Hayward	Michelle	-	39606	5	The coastal plain itself is a sacred place to the Gwich'in Nation. It should not be blighted by steel and concrete, or even non-native human populations oblivious to the area's importance. Once again, the Draft SEIS fails to acknowledge the cultural harm of oil and gas leasing.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections 3.4.2, 3.4.3, and 3.4.4. Potential impacts to the Porcupine Caribou Herd are discussed in Section 3.3.4.
Naples	Jean	-	25931	3	I urge you to fully consider the impacts that any future oil and gas development would have on the Gwich'in People and the wildlife that make their home in the refuge. While the draft SEIS has made some improvements in protecting the refuge, it is not enough. Further protections must be put in place to safeguard this sacred place. The coastal plain is a sacred place to the Gwich'in Nation, and the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections 3.4.2, 3.4.3, and 3.4.4. Potential impacts to the Porcupine Caribou Herd are discussed in Section 3.3.4.
Thumma	Myra	-	80423	1	We are Gwich'in people. We are a life. We exist here in Alaska. And when you guys write this EIS, the fact that our life -- that needs to be written in there, of who we are.	The SEIS addresses the Gwich'in People and potential impacts to the Gwich'in People and their way of life in Sections 3.4.2, 3.4.3, 3.4.4, and 3.4.5.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	421	The agencies must expand the scope of their analysis in the final SEIS. The draft SEIS improperly limits the scope of the sociocultural systems analysis to post-lease activities.(1156) But, as addressed in prior comments, preleasing activities will cause direct harm to the Gwich'in people by damaging the Coastal Plain. Additionally, the discussion indicates that pre-leasing seismic exploration could occur in areas not open to leasing, even if it may be unlikely.(1157) In other places in the draft SEIS, it appears that seismic exploration is prohibited in those areas.(1158) This must be clarified in the final SEIS and the agencies must consider the full range of potential impacts to subsistence and sociocultural systems that could occur from all stages of the oil and gas program. The agencies must also consider all impacted communities, resources, and factors that are relevant to sociocultural systems. The draft SEIS currently focuses heavily on impacts to caribou and limits analysis to the communities of Kaktovik, Nuiqsut, Arctic Village, and Venetie. Other Gwich'in communities and additional subsistence resources such as birds, waterfowl, moose, grizzly bear, polar bear, marine mammals, and muskoxen are either not addressed or addressed only generally. For several resources that were addressed, the agencies failed to provide meaningful analysis. For example, the draft SEIS fails to adequately analyze impacts to bowhead whales which are a staple to the diet, culture, and traditions of the Iñupiat people. The agencies also failed to sufficiently analyze impacts to the Dall sheep, which may currently be experiencing population declines within the Arctic Refuge.(1159) These are significant oversights because the agencies' cumulative subsistence analysis concludes that the availability of subsistence resources including caribou, sheep, moose, small land mammals, fish, and waterfowl "would likely be reduced" as a result of the oil and gas program.(1160) Groups encourage the agencies to broaden the resources considered and the communities analyzed in the final SEIS. (1156) Id. at 3-351 to 3-352. (1157) Id. at 3-352. (1158) See supra Section IV.B.7. (1159) See, e.g., U.S. Department of the Interior, Federal Subsistence Management Program, Changes in Federal Sheep Hunting Regulations in Units 24A and 26B (July 29, 2022), available at: https://www.doi.gov/subsistence/news/hunting/changes-federal-sheep-hunting-regulations-units-24a-and-26b . (1160) DSEIS at 3-330.	The SEIS addresses potential impacts of seismic activities on subsistence activities. Reviewed and edited to ensure discussion of seismic activities is up to date. The SEIS focuses on caribou as it is a resource of primary concern among subsistence users and the resource most likely to experience impacts which could extend outside the Program area. The SEIS does discuss other resources, including the resources listed by the commenter. Bowhead whale impacts are addressed; however, while some nearshore impacts may occur, offshore impacts on bowhead whale hunting resulting from the oil and gas leasing program is less likely. Added additional discussion regarding potential impacts to Dall sheep to Section 3.4.3.
James	William	-	22952	3	Finally, these environmental and climate impacts threaten the lives, culture and livelihood of Indigenous Arctic communities. Gwich'in and Iñupiat peoples rely on the Arctics landscape and wildlife, and they are the first to feel the impacts of both drilling and climate change.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in and Inupiaq People
Ryder	Miranda	-	22905	3	Finally, these environmental and climate impacts threaten the lives, culture and livelihood of Indigenous Arctic communities. Gwich'in and Iñupiat peoples rely on the Arctics landscape and wildlife, and they are the first to feel the impacts of both drilling and climate change.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in and Inupiaq People
Bare	Eric	-	45477	2	It does not properly account for the cultural impacts on native tribes.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Cecere	Doug	-	22126	5	The coastal plain is a sacred place to the Gwich'in Nation, and the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Cotter	Justina	-	41121	3	The Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Family	Susang-Talamo	-	23235	3	The coastal plain is a sacred place to the Gwich'in Nation, and the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program. The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Hanson	Art	-	79828	1	The coastal plain is a sacred place to the Gwich'in Nation, and the SEIS does not acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Higgins	Janice	-	39851	3	The coastal plain is a sacred place to the Gwich'in Nation, and the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
K	PJ	-	79882	3	The coastal plain is a sacred place to the Gwich'in Nation, and the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Kutschbach Brohl	Lisa	-	79621	1	The coastal plain is a sacred place to the Gwich'in Nation, and the SEIS does not acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Mieras	Dean	-	23828	3	3. The coastal plain is a sacred place to the Gwich'in Nation, and the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Morrison	David	-	25387	3	The coastal plain is a sacred place to the Gwich'in Nation, and the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program. The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Mower	Amy	-	36036	2	The coastal plain is a sacred place to the Gwich'in Nation, and the SEIS does not acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Naples	Jean	-	25938	2	It is crucial to be aware that the SEIS does not acknowledge the cultural harms that would be inflicted on the Gwich'in People if the oil and gas leasing program goes forward. I am making you aware that the alternatives set forth in the Draft SEIS do not grant strong enough protections for the Porcupine caribou herd that the Gwich'in Nation relies upon for cultural survival and food security. It is imperative that the SEIS evaluate all aspects of potential oil and gas impacts to lands, water, wildlife, communities, and climate in this sacred area, both at this time and for all future generations.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Not Provided	Not Provided	-	35058	4	The draft SEIS does not acknowledge the cultural harms caused to the Gwich'in nation by oil and gas leasing as the coastal plain is a sacred place to the Gwich'in people .	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Not Provided	Not Provided	-	44970	2	The coastal plain is a sacred place to the Gwich'in Nation, and the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Raffaeli	Michael	-	19265	1	The coastal plain is a sacred place to the Gwich'in Nation, and the SEIS does not acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Rentschler	Dennis	-	78408	4	Acknowledge the harm done to the Gwich'in Nation.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Stewart	Sarah	-	29334	4	The coastal plain is a sacred place to the Gwich'in Nation, and the Draft SEIS does not acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Swearingen	Christin	-	79574	1	Part of this is considering the cultural impacts on the Gwich'in people. The three pillars of ecosystem services are Cultural, Provisional, and Regulatory. By keeping the Arctic Refuge in it's natural state we are rewarded with so many benefits. An example of cultural services is the spiritual/ identity connection to the Porcupine Caribou herd. Provisional includes the actual sustenance provided by the caribou to the subsistence hunters, as well as the berries and other food sources. Regulatory includes the carbon sink of tundra and permafrost, mosses pulling carbon from the atmosphere. In the EIS, please fully consider each of these services, with equal weight given to the cultural and spiritual services of the Arctic Refuge.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Van Atta	Karen	-	44964	6	There is grave harm to the Gwich'in Nation, their natural and cultural heritage that would almost certainly result from the oil and gas leasing program. The threat to the cultural and natural heritage of the Gwich'in Nation must be adequately analyzed in the SEIS.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Worthy	Crista	-	22294	4	The Draft SEIS doesn't explain or even acknowledge the damage oil and gas leasing will do to the Gwich'in people.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
L	Laura	-	33248	4	The Draft SEIS fails to acknowledge the harms caused to the Gwich'in people, for whom the coastal plain is a sacred place, by the oil and gas leasing program, including their reliance on the Porcupine caribou herd for their cultural survival and food security. The alternatives set forth in the Draft SEIS need to grant stronger protections to the caribou, including looking at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. Impacts to caribou, including migration, are considered in Section 3.3.4, Terrestrial Mammals. While all alternatives include protections for resources, the agencies have developed Alternative D2, a sub-alternative of D, based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
Not Provided	Not Provided	-	25380	2	Also, the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program; alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. While all alternatives include protections for resources, the agencies have developed Alternative D2, a sub-alternative of D, based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
Wald	Michael	-	20420	2	Another area where analysis is inadequate is the scant attention towards impacts to Gwich'in communities who rely upon caribou. Impacts on the coastal plain have effects far beyond the project area that are not being adequately considered.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People, and the importance of caribou to the Gwich'in people, in Sections 3.4.2, 3.4.3, 3.4.4.
Brisson	Brook	Trustees for Alaska	80131	414	Assessment of sociocultural systems is essential for understanding the effects oil and gas leasing on the Coastal Plain will have on affected Indigenous communities. The Gwich'in and Iñupiat people have strong cultural ties to the Coastal Plain of the Arctic Refuge. Indigenous people have lived on and used the Coastal Plain since time immemorial. The Gwich'in people live in fourteen communities across northern Alaska and Canada along the migratory path of the Porcupine Caribou Herd. The Gwich'in identify as the Caribou people and consider any disturbance to the calving grounds of the Porcupine Caribou Herd an affront to their human rights - the Coastal Plain is so sacred to the Gwich'in that they do not set foot in this area. Oil and gas development on the Coastal Plain will cause disruptions to land and subsistence activities and uses, which will have severe social, cultural, and health impacts that the agencies must analyze.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Inupiaq and Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4, including the sacredness of the Refuge and the Porcupine Caribou herd to the Gwich'in People.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Inman	E Renee	-	61588	2	There is also a nation of indigenous peoples, the Gwich'in Nation, that is not being factored in decisions. The Gwich'in rely on the caribou herds and drilling activities will likely impact migration routes and habitat.	The SEIS addresses the potential impacts of the oil and gas leasing program on Gwich'in sociocultural systems.
Brisson	Brook	Trustees for Alaska	80131	422	The agencies also limited their analysis to considering changes in employment, technology, disrupted subsistence, and an influx of outsiders either working in or living in subsistence communities.(1161) This scope of analysis does not adequately incorporate the values of the affected communities. Adequate analysis will require consideration of additional factors including increased industrial activity's correlation with missing and murdered Indigenous women as well as impacts to the judicial system, cultural and archeological resources, values, and spiritual beliefs. Considering factors such as spiritual beliefs is necessary to fully address the gravity of sociocultural impacts facing numerous communities including the Gwich'in who are inextricably linked to the Porcupine Caribou Herd, and thus the Coastal Plain's calving grounds. (1161) Id. at 3-352.	The SEIS addresses the potential increase in social issues, including domestic violence, in Section 3.4.11. Impacts to cultural and archaeological resources are addressed in Section 3.4.2. Impacts to cultural values and spiritual beliefs are addressed in Sections 3.4.3 and 3.4.4.
Weaver	Pamela	-	20597	1	The heart of ANWR is the calving ground for the Porcupine caribou herd. This entire area is sacred to the Gwich'in peoples, and has been for thousands of years. Their subsistence lifestyle as well as cultural heritage is at stake as it is interwoven with the caribou. This is something which must be honored because for far too long indigenous rights and ways of being have been ignored. It is important to work in partnership. The saying goes, "Nobody knows the way of the wind or the caribou. ". There is much truth to this statement and with a changing climate it is very likely the caribou will be changing their ways and routes and there needs to be protections in place that will accommodate this.	The SEIS addresses the Refuge as a sacred place to the Gwich'in people, and the potential impacts to subsistence from changes in caribou availability and abundance. The SEIS also addresses impacts (including cumulative impacts) of climate change on caribou.
Erickson	Diloolaa	-	80391	1	I have my kids here with me. My daughter has only fished one year on the Yukon. That's a whole generation right now that is losing access to that spiritual practice.	The SEIS discusses the potential cultural and spiritual impacts of the leasing program, including the loss of opportunities to pass on traditional knowledge to younger generations.
LaRue	Jill	-	63463	2	Regulations for future management must include input from indigenous Tribal peoples who have lived sustainably in and protected these lands since time immemorial, and must respect their culture and their way of life for future generations.	The SEIS incorporates indigenous knowledge as relevant and provides indigenous knowledge in Appendix D.
Crisman	Tara	-	80389	2	The oil and gas leasing program harms sacred lands and relationships between people, land, and animals tied to this place. And the SEIS fails to account for Gwich'in and Inupiaq ways of life and discounts the knowledge they have about their own ancestral lands.	The SEIS incorporates traditional knowledge of the Inupiaq and Gwich'in into Sections 3.4.2, 3.4.3, and 3.4.4 and in Appendix D.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	163	As with the 2019 Final EIS, the draft SEIS fails to adequately analyze impacts on cultural identity, and effects on sense of self, sense of community, sense of efficacy, cultural identity, and psycho-social well-being. There is insufficient discussion of the generations of Gwich'in who have endured centuries of colonialism, which has eroded the Gwich'in's trust in the federal and state governments. Accordingly, the draft SEIS, like the 2019 Final EIS, fails to address historic and intergenerational trauma and further fails to analyze how such trauma would be exacerbated within Gwich'in communities with adverse impacts to the Porcupine Caribou Herd from oil and gas development in the Coastal Plain. Likewise, the draft SEIS fails to address the kinship relationships between the Gwich'in who live on both sides of the United States-Canada border, who travel back and forth regularly, and are related as family. Caribou harvested in Canada by Canadian Gwich'in are shared with Gwich'in in Alaska and vice versa.	Reviewed literature on historic/intergenerational trauma and mistrust of Federal and state governments by the Gwich'in. As appropriate, revised section to incorporate discussion on these topics. Kinship ties and sharing between Alaskan Gwich'in and Inupiat and their Canadian counterparts are addressed,
Stern	Charlene	-	80444	1	So you probably heard in different ways our people talk about the importance of caribou, and while, to some, it may seem repetitive, that's for a reason, because we were all taught that caribou is essential for our way of life. We were all raised with the same core values. And I mentioned the other day in Venetie that caribou really is a big part of the structure of our society. Our people have really strong gender roles and our men are raised from being very young boys to contribute back to the communities in their role of provider, and we celebrate that when they get their first ground squirrel, when they get their first duck, when they get their first goose, when they get their first caribou. There's a ceremony that's attached to that, that that family then gives that meat or the products of the harvest out to the community, and the elders often get the best parts. That's ceremony. And the reason we do that is not just to share that harvest, but it's also to teach our people the core values of sharing, because we are a collective culture.	Reviewed Section 3.4.4 to ensure ceremonies and social roles associated with caribou are adequately addressed.
Brisson	Brook	Trustees for Alaska	80131	424	To truly understand the comprehensive impact of extractive industries on Indigenous communities, it is crucial to consider the history of colonization, extractive industries, and the historical injustices inflicted upon Alaska Native Women and Children. These complexities include jurisdictional issues when crimes occur on rural lands, especially between federal, state, and Tribal lands. These complications and overwhelming backlogs often result in unsolved crimes and victims being left without justice, indicating a vital need for administrative, legislative, and financial support to allow local court systems to operate effectively and fairly. The SEIS should thoroughly consider these factors to address extractive industries' comprehensive impact on Indigenous communities.	The sociocultural systems and public health sections both extensively address community-level social issues, including indirect effects of oil and gas development on increases in domestic violence and crime.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Heslep	Alison	-	80164	30	#16 Ch/Sec/Sub-sec 3.4.4 Title Sociocultural Systems Comment(s) While this subsection goes into some depth on the potential impact of the Coastal Plain Leasing Program on Canadian Indigenous communities, it wasn't as comprehensive as the impact assessment on American communities present in 3.4.4. Recommendation(s) The GNWT recommends the following: - Split the discussion of subsistence users on p. 3-362 into Gwich'in and Inuvialuit users, where focus is given to the differentiated impact of the project on polar bears, beluga whales, and bowhead whales for the Inuvialuit people and the caribou for the Gwich'in.' - Provide some discussion on the cumulative and climate change impacts of the project on subsistence, and cultural and spiritual aspects of the lives of Indigenous people in Canada. Particularly, more depth could be given to the importance of the region to Canadian Gwich'in, and how they view development in the ANWR region in relation to its importance as the origin point of their people. - Some discussion of the impact of the projects on cross-border ties may also be important. Ties between cross-border Gwich'in and Inuvialuit communities may be disrupted, as communities on the Canadian side may experience projects on the Coastal Plain differently than their Alaskan counterparts.	Reviewed Transboundary Impacts discussion and revised to more clearly differentiate impacts between Gwich'in and Inuvialuit users.
Adoko	Ashlee	State Of Alaska	80221	51	Document Reference Chapter 3, Section 3.4.4, Page 3-361, Paragraph 1 Reviewer MW Agency DFG Resource/Topic Prediction of future distributions of PCH Comment: Please see comment regarding Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief.	The most recent and best available science is included in the SEIS. Revised sociocultural systems section based on updated terrestrial mammals analysis as appropriate.
Adoko	Ashlee	State Of Alaska	80221	52	Document Reference Chapter 3, Section 3.4.4, Pages 3-338 and 3-339 Reviewer MW Agency DFG Resource/Topic Typo Comment: The text says, "in coastal communities, an 3-338mialik..." This appears to be a typo repeated on at least these two pages. 3-339mialik is used on page 3-339.	Typos have been corrected.
Boldrick	Lauren	EPA Region 10	80058	5	Sociocultural Systems CEQ's EJ Guidance notes that "agencies should recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the proposed agency action. These factors should include the physical sensitivity of the community or population to particular impacts; the effect of any disruptions on the community structure associated with the proposed action; and the nature and degree of the impact on the physical and social structure of the community." The DSEIS highlights the downstream impacts of disruptions to subsistence resources, noting that "Iñupiaq and Gwich'in sociocultural systems are based on social and kinship ties, subsistence harvesting, and a deep connection to the land and its resources."(7) Further, the DSEIS finds that impacts to subsistence resources could have long-term impacts on cultural knowledge and education, resulting in a loss of cultural knowledge and identity.(8) (7) DSEIS page 3-352 (8) DSEIS page 3-358 EPA recommends collaborating with the affected communities to develop specific mitigation measures to address impacts to sociocultural systems including, as mentioned earlier, measures to support inter-and intra- community sharing networks. EPA recommends these mitigation measures be tailored to these potential impacts, including efforts to support and sustain TEK and support cultural educational opportunities for the impacted communities. An example of a mitigation measure that may be developed in collaboration with the affected communities would be a lease stipulation requiring Operators to work collaboratively with an existing organization, such as the Iñupiat College, to support community programs that work to ensure the preservation of TEK materials (e.g., books, photographs, recordings, archaeological and ethnographic artifacts, art, and historical objects).	Requiring mitigation measures for any alternative is decided at the time of the ROD by the DOI decision-maker, who may consider the provided examples. Existing stipulations and Required Operating Procedures currently contain the requirement for community outreach, which would support project-specific identification of issues and mitigation measures, including those related to public health.
Brisson	Brook	Trustees for Alaska	80131	529	In addition to its failure to incorporate key elements of an Indigenous-centered alternative, the draft SEIS alternatives and analysis fall short of fully addressing and minimizing the suite of adverse cultural, historical, ecological, spiritual, and other impacts from oil and gas development on Indigenous Peoples. Many of these deficiencies are identified throughout these comments, including in the sections on subsistence uses and resources, sociocultural systems, archeological and cultural resources, environmental justice, and public health, as well as in resource-specific content. Overall, the final SEIS must fully acknowledge and address historical and ongoing injustices and articulate meaningful support for Indigenous land stewardship.	The requirements and standards were developed by subject matter experts from both the BLM and USFWS to meet the objective of reducing the potential for the negative effects listed.
Brisson	Brook	Trustees for Alaska	80131	428	In discussing cumulative impacts, the agencies do not identify impacted communities. The agencies note that "development" may "increase tensions between different community institutions from disagreements about land jurisdiction and management and differing priorities and agendas, resulting in additional strains on social cohesion."(1177) It is not possible to take a hard look at such impacts and identify useful mitigation measures without identifying which reasonably foreseeable future actions (RFFAs) are likely to touch off such tension and supplying information about which communities are likely to be impacted. (1177) Id. at 3-364.	Some impacts would not be specific to communities but would affect the Inupiaq or Gwich'in as a whole. Reviewed cumulative section to more clearly identify potentially affected communities and provide additional detail as appropriate.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	429	The draft SEIS also fails to include relevant RFFAs. First, the agencies do not address RFFAs further from the program area that are likely to impact important subsistence resources such as caribou.(1178) Adequate analysis will require accounting for RFFAs impacting the Porcupine Caribou Herd and Central Arctic Herd throughout their migratory ranges. The draft SEIS also states that "other" RFFAs including "new permanent and seasonal roads" may impact sociocultural systems.(1179) This is too general to support meaningful analysis. Roads present significant sociocultural impacts including shifting traditional hunting areas, altering and destroying vegetation, and deflecting and injuring wildlife. Industrial roads that are eventually made public also pose significant risk to subsistence hunters through increased competition.(1180) These impacts are entirely dependent on the location of a proposed road and cannot be sufficiently addressed with reference to a generalized category. For example, BLM and FWS fail to specifically identify the annual snow road proposed by Kaktovik Inupiat Corporation as an RFFA that is relevant to the agencies' cumulative impact analysis. The proposed road would span from the western Coastal Plain boundary to the community of Kaktovik impacting subsistence resources such as polar bears, birds, fish, and caribou.(1181) In addition, as the application for the road indicates, Kaktovik Inupiat Corporation may seek to build a permanent gravel road; a potential permanent road is not analyzed. To the extent the draft SEIS relies on the analysis of cumulative impacts in the agencies' subsistence section, (1182) that analysis contains many of the same deficiencies.(1183) We therefore urge the agencies to revise their cumulative analysis of sociocultural systems in the final SEIS to include greater specificity and all relevant RFFAs. (1178) Id. at 3-363 to 3-364 (failing to address RFFAs south of the Brooks Range such as the Ambler Road or projects in Canada). (1179) Id. (1180) Id. at 3-354 ("Roads associated with development of the program area are not expected to be publicly accessible; however, if they are eventually opened to the public or if they substantially increase access to visiting hunters, the project could have greater impacts on sociocultural systems for local communities, particularly Kaktovik."). (1181) Id. App. F at F-10. (1182) Id. at 3-365. (1183) See supra Section VI.M.	The cumulative impacts analysis was revised based on updated RFFAs for the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	525	Recently, the Arctic Refuge Defense Campaign, a coalition of Indigenous people, Alaskans, conservationists, scientists, and others committed to protecting the Arctic Refuge, recognized the Imago Initiative as a central pillar of its work. Groups recognize the spiritual, physical, cultural, and historical connection of Alaska Native peoples to the land, wildlife, and waters that have sustained their ways of life since time immemorial. Imago is a critical vehicle for honoring and realizing that connection through meaningful and mutually beneficial co-stewardship of the land, waters, and wildlife. The SEIS must consider and leave space for Imago and its goals.	Along with other related policies/strategies, the Imago Initiative has generally been considered and incorporated into this SEIS, where feasible. In particular, many of the lease stipulations and ROPs require coordination with local Tribes and governments, where project-specific and place-based discussions would provide opportunities for considering indigenous knowledge and information.
Brisson	Brook	Trustees for Alaska	80131	526	Integrating Imago into the SEIS process is challenging, however, because it brings two different worldviews into the same space, using words that may be the same, but have substantively different meanings. For instance, to have this discourse it is imperative to understand that for Indigenous Peoples, all matter in the physical reality is animate and deserves honor and respect as sentient nations. However, in the Western context, resources are shifted to items that are monetized in value and measured for control. In the context of the SEIS, the term "resources" can be broadly categorized into two distinct types. The first is the "mineral resources" that would be extracted through oil and gas development, which are considered ancient ancestral relatives. Mineral resources refer to naturally occurring substances that can be extracted and utilized for economic benefit. These include petroleum, natural gas, coal, and various types of metal ores. The extraction of these resources often involves destructive practices like mining and drilling, which can lead to environmental degradation and impact the livelihoods of local communities.	Along with other related policies/strategies, the Imago Initiative has generally been considered and incorporated into this SEIS, where feasible. In particular, many of the lease stipulations and ROPs require coordination with local Tribes and governments, where project-specific and place-based discussions would provide opportunities for considering indigenous knowledge and impacts.
Dewitt	Meda	-	80370	4	One of the things as I was reading through the SEIS that struck me is it's mandated to incorporate traditional ecological knowledge and indigenous perspectives, but I kept getting stuck on the fact that the term resources was used a lot. And it's used interchangeably to describe caribou or oil and gas, like resources is just kind of this, like, catch-all term for things that could be monetized, siloed, managed, and controlled. And if you are truly to going follow your mandate to integrate traditional ecological knowledge into the EIS process, then the entire document needs to refer specifically to whether or not it's caribou or oil and gas.	Reviewed EIS to ensure clarity in the types of resources being discussed and to avoid use of the word "resource" when other terminology is suitable.
Frank	Ricky	-	80410	1	And the other thing I want to introduce to you is a book. It's a medicine plant book. It's all the plants in our region. It's just not a plant. The animal we consume, they consume this plant. And I would like to know -- not what I'd like to know, but I want you guys to insert this into SEIS or EIS so it can be recognized, it can be written down in there. This is a part of our life. The reason we're here today is because of caribou, fish, waterfowl. Any animal that's in our area, we consume it. And again, those animals consume whatever plant is around in the region. It's a medicine plant.	Reviewed and edited Section 3.4.3 to ensure the medicinal uses of plants is mentioned, as are potential impacts to food sources for caribou, fish, and waterfowl.

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Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	164	The draft SEIS fails to adequately analyze the direct social implications of oil and gas development, and how Arctic Village and Venetie would be specifically impacted. The draft SEIS repeatedly states: Tssuance of oil and gas leases under the directives of Section 20001(c)(1) of PL 115-97 would have no direct impacts on the environment because by itself a lease does not authorize an-on-the-ground oil and gas activities; however, a lease does grant the lessee certain rights to drill for and extract oil and gas subject to further environmental review and reasonable regulation, including applicable laws, terms, conditions, and stipulations of the lease. The impacts of such future exploration and development activities that may occur because of the issuance of leases are considered potential indirect impacts of leasing.(299) (299) See, e.g., Draft SEIS at ES-6, 3-1, 3-270, 3-284, 3-307, 3-351. This is not true. As described in the Tribes' comments on the 2019 draft ETS, the issuance of leases would cause significant psycho-social stress on the people who depend on migratory subsistence resources that spend a key part of their life cycle on the Coastal Plain.(300) Stress in Native communities is well documented, emerging in a number of past events. As recently documented, stresses are also cumulative and intergenerational. The effects of past colonialism along with ongoing threats to the well-being of the Gwich'in could have effects that may be hard to measure but are nevertheless significant. The issuance of leases would also cause significant effects because the Program Area is considered sacred by the Gwich'in. The issuance of leases therefore affects the integrity of location, feeling, and association of Iizhik Gwats'an Gwandaii Goodlit to the Gwich'in. (300) Attachment C at 16-17.	The SEIS addresses the potential impacts of the oil and gas leasing program on Gwich'in sociocultural systems. The SEIS also addresses the Gwich'in identified Porcupine Caribou Herd Calving Grounds Sacred Site.

U.3.42 Soil Resources

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Keim	Frank	-	53297	4	The extreme instability of the tundra permafrost should also be considered if there is to be exploitation for oil and gas on the Coastal Plain. Release of enormous quantities of methane, which contribute mightily to climate heating, will undoubtedly occur with any more disturbance of the tundra there.	Comprehensive discussions on the detailed impact of developments in the western portion of the North Slope have been facilitated by specific plans. However, this SEIS currently does not have specific plans or project details, only a potential area that has the potential for development. A more in-depth discussion and analysis can be conducted once these site-specific plans are established. The Draft SEIS requests robust data based on site-specific information once the development plans have been created. Additional details on the Coastal Plain's unique conditions and site-specific analysis is crucial and will be incorporated as planning progresses.
Strasenburgh	John	-	80071	1	Directional drilling is touted as an effective way to reduce surface impacts. I did not see that the draft SEIS addressed the expected impacts of directional drilling operations on permafrost (i.e., thawing). Section 2.3 Vol. 1 mentions directional horizontal extended reach drilling would be used in all alternatives, from which I conclude that the drilling would go through a lot of permafrost. It appears that such drilling would cause the surrounding permafrost to thaw. The draft SEIS doesn't discuss details of what directional drilling entails and its potential effect on permafrost and subsequent surface impacts. It should do so.	Comprehensive discussions on the detailed impact of developments in the western portion of the North Slope have been facilitated by specific plans. However, this SEIS currently does not have specific plans or project details, only a potential area that has the potential for development. A more in-depth discussion and analysis can be conducted once these site-specific plans are established. The Draft SEIS requests robust data based on site-specific information once the development plans have been created. Additional details on the Coastal Plain's unique conditions and site-specific analysis is crucial and will be incorporated as planning progresses.
Proescholdt	Kevin	Wilderness Watch	80104	9	The impacts to soils and permafrost lack sufficient explanation in the DSEIS. For example, the total amount of acreage affected by the all the associated oil and gas activities is not presented. For example, permafrost melting would expand well beyond the development footprint as changes in surface hydrology will have a domino effect.	Comprehensive discussions on the detailed impact of developments in the western portion of the North Slope have been facilitated by specific plans. However, this SEIS currently does not have specific plans or project details, only a potential area that has the potential for development. A more in-depth discussion and analysis can be conducted once these site-specific plans are established. The Draft SEIS requests robust data based on site-specific information once the development plans have been created. Additional details on the Coastal Plain's unique conditions and site-specific analysis is crucial and will be incorporated as planning progresses.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	139	BLM and FWS's discussion of the impacts to soils and permafrost in the draft SEIS is still very short and does not provide the public the ability to understand the wide range of impacts likely to occur to these resources from oil- and gas-related activities on the Coastal Plain. It also provides no indication that BLM and FWS took a hard look at the potential direct, indirect, and cumulative impacts of the oil and gas program, as required by NEPA. For example, the draft SEIS does not adequately quantify the total number of acres that could be impacted due to the placement of gravel fills and VSMS for roads, pads, airstrips, and structures. BLM and FWS estimate that, under all the action alternatives, there will different levels of disturbances from gravel fill.(516) However, the analysis does not quantify the potential indirect impacts to soils and permafrost, which could extend well beyond the actual footprint of the gravel and could persist for decades or forever.(517) Oil development impacts are not limited to the area where drill pad gravel or support beams touch the ground. Gravel roads cause permanent hydrological and surface morphological changes to the landscape, altering permafrost freeze-and-thaw cycles and creating issues related to thermokarst. These effects can include deeper permafrost thaw, earlier snowmelt in close proximity to the road, and alterations to hydrology.(518) Gravel roads and related traffic on roads can also lead to issues with dust, salts, and contaminants being deposited into streams and ponds or onto nearby tundra, where it can smoother or alter the mix of vegetation. The road dust can smother vegetation, reducing transpiration, and decreasing albedo, leading to a warming effect that can increase the depth of thaw in the summer.(519) This can lead to changes in geomorphology, where ice wedges melt around flat or high-centered polygons and can become degraded polygons. BLM and FWS also do not adequately consider the potential impacts that could occur from infrastructure, such as pipelines, that may not directly touch the ground, but could still shade areas and potentially lead to changes in vegetation and permafrost. There could also be warming that occurs around the base of the vertical support members (VSMS), which can impact the soils and permafrost and threaten the integrity of infrastructure over time (e.g., sags in pipelines, which can lead to spills). Changes in soil hydrology may also influence the fire regime within the Coastal Plain. The analysis fails to take into account the full range of significant impacts that will substantially increase the damage to tundra and other resources in a way that extends well beyond the direct acres disturbed. (516) DSEIS at ES-4. (517) Nat'l Res. Council of the National Academies, Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope, Committee on Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope 156 (2003) [NRC Report]. (518) See, e.g., Walker, D. A., M. Kanevskiy, Y. L. Shur, M. K. Raynolds, J. L. Peirce, M. Buchhorn, K. Ermokhina, and L. A. Druckenmiller. 2018. 2016 ArcSEES Data Report: Snow, thaw, temperature, and permafrost borehole data from the Colleen and Airport sites, Prudhoe Bay, and photos of Quintillion fiber optic cable impacts, North Slope, Alaska. Alaska Geobotany Center Data Report AGC18-01, Institute of Arctic Biology, University of Alaska Fairbanks, Fairbanks, Alaska, USA; Raynolds, M.K., Walker, D.A., Kofinas, G.P., & Ambrosius, K.J. (2012). Sixty years of landscape change within an arctic oilfield, Prudhoe Bay, Alaska. In A. Colpaert, T. Kumpula, & L. Mononen (Eds.), 12th International Circumpolar Remote Sensing Symposium (pp. 73-74). Levi, Finland; BENJAMIN SULLENDER, AUDUBON ALASKA, ECOLOGICAL IMPACTS OF ROAD AND AIRCRAFT-BASED ACCESS TO OIL INFRASTRUCTURE 16-17 (2017), https://ak.audubon.org/sites/g/files/amh551/f/road_aircraft_access_report_final.pdf . (519) See, e.g., D.A. Walker & K.R. Everett, Road Dust and Its Environmental Impact on Alaskan Taiga and Tundra, 19(4) ARCTIC & ALPINE RESEARCH 479 (2018).	A thorough analysis aligning with regulatory requirements, including those outlined in 40 C.F.R. § 1508.7 will be completed with site-specific plans. This will include quantifying impacts; analyzing the combination of past, present, and future actions; and addressing various potential impacts, after development of site-specific plans. This subsequent phase will allow for a more detailed and focused evaluation, considering specific activities, technologies, and conditions unique to the project area.
Brisson	Brook	Trustees for Alaska	80131	140	One specific area where BLM and FWS have still underestimated impacts is with regard to dust. The draft SEIS estimates that fugitive dust, surface water accumulation, and rising air temperatures may affect soils and vegetation up to 200 meters from roads and pads. (520) While this is an improvement from what was considered in the prior EIS and is closer to reflecting what has been observed along the Dalton Highway,(521) these impacts are still likely to occur across a much broader area. One study from the Russian Arctic found that a more appropriate buffer is 3,280 feet, given the potential zone of impacts from windblown dust.(522) (520) DSEIS at 3-82. (521) Myers-Smith, I. H., B. K. Arnesen, R. M. Thompson, and F. S. Chapin III. 2006. Cumulative Impacts on Alaskan Arctic Tundra of a Quarter Century of Road Dust. Ecoscience 13:503-510. (522) Kumpula, T., A. Pajunen, E. Kaarlejärvi, B. C. Forbes, and F. Stämmler. 2011. Land Use and Land Cover Change in Arctic Russia: Ecological and Social Implications of Industrial Development. Global Environmental Change 21:550-562.	Comprehensive discussions on the detailed impact of developments in the western portion of the North Slope have been facilitated by specific plans. However, this SEIS currently does not have specific plans or project details, only a potential area that has the potential for development. A more in-depth discussion and analysis can be conducted once these site-specific plans are established. The Draft SEIS requests robust data based on site-specific information once the development plans have been created. Additional details on the Coastal Plain's unique conditions and site-specific analysis is crucial and will be incorporated as planning progresses.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	141	BLM and FWS repeatedly refer to other documents to provide the analysis required in the draft SEIS. For example, the draft SEIS refers to the Reserve's Greater Mooses Tooth 2 development's analysis as containing a "fuller" discussion of how climate change is impacting soils and permafrost. (523) The text of the draft SEIS contains only very high level statements that climate change could influence the rate or degree of impacts.(524) This is not an adequate analysis of the likely impacts that could occur and merely pointing to the Greater Mooses Tooth 2 analysis is insufficient. The soil and permafrost regime in the Coastal Plain is very different than in the Western Arctic, as explained below. BLM and FWS need to discuss the likely changes to surface topography, increased water accumulation, changed drainage patterns (including sudden drainage events), and increased potential for soil erosion and sedimentation that are likely to occur on the Coastal Plain in ways that are unique from the NPRA. In the Refuge's Coastal Plain, many of these phenomena have already been greatly accelerated by climate change in the past 30 years.(525) The draft SEIS also cites, without informatively explaining or summarizing, the environmental analysis for the Nanushuk project, which is on state lands immediately adjacent to the Reserve; the draft SEIS relies on the Nanushuk decision to support the statements about changes to snow conditions that can occur from infrastructure, reclamation impacts, the potential for accelerated permafrost thaw, and for the proposition that placement of fill will cover soils and kill existing vegetation, which in turn alters the thermal active layer.(526) (523) DSEIS at 3-79. (524) Id. at 3-80. (525) D.A. "SKIP" WALKER ET AL., LIKELY IMPACTS OF PROPOSED 3D-SEISMIC SURVEYS TO THE TERRAIN, PERMAFROST, HYDROLOGY, AND VEGETATION IN THE 1002 AREA, ARCTIC NATIONAL WILDLIFE REFUGE, ALASKA 27-28 (2019) [hereinafter Seismic White Paper]. (526) DSEIS at 3-80 to -81; see also id. at 3-79 ("Changes in the landforms due to erosion and thermokarst, such as slumping and channelization, affects the vegetation and water characteristics of the area (USFWS 2015a)."); cf. Seismic White Paper at 25 ("[G]round compaction by seismic vehicles, combined with the projected increases in temperatures and precipitation for the region, increase the risks for long-term hydrological impacts and widespread destabilization of ice-rich permafrost terrain.").	This comment relates to the global impacts of oil and gas development; it's crucial to note that the scope of this project is limited to the specific geographic area under consideration. NEPA requires us to analyze and disclose the direct, indirect, and cumulative impacts within the defined project boundaries. As such, our analysis is limited to the potential size acreage within the Coastal Plains area that is related to the proposed oil and gas program. We recognize the importance of considering broader environmental contexts, but addressing global impacts is beyond the scope of this SEIS.
Brisson	Brook	Trustees for Alaska	80131	142	The agencies' incorporation of these unrelated decision documents by reference misses the mark for multiple reasons. First, BLM and FWS failed to provide adequate citations or explanations about the content and nature of those documents. (527) Without that information, the public cannot determine which sections the agencies are referring to or understand how the analyses in those documents may or may not apply to the Coastal Plain. (527) See 40 C.F.R. § 1502.21. Second, BLM and FWS generalized the analysis in a way that assumes all permafrost and soil conditions across the entire North Slope are homogenous, and failed to look at the conditions and concerns specific to the Coastal Plain. The terrain, permafrost, hydrology, and snow conditions on the Coastal Plain differ greatly from those found further to the west in areas like the Reserve and the Nanushuk project. The Coastal Plain is primarily dominated by foothills (45%), hilly coastal plain (22%), and river floodplains and deltas (25%), with a small portion that is part of the Sadlerochit Mountains (0.03%).(528) Flat thaw-lake plains, which are typical in the northern portion of the Reserve and Prudhoe Bay area, make up only 3% of the Arctic Refuge's Coastal Plain. (529) These differences lead to there being broad floodplains and deltas in some areas and deep ravines and gullies in other areas of the Coastal Plain, which in turn has the potential to impact snow distribution, hydrology, permafrost, and vegetation in the region(530) - all in ways that are different from what occurs further to the west in areas like the Reserve. The Coastal Plain also has relatively low amounts of winter snowfall and strong winter winds that can lead to significant scouring and unpredictable and inconsistent snow cover. (531) This in turn could lead to very different impacts from those that have occurred further to the west, where there is comparatively greater snow cover to mitigate against impacts from activities like seismic exploration. (528) Seismic White Paper at 15. (529) Id. (530) Id. (531) Id. at 7, 21-22.	Comprehensive discussions on the detailed impact of developments in the western portion of the North Slope have been facilitated by specific plans. However, this SEIS currently does not have specific plans or project details, only a potential area that has the potential for development. A more in-depth discussion and analysis can be conducted once these site-specific plans are established. The Draft SEIS requests robust data based on site-specific information once the development plans have been created. Additional details on the Coastal Plain's unique conditions and site-specific analysis is crucial and will be incorporated as planning progresses.
Brisson	Brook	Trustees for Alaska	80131	143	Similarly, BLM and FWS assume that information about recovery from past impacts is a reliable guide for the future. In reality, however, "effects of climate fluctuation further complicate the evaluation of the effects of seismic exploration."(532) This compounding effect will likely only grow more pronounced as climate change works ever greater impacts on the Coastal Plain. (533) Thus, even where retrospective study of development impacts and recovery times is done in similar geophysical conditions, it is likely that in the future those impacts and recovery times will increase. (532) Id. at 31. (533) Wang, K., Jafarov, E., Overeem, I., Romanovsky, V., Schaefer, K., Clow, G., Urban, F., Cable, W., Piper, M., Schwalm, C., Zhang, T., Kholodov, A., Sousanes, P., Loso, M., and Hill, K.: A synthesis dataset of permafrost-affected	Comprehensive discussions on the detailed impact of developments in the western portion of the North Slope have been facilitated by specific plans. However, this SEIS currently does not have specific plans or project details, only a potential area that has the potential for development. A more in-depth discussion and analysis can be conducted once these site-specific plans are established. The Draft SEIS requests robust data based on site-specific information once the development plans have been created. Additional details on the Coastal Plain's unique conditions and site-specific analysis is crucial and will be incorporated as planning progresses.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	144	The analysis also fails to account for the unique permafrost conditions on the Coastal Plain and how impacts might substantially differ from those in areas to the west. For example, extremely ice-rich silt deposits called yedoma are abundant in a broad band across the western half of the Coastal Plain.(534) These deposits can be more than 40 meters thick and, if they were to thaw completely, could result in thaw settlement at levels of 10-20 meters of more.(535) The impacts of exploration and development on yedoma and other ice-rich soil features on the Coastal Plain could lead to thermokarst formation and thermal erosion, followed by subsidence, ponding, and new surface drainage patterns that threaten extensive ecosystem changes and dangers to infrastructure, and could be difficult or impossible to mitigate. (536) Simply referencing analyses of other, different Arctic landscapes and referencing that they are present on the Coastal Plain - without more - does not constitute an assessment of potential impacts to and mitigation measures for the unique distribution and characteristics of these and other soil structures in the Coastal Plain. Despite all of these differences between the Coastal Plain and areas further to the west, the analysis fails to account for the unique ways in which impacts and degradation to soil and permafrost resources might occur on the Coastal Plain. soil thermal conditions for Alaska, USA, Earth Syst. Sci. Data, 10, 2311-2328, https://doi.org/10.5194/essd-10-2311-2018 , 2018. (534) Seismic White Paper at 26. (535) Id. (536) Id. at 23-26.	Comprehensive discussions on the detailed impact of developments in the western portion of the North Slope have been facilitated by specific plans. However, this SEIS currently does not have specific plans or project details, only a potential area that has the potential for development. A more in-depth discussion and analysis can be conducted once these site-specific plans are established. The Draft SEIS requests robust data based on site-specific information once the development plans have been created. Additional details on the Coastal Plain's unique conditions and site-specific analysis is crucial and will be incorporated as planning progresses.
Brisson	Brook	Trustees for Alaska	80131	145	BLM and FWS also need to better account for the impacts from seismic exploration to soil resources and permafrost on the Coastal Plain in the final SEIS. It is particularly important that the agencies address the undulating terrain of the Coastal Plain. Slope transitions are one of the places where seismic equipment is likely to cause damage to the vegetation and permafrost. The agencies need to account for these terrain and other differences in analyzing the potential impacts.	Comprehensive discussions on the detailed impact of developments in the western portion of the North Slope have been facilitated by specific plans. However, this SEIS currently does not have specific plans or project details, only a potential area that has the potential for development. A more in-depth discussion and analysis can be conducted once these site-specific plans are established. The Draft SEIS requests robust data based on site-specific information once the development plans have been created. Additional details on the Coastal Plain's unique conditions and site-specific analysis is crucial and will be incorporated as planning progresses.
Brisson	Brook	Trustees for Alaska	80131	146	The discussion of the impacts to the Coastal Plain that occurred from the seismic program in the 1980s still does not accurately explain those impacts to the soil and permafrost resources. The draft SEIS notes briefly in the cumulative impacts section that previous seismic exploration and an exploratory test well disturbed the surface vegetation and impacted the thaw of permafrost, changed drainage patterns, and changed vegetation growth for over 25 years after disturbance.(537) In the prior draft EIS, BLM acknowledged that, while improvements have been made to avoid impacts on the ground surface, future seismic surveys may have similar impacts.(538) BLM and FWS omitted that acknowledgement now and assert, without a basis, that newer technologies should lead to reduced impacts.(539) This does not provide any indication that the agencies have fully analyzed the potential cumulative impacts from seismic surveys, as evidenced by the fact that the draft SEIS does not even account for recent seismic proposals that have been before the agency.(540) The note that technologies have improved also ignores the reality of recent exploration proposals and is not supported. SAE's seismic exploration proposal involved much of the same equipment that caused significant impacts in the 1980s, but its proposal was substantially more intense than that conducted in the 1980s.(541) That means that modern 3D seismic exploration is likely to lead to even more extensive damage on the Coastal Plain, especially when accounting for climate change - not less, as asserted in the draft SEIS.(542) (537) DSEIS at 3-82. (538) Id. at 3-48. (539) Id. at 3-82. (540) See supra Section IV.B.7. (541) Seismic White Paper at 29. (542) See, e.g., Seismic White Paper at 10-11, 28-29.	Appendix C explains the different types of seismic exploration that are analyzed in the SEIS. Site-specific NEPA analysis would be done for any proposed seismic explorations, which would analyze potential impacts to resources, such as permafrost, vegetation, and water. The methods described in Appendix C are similar to those in SAE's proposal.
Brisson	Brook	Trustees for Alaska	80131	147	The discussion of the different impacts that are likely to occur under each alternative does not adequately distinguish what the differences will be between the various alternatives. The draft SEIS points to its overall assumption that there are likely to be different footprints for development under the different alternatives and points to different levels of road and gravel mine disturbance.(543) This does not adequately account for the differences in permafrost and soil resources across the Coastal Plain(544) and how impacts across the Coastal Plain might have different impacts than might occur under a scenario that limits development activity to certain areas in the Refuge. It also does not acknowledge or account for the fact that the draft SEIS allows for waivers of the limitations on surface occupancy, which could further compound impacts. The final SEIS should fully describe and account for the potential differences in impacts for each of the alternatives. (543) DSEIS at 3-81 to 3-82. (544) DSEIS maps 3-10, 3-11.	Comprehensive discussions on the detailed impact of developments in the western portion of the North Slope have been facilitated by specific plans. However, this SEIS currently does not have specific plans or project details, only a potential area that has the potential for development. A more in-depth discussion and analysis can be conducted once these site-specific plans are established. The Draft SEIS requests robust data based on site-specific information once the development plans have been created. Additional details on the Coastal Plain's unique conditions and site-specific analysis is crucial and will be incorporated as planning progresses.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	148	BLM and FWS also did not adequately assess the cumulative effects from the oil and gas program. The entire purpose of a cumulative effects analysis is for the agency to take a close look at the ways in which effects could combine and result in environmental degradation that could compound over time.(545) The draft SEIS only touches on a handful of points in the cumulative effects section for soils and permafrost: that previous seismic surveys caused long-term damage to soils and permafrost and future surveys may have impacts; that there could be changes to soil composition, drainage patterns, erosion, and thermal regimes; and that climate change could influence the rate or degree of cumulative impacts.(546) While BLM and FWS recognize these impact categories, it does nothing to quantify or otherwise analyze them and disclose to the public and decision makers how they are likely to affect the Coastal Plain. The agency also does not discuss how past, present, or future actions could combine to exacerbate and magnify impacts, which is the core of a cumulative impacts analysis. The current discussion is not an adequate analysis of the potential cumulative effects. The draft SEIS mentions seismic surveys and the acreage directly occupied by surface facilities, but does not account for other impacts, such as those from exploratory drilling and ice roads, or other off-road travel that could occur in the program area. The discussion also does not account for cumulative impacts to soils and vegetation that could occur from contamination issues - a serious omission given the long history of oil spills from North Slope oil drilling and transportation operations. (545) 40 C.F.R. § 1508.7 (indicating a cumulative impact is "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions"); see also Vargas-Moreno, J.C., B. Fradkin, S. Emperador, O. Lee, (eds). 2016. Project Summary: Prioritizing Science Needs Through Participatory Scenarios for Energy and Resource Development on the North Slope and Adjacent Seas. GeoAdaptive, LLC, Boston, Massachusetts, available at http://catalog.northslopescience.org/catalog/entries/8302-nssi-scenarios-final-reports-prioritizing-sc . (546) DSEIS at 3-82 to 3-83.	A thorough analysis aligning with regulatory requirements, including those outlined in 40 C.F.R. § 1508.7 will be completed with site-specific plans. This will include quantifying impacts; analyzing the combination of past, present, and future actions; and addressing various potential impacts, after development of site-specific plans. This subsequent phase will allow for a more detailed and focused evaluation, considering specific activities, technologies, and conditions unique to the project area.
Brisson	Brook	Trustees for Alaska	80131	149	BLM and FWS also failed to adequately account for changes to surface hydrology and drainage patterns associated with changes in vegetation and soil resources, as well as from water impoundment. Any time water collects, there is greater heat transfer to the adjacent soil. Once water channels or ponding are changed or increased, there is a positive feedback cycle of warming and acceleration of thaw. Changes to surface hydrology drainage patterns can lead to increased thermo-erosion and thermokarsting. Elsewhere in the draft SEIS, BLM and FWS state that "[p]otential disturbance of the vegetation or water and wide erosion could initiate thawing of the upper ice-rich zones and trigger the development of thaw-lakes."(547) The agencies need to better analyze the development of thaw-lakes, thermo-erosion channels, and thermokarst features in the soils and permafrost section. (547) DSEIS at 3-96.	Comprehensive discussions on the detailed impact of developments in the western portion of the North Slope have been facilitated by specific plans. However, this SEIS currently does not have specific plans or project details, only a potential area that has the potential for development. A more in-depth discussion and analysis can be conducted once these site-specific plans are established. The Draft SEIS requests robust data based on site-specific information once the development plans have been created. Additional details on the Coastal Plain's unique conditions and site-specific analysis is crucial and will be incorporated as planning progresses.
Brisson	Brook	Trustees for Alaska	80131	150	The agencies limit their analysis of cumulative impacts to the program area, contrary to NEPA.(548) BLM and FWS should not limit the geographic area for their analysis in that way; the agencies should consider broader impacts and degradation of permafrost and soil resources across the North Slope and northwest Canada. This should include an analysis of not only oil and gas impacts, but also other infrastructure that could further degrade oil and permafrost resources. BLM and FWS should also consider other nearby seismic activities, such as those conducted by SAE in previous winters on state lands immediately adjacent to the Refuge and any activities that may be proposed on private lands within the boundaries of the Refuge.(549) The potential cumulative effects to soils and permafrost have the potential to extend well beyond the limited footprint of the program area.(550) This is particularly important given the potential for climate change to further accelerate and exacerbate the significant impacts to permafrost across all of the Arctic. (548) DSEIS App. F at F-19. (549) See, e.g., Alaska Dep't of Nat. Res., MLUP NS 18-004 SAExploration, Inc. Staines 3D Geophysical Exploration Permit Approval (2018), http://dog.dnr.alaska.gov/Documents/Permitting/NorthSlope/OperationPlans/2019/2018-12-31 Decision MLUPNS 18-004 Approved.pdf ; Henry Fountain, See the Scars that Oil Exploration Cut Across Alaska's Wilderness, N.Y. Times, Aug. 3, 2018, https://www.nytimes.com/2018/08/03/climate/alaska-anwr-seismic-testing-tracks.html (showing impacts from SAE's exploration activities just outside the Refuge last winter). (550) See, e.g., Reynolds, Martha K. et al., Cumulative Geoecological Effects of 62 Years of Infrastructure and Climate Change in Ice-Rich Permafrost Landscapes, Prudhoe Bay Oilfield, Alaska, GLOBAL CHANGE BIOLOGY (2014).	This comment relates to the global impacts of oil and gas development; it's crucial to note that the scope of this project is limited to the specific geographic area under consideration. NEPA requires us to analyze and disclose the direct, indirect, and cumulative impacts within the defined project boundaries. As such, our analysis is limited to the potential size acreage within the Coastal Plains area that is related to the proposed oil and gas program. We recognize the importance of considering broader environmental contexts, but addressing global impacts is beyond the scope of this SEIS.
Brisson	Brook	Trustees for Alaska	80131	158	Groups are concerned that BLM and FWS are missing and need to identify and obtain key information to fully understand and attempt to mitigate against the potentially significant impacts of oil and gas activities on soil and permafrost in the Refuge, specifically information about ground-ice distribution, wind speeds, and snow cover to better understand where scour and draft occurs on the Coastal Plain, and the range of potential impacts to permafrost and hydrology likely to occur in different snow conditions, terrain types, and vegetation types. If the agencies cannot obtain this information now, they should include a requirement in all applicable stipulations and ROPs that require the applicant to obtain this information prior to submitting an application.	Comprehensive discussions on the detailed impact of developments in the western portion of the North Slope have been facilitated by specific plans. However, this SEIS currently does not have specific plans or project details, only a potential area that has the potential for development. A more in-depth discussion and analysis can be conducted once these site-specific plans are established. The Draft SEIS requests robust data based on site-specific information once the development plans have been created. Additional details on the Coastal Plain's unique conditions and site-specific analysis is crucial and will be incorporated as planning progresses.

U.3.43 Solid and Hazardous Waste

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	36	Oil & Hazardous Substance Spills. Despite the very real risk of shipping-related oil and hazardous substance spills and related impacts that could result from development and transport of equipment and petroleum products, these issues are only cursorily addressed in the Draft SEIS. The apparent rationale for the general exclusion of shipping-related spills from the Draft SEIS analysis is buried in the marine mammal section. The narrative strongly downplays the potential likelihood, extent, and harm of any oil or hazardous substance spill. by suggesting that 1. there is a "low risk" of spilled fuel if a vessel carrying fuel were to run aground during barging,(68) 2. a large oil spill in the Arctic marine environment is unlikely because "[t]o date," such as a spill has "not occurred,"(69) 3. spill risks will be reduced through "safeguards" specified in the required oil spill prevention and contingency plans,(70) 4.the quantities of oil or hazardous substances likely to be released would be "relatively small,"(71) and 5.potential spills during refueling at sea would be only "small, accidental" spills.(72) (68) Id, at p. 3-256. (69) Id. (70) Id at pp. 3-257 and 3-259. (71) Id at p. 3-257. (72) Id at p. 3-259. This rationale is fundamentally flawed. While bulk fuel has historically been delivered to the North Slope by tanker truck along the haul road, bulk fuel deliveries by barge have commenced and are likely to become the preferred option in the future. The first large-scale fuel delivery by barge took place in September 2018, and it carried 2 million gallons of fuel from Valdez to Deadhorse.(73) A collision, grounding, or other accident resulting in the discharge of even half the cargo of a fuel barge of this size (i.e., 1 million gallons) would be 10 times greater than BLM's own threshold for a "very large" spill,(74) and it would constitute a major spill by any other estimation as well. Moreover, as the ice-free, open water season lengthens due to warming temperatures in the Arctic, transporting fuel by barge is likely to be viewed as a more convenient and/or cost-effective method of transporting fuel compared to the much smaller and more frequent 10,000-gallon increments that can be transported via tanker truck. Barge deliveries may even be the only feasible way of transporting fuel in support of Coastal Plain oil and gas operations because of the lack of a road between Deadhorse and Kaktovik. (73) See KTUU, Barge delivers historic fuel shipment to Alaska's North Slope (Sept. 6, 2018), available at https://www.ktuu.com/content/news/Barge-delivers-historic-fuel-shipment-to-North-Slope-492658221.html. (74) See Draft SEIS, at p. 3-107 (identifying spills over 100,000 gallons as "very large"). Furthermore, since the practice of bulk fuel barging to the Arctic is relatively new to this region, the lack of historic spills is not a viable metric or indicator of future risk, and the existence of oil spill prevention and contingency planning requirements does not eliminate the risk of a spill and does not excuse the agencies from their duty to analyze and explain such risks in an SEIS. Indeed, it is worth noting the upcoming 30th anniversary of the Exxon Valdez oil spill on March 24, 2019. The Exxon Valdez released 11 million gallons of oil into the pristine waters of Prince William Sound and left a ruinous legacy from which the region has never fully recovered. A spill of this magnitude in the Arctic would have similarly devastating consequences on marine and coastal ecosystems and subsistence resources and on the people who depend upon them.	Marine vessel traffic is generally beyond the scope of this analysis, and the BLM does not have authority to regulate marine traffic outside the Coastal Plain. The RFD Scenario as discussed in Appendix C which assumes barging will be very limited and fuel for equipment would be hauled overland. The RFD Scenario anticipates barging will be very limited and fuel for equipment would be hauled overland. A different RFD Scenario would result in additional analysis. Direct and indirect impacts cannot be analyzed on a site-specific basis within this SEIS, but they are analyzed for the program area generally based off the hypothetical unconstrained scenarios in Appendix C. Regarding spills, operators of barges are required to follow all federal, state, and local requirements related to fuel and hazardous substance transport. Transport of hazardous materials is coordinated and regulated by ADEC and the NSB. BLM requirements should not duplicate State of Alaska requirements, especially when ADEC requirements are more detailed, and in some cases more stringent, than federal requirements. At the time of a site-specific proposal, the operator will be required to submit a spill prevention, control, and countermeasure plan.
Freitas	Benjamin	World Wildlife Fund	79957	37	Additionally, as the Draft SEIS acknowledges, toxic chemicals and other hazardous materials are used in oil and gas operations and have been known to kill polar bears through accidental ingestion.(75) In fact, on the North Slope of Alaska, substantial quantities of acidic, explosive, poisonous, flammable, and corrosive materials are transported into the area each year, including several substances designated "extremely hazardous," such as sulfuric acid, hydrochloric acid, hydrogen peroxide, and chlorine.(76) The same types of chemicals can be expected to be used at new oil and gas facilities on the Coastal Plain. Marine transportation is likely to be used for Coastal Plain operations given the lack of a road between Kaktovik and Deadhorse. The spill analysis must therefore be expanded to encompass toxic chemical spills into the marine environment from shipping activities both near the program area and along the marine barge route from Dutch Harbor to Kaktovik. (75) See, e.g., Draft SEIS, a p. 3-257. (76) See U.S. Coast Guard, et al, Arctic & Western Alaska Area Contingency Plan, at 7-12 to 7-14 (version 2020.0, Dec. 2020), available at http://dec.alaska.gov/media/10703/arctic-western-plan.pdf.	Marine vessel traffic is generally beyond the scope of this analysis, and the BLM does not have authority to regulate marine traffic outside the Coastal Plain. As discussed in the RFD Scenario anticipates barging will be very limited. A different RFD Scenario would result in additional analysis. Direct and indirect impacts cannot be analyzed on a site-specific basis within this SEIS, but they are analyzed for the program area generally based off the hypothetical unconstrained scenarios in Appendix C. The BLM does not have authority to regulate marine traffic outside the Coastal Plain. Regarding spills, operators of barges are required to follow all federal, state, and local requirements related to fuel and hazardous substance transport. Transport of hazardous materials is coordinated and regulated by ADEC and the NSB. BLM requirements should not duplicate State of Alaska requirements, especially when ADEC requirements are more detailed, and in some cases more stringent, than federal requirements. Future site-specific NEPA analyses for proposed projects would be required. At the time of a site-specific proposal, the operator will be required to submit a spill prevention, control, and countermeasure plan.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	39	Finally, the Final SEIS must consider the marine impacts of potential oil spills on keystone Arctic species, such as the Arctic cod (<i>Boreogadus saida</i>). Arctic cod are an energy-rich Arctic keystone forage fish that serve as primary prey species for marine mammals, seabirds, and fish. A recent study by scientists at Oregon State University and NOAA found that exposure of Arctic cod eggs to low dosages of Alaskan North Slope crude oil resulted in sublethal cardiac abnormalities and deficits in energetics that lasted into the juvenile stage.(78) The scientists found that developing Arctic cod exposed to oil as embryos entered the overwintering period with less energy reserves, contributing to high mortality rates during a period critical to their survival. Reduced survival and fat content are irreversible impacts that make Arctic cod, and in turn, the maritime Arctic ecosystem that depends on them, highly vulnerable to an oil spill. The SEIS's spill analysis must also therefore be expanded to encompass the impacts of oil spills on the survival of keystone species at critical life stages and the marine ecosystems whose life they support. (78) Laurel B, Copeman L, Incardona J, Linbo T, Scholz N, Ylitalo G, Iseri P, Nordtug T, Sørhus E, Donald C, Allan S, Spencer M, Cameron J, Meier S. 2019. Acute and latent bioenergetic impacts of oil on a keystone Arctic forage fish (<i>Boreogadus saida</i>). iScience, Pp 22 https://doi.org/10.1016/j.isci.2019.08.051 .	Arctic cod EFH is discussed in Appendix Q. BLM requirements should not duplicate State of Alaska requirements, especially when ADEC requirements are more detailed, and in some cases more stringent, than federal requirements. Future site-specific NEPA analyses for proposed projects would be required. A more quantified analysis for specific species is more appropriate during a site-specific analysis. Additionally, at the time of a site-specific proposal, the operator will be required to submit a spill prevention, control, and countermeasure plan.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	133	The agencies must analyze all reasonably foreseeable impacts associated with potential blowouts and spills. Oil exploration and production inevitably will result in a blowout and/or spills. Operators cannot prevent all exploratory and production-related blowouts because companies may encounter unexpected or changing subsurface conditions that have not been adequately analyzed during drilling. Similarly, major and minor spills can occur from corrosion, human error, inadequate maintenance, earthquakes, design flaws, inadequate materials, poor construction, and freezing. Inadequate leak detection and problematic valve placement for gathering and transmission pipelines also can lead to larger spills. And management and disposal of drilling muds and cuttings, produced water, and other forms of wastewater including oil-contaminated storm-water, and hydraulic fracturing related chemicals and wastes can have significant spill impacts as well. The agency must fully analyze and consider how it will ensure operators will comply with all relevant lease and state and federal regulatory and permitting requirements, particularly given the remoteness of the region and associated challenges with and costs of performing governmental oversight inspections. Chapter 3's analysis of spill rates needs to include only updated data. Chapter 3 says "The probability of a spill over 2,380 barrels (100,000 gallons) is low as one event (less than 0.1 percent occurred during the production of 3.7 BBO between 1995 and 2003"(232) (emphasis added). This statement should be removed. The draft SEIS does state that between 1995 and 2022 there were six spills greater than 2,380 barrels (100,000 gallons) and 46 spills greater than 238 barrels (10,000 gallons).(233) Both BP and ConocoPhillips have had blowouts on the North Slope during this period and those events should be noted. (232) Draft SEIS at 3-107 to 108. (233) Draft SEIS at 3-108. Additionally, Chapter 3 should state that Alternative B has the highest likelihood of spills because production and infrastructure for that alternative would be greatest.	The reference to 1995-2003 data and the reference to low probability of a spill over 2,380 gallons have been removed. Please refer to Appendix B, Section B.2.1 for discussion of climate change and BLM 2018 (GMT2). Appendix I estimates the number of spills by substance per spill size per billion barrels of oil produced (which uses the minimum and maximum production estimate).

U.3.44 Special Designations

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Not Provided	Not Provided	-	19723	4	We applaud the administration’s plans to strengthen protections for existing Special Areas through the proposed rules, and urge the administration to take further action by expanding and adopting new Special Areas as well as further conditioning activities on existing leases.	This SEIS focuses on analyzing the impacts of the proposed management on existing special designations. While we appreciate your suggestion to expand and adopt new specials designations, this is outside the scope of this SEIS.
Hamilton	Bruce	-	45518	6	The proposed regulations for management of the Western Arctic (NPRA) are a good start As the BLM revises the draft rules, I urge you to take every opportunity possible to expand protections for not only the 13 million acres of existing designated Special Areas, but also to other areas in the Reserve that could be harmed by further oil and gas development. The Willow Project approval was a huge public policy mistake by earlier Administrations and we need to limit the damage.	No change made. While we appreciate your suggestion to expand protections to a broader range of areas, it's important to note that this SEIS has a specific scope and is not intended to address all potential impacts across the Arctic Refuge or adjacent lands.
Adoko	Ashlee	State Of Alaska	80221	53	Document Reference Chapter 3, Section 3.4.7, Special Designations, Reviewer JW Agency ADF&G ANILCA Resource/Topic Wild and Scenic Rivers and Wilderness Qualities and Values Comment: The area identified by Congress in P.L. 115-97 has neither designated wild and scenic rivers nor wilderness. These sections, as well as any related stipulations, should be deleted from the SEIS.	No change made. The inclusion of candidate rivers, such as the Hulahula, in the analysis is based on the obligation of Federal managers to protect the characteristics of these rivers under consideration by Congress for inclusion in the Wild and Scenic Rivers system. This obligation stems from the need to maintain the qualities of these rivers as they were found eligible and suitable. This rationale and the analysis supporting it can be found in Chapter 3, Section 3.4.7 of the SEIS under the Special Designations section.
Adoko	Ashlee	State Of Alaska	80221	54	Document Reference Chapter 3, Section 3.4.7, Special Designations, Wild and Scenic Rivers Reviewer JW Agency ADF&G ANILCA Resource/Topic Wild and Scenic Rivers and Wilderness Qualities and Values Comment: "Section 3.4.7 states: "... where practicable and where it does not conflict with the purposes of PL 115-97, stipulations would be applied to protect WSR characteristics including water quality and free flowing conditions on rivers determined to be suitable and recommended to Congress to be included in the system." The purpose of PL 115-97 is to "...establish and administer a competitive oil and gas program for the leasing, development, production, and transportation of oil and gas in and from the Coastal Plain." (Sec. 20001(b)(2)). Federal managers in Alaska are not obligated to use existing management authorities to protect the characteristics for candidate rivers nor for rivers outside the program area which a federal agency believes, without going through the required public WSR review, has WSR ORVs. Such direction is given at a policy level and statutory requirements come before policy. We are aware the USFWS states Section 5(d)(1) of the WSRRA grants authority to conduct WSR reviews (referred to as agency-directed reviews or studies) and this is true outside of Alaska. However, that perceived authority in the WSRRA preceded the passage of ANILCA and the prohibition in Section 1326(b). Further, the authority in ANILCA Section 1317 to conduct a one-time wilderness review sunsetted in 1985. Therefore, any wilderness or WSR reviews in the Coastal Plain would violate ANILCA. It is inappropriate for the SEIS to carry forward the results of an outdated and legally flawed WSR review by identifying both rivers found eligible and/or suitable as special WSR designations needing additional protections to ensure their status for future designation, especially considering no congressional action occurred to designate any of these rivers, nor did Congress even have the option to take any action on eligible rivers."	No change. The comment raises legal questions regarding WSR protection and potential conflicts with oil and gas development in Alaska. There may be some areas where the commentor's interpretations and arguments could benefit from further clarification or consideration. Specifically, the comment's claim that "where practicable" allows prioritizing oil and gas development over WSR protection might oversimplify a complex legal requirement. Other interpretations include considering practicability within the context of environmental protection laws and the overarching goal of balanced management. Also, The comment's interpretation of Section 5(d)(1) being overridden by ANILCA is questionable. The specific legal application depends on factors like the scope of the review and the particular context within the Coastal Plain.
Adoko	Ashlee	State Of Alaska	80221	57	Document Reference Universal Reviewer MD Agency DNR- ANILCA Resource/Topic Buffer zones Comment: Neither the Wilderness Act, the Wild and Scenic River Act, nor ANILCA allows the BLM/USFWS to manage lands outside of potential wild and scenic river corridors or potential wilderness areas to protect against visual or other impacts to protected/designated areas. These laws don't allow agencies to create protected buffers around designated areas. Please delete references to these buffer zones. (e.g., Section 3.4.7, Special Designations, page 3-396, Paragraph 1)	No change made. Similar to the Wilderness Act, Section 7 of the Wild and Scenic River Act allows the consideration of a river's "outstandingly remarkable values" when managing adjacent lands. This consideration provides the basis for potentially mitigating visual or other impacts on the designated river and its values. Lease stipulations and ROPs will be applied consistent with BLM/USFWS authorities, including those under the Wild and Scenic River Act.
Adoko	Ashlee	State Of Alaska	80221	59	Document Reference Universal Reviewer Agency Resource/Topic Comment: The State acknowledges that BLM and the USFWS are not designating new wild and scenic rivers or wilderness areas in this SEIS process. However, the State asserts that to reference these areas in the SEIS as "under consideration by Congress for inclusion" or "suitable for designation" as Wild and Scenic Rivers or Wilderness is misleading and inaccurate. References to wild and scenic river eligibility or management of lands to protect eligible wilderness should be removed. For example, managing non-designated rivers to protect ORVs is inappropriate; the Hulahula, Canning, Jago, and Okpilak are no longer candidate rivers.	Clarification added. The specific language used in the SEIS was reviewed to ensure that it accurately reflects the eligibility or suitability of these areas without implying immediate consideration by Congress. The Final EIS also assessed whether the references align with the current status of the mentioned areas and accurately represent the intent of the SEIS process.

U.3.45 Subsistence Uses and Resources

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	413	The agencies also fail to accurately analyze and describe subsistence impacts due to climate change. For example, the agencies note climate change "could influence the rate or degree" of cumulative impacts to subsistence resources.(1145) Indicating that climate change "can" affect resource availability and "could" impact subsistence resources in the cumulative case is not analysis. This section is also misleading. The statement that subsistence hunters "may" be required to travel farther suggests climate change is an impact that may occur only in the future.(1146) But, as the agencies acknowledge, climate change has been impacting subsistence resources for decades.(1147) The agencies must revise their cumulative analysis of subsistence impacts to reflect the fact that climate change impacts are already occurring and that subsistence users are currently grappling with the effects.(1148) (1145) Id. at 3-327. (1146) Id. at 3-327. (1147) Id. at 3-330 (explaining climate change has been linked to caribou population declines in "recent decades"). (1148) See e.g. id. App. C at C-18 (quoting Macarthur Tritt, DEIS Public Meeting, February 9, 2019, Venetie, Alaska).	A discussion of how climate change has already affected (and is currently affecting) subsistence uses is provided in Section B.4.3, "Affected Environment," "Climate Change," and the analysis goes beyond what is described in the comment. The cumulative analysis acknowledges and summarizes current effects of climate change on subsistence, while noting how development may further contribute to these effects. Later in the subsistence cumulative analysis, the section describes in greater detail how climate change and development activities can interact to increase the intensity and extent of impacts to subsistence. Section B.4.3 was reviewed and edited to clarify subsistence users are already reporting traveling farther as a result in changes in resource distribution.
Heslep	Alison	-	80164	27	#13 Ch/Sec/Sub-sec 3.3.5 Title Polar Bear Comment(s) The draft SEIS recognizes the shared nature of polar bears with Canadian users and references the Inuvialuit- In~upiat Polar Bear Management Agreement but does not examine the potential impacts of the Alternatives on polar bears and their subsistence use by both the In~upiat and Inuvialuit in any detail. The draft SEIS presumes that mitigation measures benefiting Alaskan subsistence hunters will similarly benefit Canadian hunters. Tables 3-40 and 3-41 compare the development Alternatives in terms of the potential number of affected polar bear dens and area of denning habitat but do not compare the Alternatives in terms of their impact on subsistence use. The draft SEIS notes that "any additional mortality that affects the SBS stocks could have repercussions for the harvest quota and the hunters in both nations who are party to the agreement." However, it did not elaborate on the extent to which the population might decrease and its accompanying impacts on harvest levels for Inuvialuit hunters regarding the potential effects on the Inuvialuit's subsistence hunting of polar bears. Recommendation(s) Add a new section that evaluates the potential effects of each Alternative (A, B, C, and D) on the subsistence use of polar bears by the In~upiat and Inuvialuit within the Transboundary Impacts subsection of Section 3.3.5 in the draft SEIS. Alternatively, this information can be incorporated into Section 3.4.3 - Subsistence Uses and Resources - Transboundary Impacts.	Section 3.4.3, Transboundary Impacts, addresses potential impacts to subsistence uses of polar bears. Added additional detail regarding impacts to polar bears, and differences between alternatives, in Section 3.4.3, Transboundary Impacts.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	139	The way of life of the Tribes' Tribal citizens and communities depends on the Porcupine Caribou Herd, migratory waterfowl, and other wildlife that rely on the Coastal Plain of the Arctic Refuge. In addition to caribou, the Coastal Plain is also home to many migratory bird species that are important for sustaining Gwich'in people's traditional subsistence culture and way of life. A profusion of vegetation and insect life on the Coastal Plain in the spring, summer, and fall attracts tens of thousands of geese and other birds each year as part of their annual migrations across six continents. Tribal citizens hunt these migratory geese, an activity important for social cohesion and for the transmission of language and cultural values from one generation to the next. These wild resources are essential for subsistence and for maintaining sharing networks, kinship ties, and other social, cultural, physical, spiritual, and religious aspects of Gwich'in identity and community well-being. The agencies' draft SEIS fails to incorporate this important context into its analysis of direct, indirect, and cumulative impacts of the oil and gas program on subsistence, and the cascading effects such a program would have throughout the Tribes' communities and way of life. Subsistence is a way of life for the Gwich'in. This view is contrary to how BLM and USFWS view subsistence. Indeed, many of the criticisms the Tribes raised of the 2019 Final EIS remain applicable to this draft SEIS. BLM and USFWS use the word "resource" over 200 times to describe the Gwich'in way of life in the subsistence section. Describing something as a resource this way reflects a worldview based on an extractive relationship, a holdover view from the 2019 Final EIS. Subsistence as an extractive relationship underpins BLM and USFWS's EIS and SEIS subsistence analyses and results in flawed conclusions that underestimate the impacts to the Gwich'in. BLM and USFWS must reevaluate and rework the subsistence analysis to reflect the worldview of those whose subsistence would be impacted. Only then will the subsistence analysis be accurate.	"Subsistence resources" is a commonly used term across the literature to describe the various types of animals, vegetation, and other materials that are central to the subsistence lifestyle. Reviewed language through Section B.4.3 and, where appropriate, replaced "resources" with more specific terminology.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	137	In the subsistence analysis for Arctic Village, BLM and USFWS need to make it clear from the beginning that the comprehensive subsistence survey data they are relying upon for the Vashraii K'oo (Arctic Village) analysis is 40 years old.(239) BLM and USWFS need better data for a legitimate analysis. As stated in comments on the Cultural Resources Chapter 3.4.2, below, relying on limited data creates an inaccurate picture that does not meet NEPA methodology and scientific accuracy requiring that the agencies "shall ensure the professional integrity, including scientific integrity, of the discussions and analyses in environmental documents."(240) In order to conduct a proper analysis of subsistence impacts, the agencies must incorporate the Traditional Knowledge found in Attachment A as well as western science. (239) Caulfield, R. A. 1983. Subsistence land use in Upper Yukon-porcupine communities, Alaska: Dinjii Nats'aa Nan Kak Adagwaandaii. Juneau, AK: Alaska Department of Fish and Game, Division of Subsistence. (240) 40 CFR § 1502.23 Moreover, it is puzzling why much of the Arctic Village and Venetie subsistence analyses focus on animals the communities get from outside of the Coastal Plain, such as fish. The two villages get caribou and waterfowl from the Coastal Plain. BLM and USFWS need to refocus the subsistence analyses on these animals as that is what the leasing program would primarily impact. As described in this section and in Section IV.B above, the agencies' analysis of impacts to caribou and waterfowl is inadequate.	BLM uses the best available information to describe the subsistence affected environment of the study communities. More recent data are not available for Arctic Village. Appendix D of the SEIS provides traditional knowledge of indigenous and local residents as it pertains to the Arctic Refuge. The affected environment is meant to provide a baseline of subsistence uses by study communities. Inclusion of all resources, regardless of potential impacts, is relevant, as a decrease in harvests of one resource may require an increase in harvests of other resources. The environmental consequences focuses solely on the resources most likely to be affected for Arctic Village and Venetie (caribou and waterfowl).
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	13	BLM makes a number of vague, negative, and adverse assertions regarding impacts to subsistence in the draft SEIS. For example, BLM fails to include supporting data and analysis regarding the specific impacts they cite, such as the impact that an access road may have on a caribou herd. Caribou herds and other species, however, can safely co-exist and increase in numbers while responsible oil production occurs on the North Slope of Alaska. BLM has included evidence to support this assertion in prior regulatory efforts.	Conclusions regarding impacts to subsistence are based on available subsistence, traditional knowledge, and biological data. Reviewed SEIS to ensure data are properly cited.
Jackson	Matt	-	80374	2	I assume you up there at that table and the other decision makers or scientists, your land managers, you know climate change is real. You know fossil fuels cause climate change, and you know that those emissions are going to cost subsistence impacts in every corner of the globe from the refuge all the way down the Tongass. There will be subsistence impacts.	Impacts of climate change and development on subsistence are addressed in Section 3.4.3, Cumulative Impacts.
K	PJ	-	79882	4	the alternatives set forth in the Draft SEIS do not grant strong enough protections of the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security.	Impacts of oil and gas exploration and development, including infrastructure such as roads, on subsistence are addressed in Section 3.4.3.
Brisson	Brook	Trustees for Alaska	80131	403	The agencies also notably fail to meaningfully address impacts to waterfowl. Waterfowl are an important subsistence resources consumed in all four of the communities included in the agencies' subsistence analysis.(1114) As addressed in more detail above, development in the program area could impact the availability or abundance of waterfowl including eiders in communities including Nuiqsut and Utqiagvik.(1115) Yet, the agencies' impact analysis fails to address how waterfowl subsistence hunters will be impacted under the action alternatives. The sum total of the agencies' analysis of waterfowl impacts is the acknowledgement that all action alternatives could impact waterfowl harvests(1116) and that such impacts would be lowest under Alternative D.(1117) Waterfowl are also not addressed in the agencies' transboundary impact analysis beyond noting waterfowl are relevant to the analysis and rely on the Coastal Plain.(1118) (1114) Id. at 3-294 (Kaktovik,); 3-296 (Nuiqsut); 3-298 (Arctic Village); 3-299 (Venetie). (1115) See supra Section VI.H. (1116) Id. at 3-308 to 309. (1117) Id. at 3-324. (1118) Id. at 3-305.	Impacts on waterfowl are addressed primarily under Section 3.4.3, "Impacts Common to All Action Alternatives," as the primary differences between the alternatives are the magnitude and extent based on the area open to leasing. Specific impacts to waterfowl are provided in Section 3.3.3, Birds. Reviewed alternatives discussion and added text specific to waterfowl as appropriate. Also added additional discussion of impacts to waterfowl under "Impacts Common to All Action Alternatives."
Dieterich	Michele	-	75722	4	There are not enough protections within the DSEIS for caribou. This animal is a cultural heritage and a food source for local people in the area. The effects of global warming must be addressed when looking at protecting the caribou migration route. This route will change as the climate changes. What will it look like in the future and how will the needs of the dwindling caribou change? The local Porcupine herd must be protected in the DSEIS, however, the DSEIS fails to fully analyze the effects to caribou and caribou habitat.	Impacts to caribou and subsistence uses of caribou, in addition to cumulative and climate change impacts, are discussed in Section 3.3.4 and 3.4.4 of the SEIS.
Simple Jr.	Gary	-	80417	2	Also, I want to stress the importance of our food resources that migrate through the 1002 area. The caribou, fish, ducks, and geese feed the entire Yukon Flats, not only Venetie and Arctic. Any loss or change of these species cannot be replaced by another food source. This fight to save our culture is one that I will fight and pass on to my children.	Impacts to communities who use the Porcupine Caribou Herd and Central Arctic Herd for subsistence are addressed in Section 3.4.3. Reviewed SEIS subsistence section to ensure indirect impacts on other resource harvesting activities (e.g., waterfowl) are adequately addressed.
Peter	Enei Begaye	-	80387	1	And on behalf of Native Movement, we oppose any amount of drilling in the Arctic Refuge in this very sensitive place of the birthing ground of the Porcupine caribou. Any amount of oil and gas development will be detrimental to the lands, waters, the animals, the peoples who depend on those animals and lands, and to us as global citizens.	Impacts to the Porcupine herd and Porcupine herd subsistence, including cumulative and climate change impacts, are discussed in Section 3.3.4 and 3.4.4. The SEIS also addresses the potential cultural, social, subsistence, and spiritual impacts to Native users in Sections 3.4.2, 3.4.3, 3.4.4.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	412	The draft SEIS also states that "other" RFFAS including "new permanent and seasonal roads . . . through the ASTAR program" may impact subsistence.(1142) Generalizing subsistence impacts from roads in this way prevents meaningful analysis of the ways a particular road might shift traditional hunting areas, alter and destroy vegetation, deflect and injure wildlife, or lead to increased competition in the event a road is eventually made open to the public. The intensity of such impacts will depend greatly on the particular location and plans for construction and usage of proposed roads. Referencing road impacts as part of a generalized category is made more problematic by the lack of clarity in the draft SEIS regarding how and when hunting might occur from roads in the program area.(1143) The agencies should clarify this point and specifically address roads that are likely to impact subsistence in the final SEIS. For example, BLM and FWS failed to specifically identify the annual snow road proposed by Kaktovik Inupiat Corporation as an RFFA that is relevant to the agencies' cumulative impact analysis. The proposed road would span from the western Coastal Plain boundary to the community of Kaktovik impacting subsistence resources such as polar bears, birds, fish, and caribou.(1144) In addition, as the application for the road indicates, Kaktovik Inupiat Corporation may seek to build a permanent gravel road; a potential permanent road is not analyzed. (1142) Id. at 3-363 to 64. (1143) Id. at 3-209 (noting without further detail that "[s]ome hunting by local residents is likely to occur from roads in the program area"). (1144) Id. App. F at F-10.	It is not possible to know exactly how road use would be managed under the reasonably foreseeable development scenario, but it may be similar to recent road use agreements between Nuiqsut and ConocoPhillips, Alaska . Will review and edit language for clarity as appropriate. The proposed Kaktovik road will require its own permitting and analyses and is not considered reasonably foreseeable at this time.
Stickman	Danielle	-	80457	2	Besides being vital habitat for resident and migratory fish, wolves, polar bears, doll sheep, all 3 species of Northern American Bears, migratory birds among other species, the Coastal Plain is the calving ground of the porcupine kirbu bird, which migrates to the Coastal Plain each year to birth and nurse their young, sustaining a species population that is essential to the food security and cultural survival of the region's indigenous communities. The people who make up these communities have stewarded the land since time immemorial, and have deep ties to the land and wildlife. Their sovereign rights must be respected, and their livelihood and villages protected by ensuring the long-term health and well being of the caribou.	Potential cultural, subsistence, and sociocultural impacts to subsistence users of the Program area are discussed in Sections 3.4.2, 3.4.3, and 3.4.4.
Peter	Enei Begaye	-	80363	2	But from the summaries that I've read so far, this EIS does not adequately take into consideration or address the subsistence rights, the impacts of what would happen to the caribou if oil and gas drilling -- any amount of oil and gas drilling is allowed to happen in the Coastal Plain. And not just the caribou, right, but the -- all of the relatives that are tied to the caribou, all of the relatives that depend on the caribou.	Potential impacts of oil and gas leasing, exploration, and development within the Program area on subsistence uses and caribou are discussed in Section 3.4.3.
Erickson	Diloolaa	-	80360	2	Like I said, my family comes from Kaltag, which is far from here downriver, but, you know, the things that happen upriver, they impact us downriver too. You know, people have talked up here about the lack of salmon and the lack of moose, and I think that's also a really important thing to understand, is our main food sources are dwindling at rapid rates, and it's scary. It's scary to see the empty smokehouses. It's scary to see how many people, even all the way down in Kayou [ph] didn't get moose this year. And those are our main sources of food. What do we do when we don't have moose and fish for our freezer? We rely on the store bought food, which is less nutritious, it's not good, and it's expensive.	Potential indirect and cumulative subsistence impacts on communities outside the Program area are addressed in Section 3.4.3.
Erickson	Diloolaa	-	80360	4	And it was mentioned earlier that there is a treaty obligation here with the caribou just like there is a treaty obligation with the salmon, and both of those treaties are being broken right now. Neither of them are being upheld. And as we talked about earlier -- was talked about earlier, you know, being a good relative, [Gwich'in spoken], it's our responsibility to ensure that these resources that we enjoy, our relatives across the imaginary line that was drawn can also enjoy, because they're not our resources. It's not our fish. It's the people's fish and it's for everybody. And it's important to understand that.	Potential indirect and cumulative subsistence impacts on communities outside the Program area are addressed in Section 3.4.3.
Ward-Peter	Kayleen	-	80425	2	Our waterfowl, especially for the spring, our spring hunting, the waterfowl are super important for all our villages. It's the meat we wait for for the spring when moose and caribou start -- we start running out of meat. And we're thankful and happy for the spring harvest that we get. And they also lay their eggs where the caribou have their babies. They're just as important. All the waterfowl, all the caribou, the importance of their migrations across the world and just for our planet, they're very, very important. If a mistake or some kind of big oil spill were to happen, that habitat, that part of the world will never be the same again, and that is why we always protect it and we always talk for it and fight for it.	Section 3.4.3 of the SEIS addresses potential impacts of the oil and gas leasing program to subsistence uses of migratory resources such as waterfowl.
Wolfe	Ron	-	34102	4	Caribou have flourished on the North Slope since Prudhoe Bay development occurred. Map 314 shows that caribou are not heavily in the 1002 area and, therefore, the analysis needs to reflect that fact when considering impacts. Responsible development can coexist harmoniously with the environment as evidenced by the Red Dog Mine and Prudhoe Bay. Jobs are needed for a subsistence lifestyle (boats, fuel, 4-wheelers).	Section 3.4.3 of the SEIS addresses the potential positive impacts of the oil and gas leasing program on subsistence uses, as "increased income...would likely be put to use in supporting subsistence activities through the purchase of faster and more efficient equipment and technologies."
Mantell	Jace	-	80284	1	1. The BLM should grant stronger protections for the Porcupine caribou herd which the Gwich'in Nation relies on, and the SEIS should take into account the added impacts of climate change on migration routes and habitat in addition to the impacts of the proposed oil and gas development.	Section 3.4.3, "Cumulative Impacts" addresses the potential impacts of development in combination with climate change on the Porcupine Caribou Herd.
Raynolds	Martha	-	79238	3	• BLM's conclusion that there will not be significant impacts to Gwich'in subsistence is false – development in the Arctic Refuge will diminish habitat available to the calving Porcupine Caribou Herd, reducing the number of caribou available to the Gwich'in for subsistence hunting.	The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	395	In assessing impacts to subsistence users and resources, BLM and FWS limited their analysis to just four communities -Kaktovik, Nuiqsut, Arctic Village, and Venetie.(1087) This approach is insufficient because oil and gas leasing on the Coastal Plain threatens numerous subsistence resources and users and will significantly impact human connections to the land beyond these communities. In particular, any change in caribou availability or abundance due to oil and gas activities on the Coastal Plain would impact subsistence uses for 22 Alaskan communities and seven Canadian user groups.(1088) This is particularly true for the Gwich'in of Alaska and Canada. The Gwich'in people live in fourteen villages extending across northeast Alaska, northern Yukon, and Northwest Territories. They are "Caribou People" for whom the Arctic Refuge is sacred ground.(1089) Their culture and way of life is heavily dependent on the Porcupine Caribou Herd and their communities trace the historic migratory route of the herd through the Gwich'in traditional homelands. As a result of this limited analysis, the agencies also overlook impacts to important subsistence resources that rely on the Coastal Plain and are consumed by communities outside the immediate program area.(1090) To adequately analyze the far reaching impacts an oil and gas leasing program will have on all communities that rely on the Coastal Plain and its resources, the agencies must greatly expand the communities considered for their analysis. (1087) Id. at 3-291. (1088) Id. at 3-301. (1089) Id. App. E at E-21. (1090) See Id. App. M at M-1 to M-26 (limiting subsistence harvest data to Kaktovik, Nuiqsut, Venetie, and Arctic Village).	The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects. In addition, future EISs and Section 810 analyses for individual projects may include additional communities (e.g., the 22 caribou study communities), as these analyses will have specific development projects to analyze.
Brisson	Brook	Trustees for Alaska	80131	398	The agencies' analysis still significantly mischaracterizes the potential for subsistence impacts to the Gwich'in in light of the best available science and the agencies' economic predictions. Model predicted population declines for the Porcupine Caribou Herd due to development in the Coastal Plain could have "substantial impacts on communities that rely on the Porcupine Caribou Herd."(1097) This loss will be felt in numerous subsistence communities including all Gwich'in communities.(1098) Yet while the agencies predict some communities or households may be better able to "adapt" to reduced subsistence access as a result of increased income, the agencies explain Gwich'in communities are not expected to realize such benefits.(1099) (1097) DSEIS at 3-329. (1098) Id. App. E at E-21. (1099) Id. at 3-355. With this disparity in mind, the agencies must revise their analysis to reflect the high intensity of impacts likely to result to Gwich'in communities.	The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects.
Jackson	Matt	-	80374	1	One is the finding in the SEIS that there's no significant impact on subsistence. That's just simply not true. You've heard it from people in this room. I think your scientists and subject-matter experts would find that out if they dug a little bit deeper. There will be some subsistence impacts. The surface disturbances from the activity alone would cause significant subsistence impact. But as you also heard, the emissions will cost significance of subsistence impacts, not only in the refuge, but around the state and all the way down to Southeast where I fish and hunt. There is no way around that.	The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects.
Crisman	Tara	-	80389	3	The conclusion that there will not be significant impacts to their subsistence is false. Drilling on the Coastal Plain will result in a failure to protect wildlife populations and habitat, will threaten indigenous ways of life, and does not comply with international treaties and does not adequately consider the international indigenous rights and free, prior, and informed consent for development on ancestral lands. Drilling in the Arctic Refuge is violent action towards the indigenous people in Alaska, and all new fossil fuel development is an act of violence towards all people of this earth and future generations.	The leasing program itself is unlikely to result in significant impacts on subsistence, except for Kaktovik in the cumulative case. Impacts of specific projects resulting from the leasing program will be analyzed in separate NEPA processes, including a separate Section 810 analysis for individual projects.
Rosenfeld	Robert	-	80455	2	There is no mention of how the fabric of their social structure would be severely impacted if the caribou migration didn't pass by their communities. The process and the continuation of a 39 year assault is an injustice unto itself, as the tribes must bear the financial burden to host hearings and to travel, to educate policymakers. There is no mention of the stress that that they that they experience by the mere threat of development to the caribou nursery, which they call the sacred place where life begins. The final SEIS must must analyze in-depth the social and economic risks of the Gwich'in Nation. The final SEIS must fairly analyze the risk to the caribou.	The potential subsistence, cultural, sociocultural, and spiritual impacts to the Inupiaq and Gwich'in users of the Porcupine Caribou Herd are described in Sections 3.4.2, 3.4.3, and 3.4.4.
Not Provided	Not Provided	Alaska's Congressional Delegation	80322	14	The draft SEIS also fails to point out that hunters in the NPR-A and Prudhoe Bay regularly utilize roads and other infrastructure in developed areas to successfully conduct subsistence activities such as berry picking, fishing, and hunting. That infrastructure has provided easier and cheaper access, while increasing transportation safety to traditional grounds.	The SEIS (Section 3.4.3, "Infrastructure") addresses in detail the potential benefits of roads to subsistence users, and cites the use of industrial roads by existing NPR-A residents.
Roberts	Lawrence	-	80416	1	The caribou is emblematic of our culture and tradition. We've been with this caribou Porcupine herd for as far as back as we can measure, which is probably 10,000 years or more. And so that's why we're here. And our very existence depends upon this herd. And it provides our diet. And especially our activities and stuff like that and our economy and subsistence, the fur.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections B.4.2, B.4.3, and B.4.4. Potential impacts to the abundance and availability of Porcupine Caribou Herd caribou to subsistence users are discussed in Section 3.4.3.
Erickson	Diloola	-	80391	2	The refuge is a sacred place, the place where life begins. It is the one place that holds the only secure food resource right now. Currently the Porcupine caribou herd is the only herd that is growing. It's the only stable food source our people have right now. With the decline of the salmon, the scarcity of the moose, they had to open a whole other section because that many people on the Yukon didn't fill their tags this year for moose. People are going hungry, and it's scary, and it's unprecedented.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections B.4.2, B.4.3, and B.4.4. Potential impacts to the abundance and availability of Porcupine Caribou Herd, in addition to food security, are addressed in Section 3.4.3.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Moderow	Andy	-	80454	2	There's a few examples of areas that we hope the agency continues to review the current draft SEIS does not do enough to protect the porcupine caribou herd, and it needs to be modified to fully recognize the importance and the role of the Gwich'in Nation, along with other Arctic communities, to clarify how that work should be done, and I think previous speakers have so eloquently stated why that is so critical.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections B.4.2, B.4.3, and B.4.4. Potential impacts to the Porcupine Caribou Herd are discussed in Section 3.3.4.
Young	Pam	-	80460	1	As an Alaskan resident, avian conservation specialists, and advocate for protecting the coastal plain ecosystem, I urge you to create the most protections possible for the coastal plain in the new EIS. The coastal plain is a sacred place to the Gwich'in nation. The draft SEIS fails to account for, or adequately consider the cultural harms caused to the Gwich'in people by the oil and gas leasing program. The alternatives set forth in the Draft SEIS. fail to specifically grant adequate protections to the porcupine caribou herd, the Gwich'in Nation's most important connection to their cultural survival and their most critical source for food security.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections B.4.2, B.4.3, and B.4.4. Potential impacts to the Porcupine Caribou Herd are discussed in Section 3.3.4.
Rosenfeld	Robert	-	80455	3	The SEIS does not adequately assess the imminent potential risks of the caribou, and consequently to the Gwich'in. The SEIS fails to address the multitude of environmental justice issues, nor does it integrate the profound depth of knowledge of the Gwich'in people.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections B.4.2, B.4.3, and B.4.4. Potential impacts to the Porcupine Caribou Herd are discussed in Section 3.3.4. Traditional knowledge regarding caribou is provided in Appendix D.
Not Provided	Emily	-	79183	1	The coastal plain holds profound significance for the Gwich'in Nation, representing a sacred place deeply interwoven with cultural identity. Please amend the omission of acknowledgement in the Supplemental Environmental Impact Statement (SEIS) of the cultural harm inflicted upon the Gwich'in people by the oil and gas leasing program. Regrettably, the alternatives proposed in the Draft SEIS do not provide the level of protection required for the Porcupine caribou herd, which plays an indispensable role in the cultural survival and food security of the Gwich'in Nation. I urge the Bureau of Land Management (BLM) to adopt a forward-looking perspective that considers the caribou migration route in the context of climate change and the evolving habitat in the Arctic Refuge over the coming decades. Such foresight is essential as changing migration routes and habitat alterations may intensify the impact of oil and gas activities on the Porcupine herd and thereby the health of the Gwich'in tribe.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections B.4.2, B.4.3, and B.4.4. Specifically, impacts to the Porcupine herd and Porcupine herd subsistence, including cumulative and climate change impacts, are discussed in Section 3.3.4 and 3.4.4.
Strassenburgh	John	-	80071	10	The viability of the Porcupine Caribou Herd depends on its continued undiminished use of the 1002 area for calving and preparing for the annual aggregation and migration. Oil and Gas development in the Arctic Refuge Coastal Plain would put the health and size of the herd at high and unacceptable risk. The Gwich'in of Arctic Village, Venetie, Old Crow and other places in northeast Alaska and northwest Canada depend on this herd for basic needs, like food and clothing and cultural integrity. The Porcupine Caribou Herd is integral to the Gwich'in culture and way of life. This raises human rights, food and subsistence, and cultural issues for indigenous peoples, all of which would be adversely impacted in significant ways by oil and gas development. The 2023 SEIS Alternative D is less detrimental to the Gwich'in people and to the Porcupine Caribou than previous iterations of EIS's, but, nonetheless, it remains deficient. The final SEIS needs to do a better job of addressing this problem, and doing so especially in the context of climate change.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections B.4.2, B.4.3, and B.4.4. Specifically, impacts to the Porcupine herd and Porcupine herd subsistence, including cumulative and climate change impacts, are discussed in Section 3.3.4 and 3.4.4. The SEIS also addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4.
Frank	Crystal	-	80428	1	My indigenous world view as a Gwich'in has a deep connection to our land and the caribou. Our stories, our way of life, our oral history, our language is all connected to the caribou. I want you to understand that if we lose our way of life and we lose our caribou, it would be devastating to us and our people and our future generations. I want to paint you a picture. Imagine sitting on the mountain where the cold, crisp air hits your face. The color is changing. The sun is setting. Over the ridge, the caribou is moving. There's a cow and a baby caribou just a few yards away. The baby caribou looking at you, you see them and they see you. Curiosity. There's a connection there, a deep connection that was foretold thousands and thousands of years ago in our history. We know caribou and they know us. We have a story of how one of our men became a caribou and lived among them. When we came back and he turned back into a man, he told our people how the caribou lived, what language they spoke, where they migrated, what they ate. That's why Gwich'in knows so much about caribou.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections B.4.2, B.4.3, and B.4.4. The potential cultural, sociocultural, and spiritual impacts to the Gwich'in from the oil and gas leasing program are also addressed in these sections.
Frank	Crystal	-	80428	2	Caribou is the foundation of our culture and our language and our way of life as Gwich'in people. It always brings us together through celebration and through hardship. We are connected to the caribou spiritually. The caribou feeds us through the winter. We celebrate when they come through our community. Our hunters are happy, our families are happy when they come.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections B.4.2, B.4.3, and B.4.4. The potential cultural, sociocultural, and spiritual impacts to the Gwich'in from the oil and gas leasing program are addressed in sections 3.4.2, 3.4.3, and 3.4.4

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Nikolai	Kayla	-	80439	1	The drilling in the Arctic National Wildlife Refuge is a very big concern to the Gwich'in people. If the drilling happen, caribou would not migrate to our homeland anymore. The caribou has a huge impact on the Gwich'in people. Without caribou, the Gwich'in people would not be who we are today. We survive off caribou. It is our main source of food, clothing, and every part of the caribou can be used for many things. For thousands of years the Gwich'in people of Northeast Alaska, Northwest Canada have relied on caribou for food, clothing, shelter, tools, and life itself. And today the Porcupine caribou herd remains essential to meet the nutritional, cultural, and spiritual needs of our people. My family and I go upriver every summer to pick berries and hunt for caribou and moose. We must live the subsistence lifestyle that our grandparents have taught us and teach the younger ones this lifestyle too. Amazingly, we're still able to -- we're still able to have our land. We have been fighting for our land and the caribou for many years from the drilling in Arctic National Wildlife Refuge and it makes me appreciate my land so much more. Going out to the land is therapy for me.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections B.4.2, B.4.3, and B.4.4. The potential subsistence, cultural, sociocultural, and spiritual impacts to the Gwich'in and the Porcupine Caribou Herd from the oil and gas leasing program are addressed in sections 3.4.2, 3.4.3, and 3.4.4
Stern	Charlene	-	80444	3	One thing I think that's really important for the record is that the Gwich'in are the traditional caretakers of the caribou and we have a historical baseline that's thousands of years old. We know caribou behavior. We know their patterns of migration. And there may be slight changes from year to year, but for the most part it's pretty predictable, you know. Our people know that they're going to be coming through here in the fall, and we count on that.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections B.4.2, B.4.3, and B.4.4. The potential subsistence, cultural, sociocultural, and spiritual impacts to the Gwich'in and the Porcupine Caribou Herd from the oil and gas leasing program are addressed in sections 3.4.2, 3.4.3, and 3.4.4. Traditional knowledge regarding caribou is incorporated into Appendix D.
Not Provided	Not Provided	-	11708	1	The coastal plain is a sacred place to the Gwich'in Nation . The SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program. The alternatives set forth in the Draft SEIS fail to grant adequate protections to the Porcupine caribou herd - Gwich'in Nation's most important connection to their cultural survival and their most critical source for food security. Climate science research finds that oil and gas exploration critically destroys habitat quality on which caribou depend. See Disturbances in North American boreal forest and Arctic tundra: impacts, interactions, and responses "[H]abitat ...[alters] animal behavior and reduce[s] mammalian movements globally (Finnegan et al 2018, Tucker et al 2018)." Scientists warn that we are advancing so quickly toward catastrophic systemic failure in the Arctic, that we are facing ecocide. Any contemplation of more fossil fuel extraction in the Arctic seems to be - no, in fact - IS suicidal. See World Scientists' Warning of a Climate Emergency	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections B.4.2, B.4.3, and B.4.4. The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4.
S.	Cleone	-	61487	3	The Gwich'in Nation would be subject to cultural harms on their sacred coastal plain by allowing oil/gas leasing. Porcupine caribou are not provided enough protections in the Draft SEIS so that the Gwich'in Nation would have food for hunting and that the herds would not be forced to find other habitat and migration routes.	The SEIS acknowledges and discusses the sacredness of the Refuge and the Porcupine Caribou to the Gwich'in People in Sections B.4.2, B.4.3, and B.4.4. The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4.
Wolfe	Ron	-	34102	3	Subijective emphasis is being weighted more heavily throughout the document. It is biased against development supporters. (I.e. The Draft EIS heavily considers Gwich'in input which do not reside in the 1002 Area and does not adequately reflect Kaktovik, North Slope Borough, and the In Iñupiat Community of the Arctic Slope (ICAS).? Remove this sentence: "Incremental development of oil and gas-related infrastructure throughout the program area may erode cultural connections to, and subsistence uses of these lands for the lupiat, Inuvialuit, and Gwich'in." This is a subjective statement. The research does not support this subjective opinion.	The SEIS acknowledges Kaktovik as the primary users of the Refuge but also addresses communities with cultural connections to the area or who harvest resources that migrate through the Refuge before being harvested by their community. Impacts to cultural identity and connections as a result of development infrastructure within traditional lands has been documented in numerous studies through shifting of use areas away from development over time and reported avoidance of development areas.
Alliance	Alaska	The Alliance	79123	2	- Subjective emphasis is being weighted more heavily throughout the document. It is biased against development supporters. (For example, the Draft EIS heavily considers Gwich'in input which do not reside in the 1002 Area and does not adequately reflect input from Kaktovik, North Slope Borough, and the Iñupiat Community of the Arctic Slope (ICAS). - Subjective statements with the Leasing SEIS should be removed from the analysis. For example: "Incremental development of oil and gas-related infrastructure throughout the program area may erode cultural connections to, and subsistence uses of these lands for the Iñupiat, Inuvialuit, and Gwich'in." The research does not support this subjective opinion.	The SEIS acknowledges Kaktovik as the primary users of the Refuge but also addresses communities with cultural connections to the area or who harvest resources that migrate through the Refuge before being harvested by their community. Impacts to cultural identity and connections as a result of development infrastructure within traditional lands has been documented in numerous studies through shifting of use areas away from development over time and reported avoidance of development areas.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Klein-Enright	Chere	-	79228	6	Subjective emphasis is being weighted more heavily throughout the document. It is biased against development supporters. (For example, the Draft EIS heavily considers Gwich'in input which do not reside in the 1002 Area and does not adequately reflect input from Kaktovik, North Slope Borough, and the Iñupiat Community of the Arctic Slope (ICAS). Subjective statements with the Leasing SEIS should be removed from the analysis. For example: "Incremental development of oil and gas-related infrastructure throughout the program area may erode cultural connections to, and subsistence uses of these lands for the Iñupiat, Inuvialuit, and Gwich'in." The research does not support this subjective opinion.	The SEIS acknowledges Kaktovik as the primary users of the Refuge but also addresses communities with cultural connections to the area or who harvest resources that migrate through the Refuge before being harvested by their community. Impacts to cultural identity and connections as a result of development infrastructure within traditional lands has been documented in numerous studies through shifting of use areas away from development over time and reported avoidance of development areas.
Not Provided	Not Provided	-	53625	1	The area known as the Arctic National Wildlife Refuge – The Arctic Refuge – is the homelands of the Gwich'in and Iñupiat. For thousands of years Gwich'in and Iñupiat have maintained strong relationships with the plants, animals, lands, and waters of this area. They are the traditional stewards of this land and we should hold their wisdom of it above all others. The harvesting of the Porcupine Caribou herd is critical for the well-being and food security of the Indigenous peoples and local communities of the sacred Coastal Plain. In addition, the Porcupine Caribou herd provides food for many families throughout Alaska via traditional trade practices. The need for this trade is becoming even more evident as other vital food sources across the state are being depleted. The SEIS conclusion that there will not be significant impacts to Gwich'in subsistence is false: Under section 810 of the Alaska National Interest Lands Conservation Act (ANILCA), BLM must evaluate the impacts of the leasing program on subsistence uses and seek alternatives to the proposed action that would reduce or eliminate impacts.	The SEIS addresses potential impacts of the oil and gas leasing program on Inupiaq and Gwich'in subsistence and sociocultural systems, including potential impacts to the Porcupine herd and indirect impacts related to disruption of sharing networks.
Peter	Enei Begaye	-	80387	2	And the Supplemental Environmental Impact Statement inadequately addresses the subsistence impact of oil and gas development. In addition, it does not take into account the international obligations, treaty obligations regarding the caribou, and it inadequately articulates how those obligations will be met.	The SEIS addresses potential impacts to subsistence in Section 3.4.3. Treaties and coordination with Canada are considered throughout the SEIS and would be carried into site-specific NEPA as applicable.
Blake	Annie	-	80078	2	As Indigenous people, the Vuntut Gwitchin have a right to access our culture through our traditional foods. If BLM really believes in serving people and ensuring the best for people today, and the people that are yet to come, children not yet born, that means protecting the natural resources we have, especially because we're in a climate crisis, and seeing rapid changes in our environment. We're seeing enough hard changes happening in our environment with climate change, and the impacts it is already having on the migratory route of the caribou. Why is it okay that they destroy my people's way of life, for the sole purpose of making money? It is our right and our duty to the future to ensure that the generations yet to come have the same rights and the same access to our culture and our ways as I have had or as my parents have had or as my grandparents have had. At the end of the day, the decisions made about the Arctic National Wildlife Refuge and the Porcupine Caribou Herd impacts all parts of who we are as a people. Harming the Refuge or the herd means they are not only going to destroy that for us today, they will also impact future generations, and that's not okay.	The SEIS addresses potential transboundary impacts to the Vuntut Gwich'in subsistence uses, in addition to cumulative impacts of climate change, in Section 3.4.3.
Netro	Lorraine	-	80086	1	The Gwich'in people rely on our land and our water for our food, and climate change is really having an impact on that. This fall, thank God, our hunters were able to harvest caribou because the caribou returned to Crow Mountain, but in recent years there were times we never saw caribou, no matter how far the hunters traveled, and they never bought any caribou back-they couldn't harvest any caribou to feed their families. It's not only food, though; the hunters are teaching the young people about our way of life, because they're taking their sons and their grandsons out on the land to teach them teachings that were passed down from generation to generation. Disrupting the caribou not only disrupts our way of life and our food security, but impacts the responsibility of teaching our children and our grandchildren about taking care of the land, and taking care of the animals, of being land guardians, and being protectors of our lands, and animals. There's a lot more to this than Western people know or understand, and that's why protecting the caribou is so important. We have to make sure our voices are on the forefront of this consultation process, so the decision makers can hopefully understand the damage oil and gas development in our sacred lands would have on the caribou and on us, because we're already facing all kinds of challenges with climate change.	The SEIS addresses potential transboundary impacts, in addition to cumulative impacts of climate change and development on caribou, in Section 3.4.3.
Hamilton	Bruce	-	45518	1	First, your study ignores the culture-ending impacts on the Gwitch'in people who are dependent on the health and survival of the Porcupine Caribou Herd, which has its calving grounds in the Arctic Refuge coastal plain. That coastal plain is the Refuge's biological heart. I have stayed in Arctic Village and met with Gwitch'in elders, tribal leaders and young people. To only study the impacts on the Kaktovik community misses the point entirely. The views of those in Kaktovik are to be considered, of course, but the major impact is on the caribou-dependent native populations in Alaska and Canada. You are messing with centuries of co-evolution of the Native people and the caribou. Any leasing that takes place needs to be far away from the coastal plain calving and migration corridors so that the herds are not disturbed. It is folly to think that an oil field and caribou calving and migration can co-exist.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People (both Alaskan and Canadian) in Sections 3.4.2, 3.4.3, 3.4.4
Not Provided	Not Provided	-	44880	1	Moreover, the draft SEIS does not account for the cultural harm and the devastation to food security that is being inflicted upon the Gwich'in Nation, who have long lived on the coastal plain. The Porcupine caribou herd, integral to the Gwich'in way of life, are not granted strong enough protections in the alternatives set forth in the draft SEIS - the oil and gas drilling will have major negative impacts on the caribou's habitat and migration routes.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.

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Not Provided	Not Provided	-	45075	1	Strong protections are needed for the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security. These could not exist if oil and gas drilling is permitted. Also, oil and gas activity will likely impact changing migration routes and habitat for the Porcupine caribou which would be detrimental to them and likely to the Gwich'in Nation.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Iandiorio	David	-	42655	3	It is imperative that our government develops an alternative that maximally protects the coastal plain from future oil leasing. The area is vital calving grounds for the Porcupine caribou herd, a sacred place for the Gwich'in people who have relied on the herd for millennia.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. While all alternatives include protections for resources, the agencies have developed Alternative D2, a sub-alternative of D, based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
Not Provided	Not Provided	-	44970	4	The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. Alternative D2, a sub-alternative of D, has been developed based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
Van Atta	Karen	-	44964	4	The Gwich'in Nation have a long indigenous cultural tradition and consider the coastal plain as sacred. That the Draft SEIS fails to adequately address the signifigance of these lands to the Gwich'in people is a glaring ommission. The Draft SEIS includes no alternative that adequately protect the Porcupine caribou herd. This caribou herd and their current migratory habits are of critical importance to the Gwich'in Nation relies for cultural survival and food security.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. While all alternatives include protections for resources, the agencies have developed Alternative D2, a sub-alternative of D, based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
Heuser	William	-	46038	1	I am writing today in response to your draft Supplemental Environmental Impact Statement (SEIS) for the refuge leasing program. I urge you to fully consider the impacts that any future oil and gas development would have on the Gwich'in People and the wildlife that make their home in the refuge. While the draft SEIS has made some improvements in protecting the refuge, it is not enough. Further protections must be put in place to safeguard this sacred place. For instance, the SEIS does not acknowledge the cultural harms that would be inflicted on the Gwich'in People if the oil and gas leasing program goes forward. It also does not grant strong enough protections for the porcupine caribou herd that the Gwich'in Nation relies upon for cultural survival and food security.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4.
Heuser	William	-	46038	2	I am writing today in response to your draft Supplemental Environmental Impact Statement (SEIS) for the refuge leasing program. I urge you to fully consider the impacts that any future oil and gas development would have on the Gwich'in People and the wildlife that make their home in the refuge. While the draft SEIS has made some improvements in protecting the refuge, it is not enough. Further protections must be put in place to safeguard this sacred place. For instance, the SEIS does not acknowledge the cultural harms that would be inflicted on the Gwich'in People if the oil and gas leasing program goes forward. It also does not grant strong enough protections for the porcupine caribou herd that the Gwich'in Nation relies upon for cultural survival and food security.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4.
Not Provided	Not Provided	-	59568	1	Expand the analysis of impacts on subsistence to include the Gwich'in people. The Gwich'in are dependent on the Porcupine Caribou Herd, a dependence that is well documented and foundational to their ability to exist as they are. To only study the impacts on the City of Kaktovik is short sighted and ignores the significant impacts to the Gwich'in.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4.
Terwilliger	Laurie	-	73980	1	Leasing the coastal plain will negatively affect the ability of the Gwich'in people to use this area for subsistence and cultural uses. Leasing of this area will lead to oil and gas development which is incompatible with the purposes of conserving animals and plants in their natural diversity, ensuring subsistence hunting and gathering activities and protecting water quality and quantity.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4.
Rojas	Melissa	Sierra Club	80123	1	Expand the analysis of impacts on subsistence to include the Gwich'in people. The Gwich'in are dependent on the Porcupine Caribou Herd, a dependence that is well documented and foundational to their ability to exist as they are. To only study the impacts on the City of Kaktovik is short sighted and ignores the significant impacts to the Gwich'in.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4.

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Not Provided	Not Provided	-	19723	3	The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, which the Gwich'in Nation relies on for cultural survival and food security. The coastal plain is a sacred place to the Gwich'in Nation, and the SEIS does not acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program. It must also adopt measures to protect those values of the Arctic Refuge, both now and into the future. We urge the Biden administration to fully consider public comments and adopt strong measures to prevent impacts on subsistence for local communities, fragmenting of the calving grounds of the Porcupine caribou herd, and adverse effects on threatened polar bears from oil and gas activities.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. In response to public comment, the BLM/USFWS have developed Alternative D2, a subset of Alternative D, to provide additional protections to key resources, including caribou.
Sullivan	Emily	-	80384	1	I also want to express gratitude for the cancellation of the previous leases that were held on the Coastal Plain. However, I do have to express serious concerns with the current findings in the SEIS, which I feel is not set up to sufficiently protect the Coastal Plain and thus withhold the purposes of the Arctic Refuge as they were originally established. First and foremost, the SEIS does not acknowledge the cultural harms that leasing and subsequent extraction on the Coastal Plain will cause to the Gwich'in Nation, or the Inupiaq land protectors who have spoken out for protections in the region. The threats to subsistence aren't given due consideration in the SEIS. We know that oil and gas activity on the Coastal Plain would interfere with migration, health, and survival of the Porcupine Caribou Herd. The communities in and around the Arctic Refuge have stewarded this land for a millenniums we've just heard, and deserve their rights to free, prior, and formal consent for any decision that affects their lands, waters, and the wildlife that they rely on. There's evidence that the Porcupine Caribou Herd's migration route will change in the coming decades due to climate change. So we ask that the BLM consider how oil and gas activity on the Coastal Plain will impact the health of the herd, not only in the near future, but in coming generations.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. Impacts to Porcupine Caribou Herd, including cumulative effects of climate change in combination with development, are discussed in Section 3.3.4 and 3.4.3.
greer	jill	-	62177	3	The strict protection of the Porcupine caribou herd is also inseparable from the rights of the Gwich'in to their ability to feed themselves and steward their ancestral homeland. The current draft falls far short of the necessary provisions to accomplish true protection for both the living animals, and the humans, whose mutual interdependence has existed for at least 4,000 years.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. Specifically, impacts to the Porcupine herd and Porcupine herd subsistence are discussed in Section 3.3.4 and 3.4.4.
Scranton	Chris	-	65433	1	Caribou is the life blood of the Gwitchin and has been so for thousands of years. It is not only the major food source but also the basis for their indigenous culture. Since the 1002 coastal plain area of ANWR is the calving zone for the Porcupine Caribou Herd development can not occur without a negative impact on the Gwitchin Way of life. The SEIS for the oil and gas leasing only includes Kaktovik in terms of impacts on Indigenous people. The SEIS needs to consider the people of Arctic Village and Venetie as they would be negatively impacted by oil and gas leasing in ANWR. This omission is a huge oversight.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. Specifically, impacts to the Porcupine herd and Porcupine herd subsistence are discussed in Section 3.3.4 and 3.4.4.
Lindberg	Kristy	-	71021	2	The Draft SEIS doesn't address properly the Gwich'in Nation and their relationship with the coastal plain and the caribou. This is a sacred place to the Gwich'in Nation, and they rely on the Porcupine Caribou herd for the survival of their culture and for food security.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. Specifically, impacts to the Porcupine herd and Porcupine herd subsistence are discussed in Section 3.3.4 and 3.4.4.
Bunger	Adam	-	72962	4	These issues present synergistic negative effects on the landscape, and the species that exist upon it. The porcupine caribou herd has traversed the same migration path through the ANWR for 27,000 years and has been connected to the indigenous Gwichin people for the last 10,000. Both that population of caribou and the cultural heritage of the Gwichin are in peril from oil and gas development in the Refuge.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. Specifically, impacts to the Porcupine herd and Porcupine herd subsistence are discussed in Section 3.3.4 and 3.4.4.
Carmichael	Cassandra	National Religious Partnership for the Environment	79250	2	Protecting the Arctic Refuge from oil and gas exploration also upholds Indigenous rights and preserves religious liberty for Tribes and Indigenous communities that view the Arctic Refuge as sacred. The Gwich'in and the Inupiat depend on the Arctic to sustain their communities and preserve their cultures. The Gwich'in rely on the Porcupine Caribou, which are tied to the Arctic Refuge, for their food, culture and spiritual wellbeing. This sacred land must be protected in order for both the Gwich'in and Porcupine Caribou to survive.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. Specifically, impacts to the Porcupine herd and Porcupine herd subsistence are discussed in Section 3.3.4 and 3.4.4.
Lish	Christopher	-	79004	3	- Expand the analysis of impacts on subsistence to include the Gwich'in people. The coastal plain is a sacred place to the Gwich'in Nation, and the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program. The Gwich'in are dependent on the Porcupine Caribou Herd, a dependence that is well documented and foundational to their ability to exist as they are. However, the alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd. The BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd. To only study the impacts on the City of Kaktovik is short sighted and ignores the significant impacts to the Gwich'in.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. Specifically, impacts to the Porcupine herd and Porcupine herd subsistence, including cumulative and climate change impacts, are discussed in Section 3.3.4 and 3.4.4.

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Watson	Erica	-	79527	1	This draft, while an absolute improvement over previous efforts, does not sufficiently address the cultural harms that oil infrastructure would cause to Gwich'in people. BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Changing migration routes and habitat will likely increase the impacts of any oil and gas activity on the Porcupine herd. Any consideration of fossil fuel development must prioritize direct and indirect climate impacts on wildlife, subsistence values, recreation, and health.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. Specifically, impacts to the Porcupine herd and Porcupine herd subsistence, including cumulative and climate change impacts, are discussed in Section 3.3.4 and 3.4.4.
S	M	-	79881	3	• The coastal plain is a sacred place to the Gwich'in Nation, and the Draft SEIS fails to acknowledge the cultural harms caused to the Gwich'in people by the oil and gas leasing program. Relatedly, the alternatives set forth in the Draft SEIS do not grant strong enough protections of the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security. Caribou migration routes should be looked at through a lens of climate change, with shifting of routes and changing habitat in the coming decades highly probable. Activity from oil and gas development will undoubtedly exacerbate the shift.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. Specifically, impacts to the Porcupine herd and Porcupine herd subsistence, including cumulative and climate change impacts, are discussed in Section 3.3.4 and 3.4.4.
Brooks	Mary Jo	National Wildlife Federation	80118	1	I am writing today in response to your draft Supplemental Environmental Impact Statement (SEIS) for the refuge leasing program. I urge you to fully consider the impacts that any future oil and gas development would have on the Gwich'in People and the wildlife that make their home in the refuge. While the draft SEIS has made some improvements in protecting the refuge, it is not enough. Further protections must be put in place to safeguard this sacred place. For instance, the SEIS does not acknowledge the cultural harms that would be inflicted on the Gwich'in People if the oil and gas leasing program goes forward. It also does not grant strong enough protections for the porcupine caribou herd that the Gwich'in Nation relies upon for cultural survival and food security. It is imperative that the SEIS evaluate all aspects of potential oil and gas impacts to lands, water, wildlife, communities, and climate in this sacred area - both now and into the future.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. Specifically, impacts to the Porcupine herd and Porcupine herd subsistence, including cumulative and climate change impacts, are discussed in Section 3.3.4 and 3.4.4.
G	M	-	61837	1	Just as importantly, this land is sacred to the Gwich'in Nation and no protections are in place, or even an acknowledgement of this most important issue. Current alternatives in the draft SEIS do not adequately protect the Porcupine caribou herds, so integral to the Gwich'in culture.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4. While all alternatives include protections for resources, the agencies have developed Alternative D2, a sub-alternative of D, based on public input requesting protection for key resources in the Coastal Plain including, but not limited to, polar bears, migratory birds, caribou, and springs/aufeis.
Cohen	Emily	-	19678	2	I am highly opposed to any current or future sales, proposal of sales, or extraction of oil and gas in the Arctic National Wildlife Refuge. There has not been adequate study of the environmental and cultural impacts of any proposed development. Gwich'in and Iñupiaq communities are against this invasive and exploitative proposal. They have expressed their opposition to this sale of their ancestral homelands clearly, and yet there are still greed-driven bids to extract non-renewable energy resources in a manner that would damage and permanently alter some of the last pristine lands we have in this country. As an Alaskan, it is my belief that the Bureau of Land Management should honor that ANWR is a Refuge and leave it untouched. Please do not sell off our only planet, push us further into climate devastation, and further colonize and harm Alaska Native Peoples for fleeting enjoyment of oil and gas.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Inupiaq and Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Corcoran	JC	-	22531	3	The coastal plain holds immense cultural significance for the Gwich'in Nation, and it's disappointing that the Draft SEIS fails to acknowledge the cultural harm caused by the oil and gas leasing program to the Gwich'in people. The alternatives presented in the Draft SEIS do not offer sufficiently robust protections for the Porcupine caribou herd, which is vital for the cultural survival and food security of the Gwich'in Nation. The Bureau of Land Management (BLM) should assess the caribou migration route through the lens of climate change, considering how caribou habitat in the Arctic Refuge will evolve in the coming decades. Oil and gas activities are likely to impact changing migration routes and habitat for the Porcupine herd.	The SEIS addresses the potential cultural, social, subsistence, and spiritual impacts to the Inupiaq and Gwich'in People in Sections 3.4.2, 3.4.3, 3.4.4
Pitka	Rhonda	-	80398	2	But the people of the region and the people of the state won't be okay without caribou. I say this from a place of pretty deep hurt, because I also live on the Yukon River and we have lived with four years of salmon disasters. We've had no fishing, and the effect that that has on your people is wrenching and horrific, and if there is anything that the government can do to mitigate that, they probably should.	The SEIS addresses the potential impacts of the oil and gas leasing program on caribou subsistence uses. Reviewed cumulative section to ensure the cumulative impacts on communities with other vulnerable subsistence populations are adequately addressed.

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Hayward	Michelle	-	39606	4	Similarly, the Porcupine caribou herd is not adequately protected by the Draft SEIS, despite their importance to the Gwich'in Nation, culturally, and as a primary food source. The impacts of climate change on their survival must also be taken into consideration, alongside the impacts of any development, and how both will alter their behavior and migration routes.	The SEIS addresses the potential impacts to the Porcupine caribou herd and the importance of the Porcupine herd to the Gwich'in people. Cumulative impacts of oil and gas development and climate change on caribou abundance and behavior are discussed in Section 3.3.4 (Cumulative Impacts).
Cotter	Justina	-	41121	4	The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security. BLM should look at the caribou migration route from the perspective of climate change, using that lens to consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will further impact migration routes and habitat for the herd.	The SEIS addresses the potential impacts to the Porcupine caribou herd and the importance of the Porcupine herd to the Gwich'in people. Cumulative impacts of oil and gas development and climate change on caribou abundance and behavior are discussed in Section 3.3.4 (Cumulative Impacts).
Gilbert	Renee	-	80372	1	A lot of people depend on the Caribou Porcupine Herd in order to fill their freezers for a winter. They also send caribou out into the other communities for the elders. So not only would the lease sale be messing up everyone's substance way of life, but it will affect a lot of people as well. Everyone depends on it. They depend on the fur, and they don't put anything to waste. So it will just be a big devastation for just their subsistence way of life and also their cultural values as well.	The SEIS addresses the potential indirect effects of a decline in caribou abundance or availability on sharing networks.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	162	Finally, the BLM must fully consider and integrate the impacts of climate change on human health into the HIA. Specifically, the agency must consider how climate change affects the social and environmental determinants of health within the region for potentially affected communities.(297) This analysis should include, but not be limited to: mental health, air quality, water quality and quantity, impacts to subsistence resources and practices, and food security. Ongoing and reasonably foreseeable climate change impacts and stressors must be integrated into the BLM/USFWS's baseline and across all alternatives. (297) See Alaska Epidemiology, Assessment of the Potential Health Impacts of Climate Change in Alaska (Jan. 8, 2016), http://www.epi.alaska.gov/bulletins/docs/rr2018_01.pdf .	The SEIS describes current impacts of climate change on subsistence in Section 3.4.3, "Climate Change", and under "Cumulative Impacts."
Heslep	Alison	-	80164	10	The GNWT acknowledges the BLM's efforts to explore alternatives beyond those presented in the 2019 EIS to reduce the identified potential adverse impacts of the Program on shared resources between our two countries. However, the GNWT has concerns with the limited consideration of the Program's potential adverse impacts on the PCH and Canadian Indigenous subsistence harvesters. As highlighted on page no. 3-331 of the draft SEIS, "Canadian communities harvest most of the Porcupine Caribou Herd and could therefore experience a greater proportion of impacts should there be a large-scale decline in Porcupine Caribou Herd abundance. Such a scenario would cause a severe disruption in social ties and cohesion for Alaskan and Canadian study communities. In addition, reductions in subsistence harvests could increase consumption of store-bought foods, having negative impacts on nutrition and health for the study communities (Section 3.4.11). Because of the unique role the Arctic Refuge plays in Gwich'in cultural identity and spiritual beliefs, any development within the program area, even in the absence of impacts on caribou availability, would likely have adverse and long-term cultural and spiritual impacts on the Gwich'in."	The SEIS does acknowledge the potential for impacts resulting from a large-scale decline in the Porcupine Caribou Herd. However, the BLM concludes that such a large-scale decline in Porcupine Caribou Herd numbers is unlikely to occur under the action alternatives as a result of the leasing program. Impacts of individual development projects on caribou abundance and availability will be addressed in subsequent NEPA processes.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	9	Providing intergenerational opportunities for continued subsistence uses of all such resources is a central purpose of the Arctic Refuge.(38) All Gwich'in villages, including those in Canada, have geographic and cultural ties to the Coastal Plain and its subsistence resources. Any oil and gas leasing and activities on the Coastal Plain will impact the Porcupine Caribou Herd and have broad geographic impacts to the Gwich'in people that has yet to be fully analyzed. (38)ANILCA § 303(2)(B). In assessing impacts to subsistence users and resources, BLM and FWS limited their analysis to just four communities - Kaktovik, Nuiqsut, Arctic Village, and Venetie.(39) This approach is insufficient because oil and gas leasing on the Coastal Plain threatens numerous subsistence resources and will significantly impact human connections to the land beyond these communities. In particular, any change in caribou availability or abundance due to oil and gas activities on the Coastal Plain would impact the Gwich'in of Alaska and Canada. The Gwich'in live in fourteen villages extending across northeast Alaska, northern Yukon, and Northwest Territories. We are "Caribou People" for whom the Arctic Refuge is sacred ground. Our culture and way of life is heavily dependent on the Porcupine Caribou Herd and our communities trace the historic migratory route of the herd through the Gwich'in traditional homelands. As a result of the limited analysis in the draft SEIS, the agencies also overlook impacts to important subsistence resources that rely on the Coastal Plain and are consumed by communities outside the immediate program area.(40) To adequately analyze the far reaching impacts an oil and gas leasing program will have on our communities, the agencies must greatly expand the communities considered for their analysis to include all Gwich'in communities. This must include the Gwich'in communities in Canada to comply with the agencies' duty to consider transboundary impacts. (39) DSEIS at 3-291. (40) See Id. App. M at M-1 to M-26 (limiting subsistence harvest data to Kaktovik, Nuiqsut, Venetie, and Arctic Village).	The SEIS does not limit the analysis of impacts to the four subsistence study communities listed, but also addresses potential indirect impacts to 22 caribou study communities in addition to transboundary impacts to Canadian groups (including the Gwich'in). The study communities include all 14 Gwich'in communities. Appendix N provides caribou harvest data for these communities in Section N.5, Tables N-20 and N-21.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	161	Examination of how development would impact relationships, including sociocultural and socioeconomic systems relationships to mental health is also necessary. The act of procuring and providing traditional subsistence resources has positive psychological health benefits at the individual and community level. How an oil development program may disrupt traditional practices, cultural identity, physical and mental health should be analyzed.(295) Moreover, the anxiety and stress of development should also be considered. (295) See: N.K. McGrath-Hanna et al., Diet and Mental Health in the Arctic: Is Diet an Important Risk Factor for Mental Health in Circumpolar Peoples? - Review, 63:3 INTERNATIONAL J. CIRCUMPOLAR HEALTH 228 (2003). Of particular importance to the Tribes is the inclusion in the HIA of a risk assessment for subsistence practices impacted by development. The disturbances of oil development are forcing tribal hunters to travel further from their community to access caribou and other subsistence resources.(296) This increased travel increases the risk of harm and injury because hunters must travel longer distances and have an increased exposure to harsh and often dangerous conditions. (296) See Final Supplemental Environmental Impact Statement for the Greater Mooses Tooth One Development Project, (2014).	The SEIS Section 3.4.3 addresses the potential social and cultural impacts of subsistence disruptions (General Development and Culture), and also addresses the potential increased safety risks associated with traveling farther for subsistence (Cumulative Impacts).
Brisson	Brook	Trustees for Alaska	80131	399	Overall, the agencies' impact analysis must be revised to more accurately describe likely impacts and account for the limitations of NSO, CSUs and TLs. The draft SEIS largely refers to NSO, CSUs and TLs to describe impacts under each alternative and to broadly assert that such measures reduce impacts to subsistence. But, as explained in greater detail above, this premise is questionable. First, the NSO provisions do not necessarily prevent impacts because of the potential for waivers and exceptions. In addition, seismic exploration and exploratory drilling may still be allowed under the NSO provision and it remains unclear whether the ROW provision would mandate access in NSO areas. Reliance on CSUs is similarly problematic as these provisions do not prevent all infrastructure and activities.(1100) TLs also have limited effectiveness in reducing subsistence impacts because they only limit when activities occur and do not limit the overall level of development under alternatives or prevent activities. With these limitations in mind, the final SEIS must actually describe the impacts likely to occur under each action alternative and should not rely on NSO, CSUs and TLs to protect subsistence resources. (1100) See, e.g., id. at 2-16 (not allowing CPFs but allowing well pads, roads, airstrips, and pipelines in CSU areas).	The SEIS subsistence analysis describes the full range of impacts that could result from the oil and gas leasing program and acknowledges the limitation of TLs and ROPs to fully eliminate impacts as follows: "While mitigation measures can help reduce impacts on subsistence users, they cannot eliminate them. In some cases, well-intended measures meant to mitigate impacts may create new, unforeseen impacts. For example, the Alpine development is roadless in order to reduce its footprint and impacts on hunters and wildlife; however, lack of year-round road access necessitated high levels of plane and helicopter traffic, which became a primary source of impacts on caribou hunters. Mitigation measures may be less effective if not adequately enforced, communicated to local residents, or developed in consultation with local subsistence users."
Brisson	Brook	Trustees for Alaska	80131	396	For several resources that were included within the agencies' scope of analysis, the draft SEIS provides incomplete analysis. For example, Dall sheep are an important subsistence resource for the Iñupiat people and the community of Kaktovik's use of this resource could be impacted by oil and gas leasing on the Coastal Plain.(1091) Any risk of additional impacts to subsistence use of Dall sheep is of significant concern because the species numbers have declined and there may be hunting limitations put in place.(1092) Yet, the alternatives analysis simply indicates that Kaktovik's use of Dall sheep could be impacted under all alternatives(1093) and that development under alternative B "may" impact areas "heavily used" by Kaktivok residents for Dall sheep hunting.(1094) This is insufficient analysis to understand how use of this important subsistence resource will be impacted by an oil and gas leasing program. Additional analysis explaining the extent of impacts to Dall sheep and to subsistence uses of this species under each alternative should be provided in the final SEIS. (1091) Id. at 3-294 (noting Dall Sheep are a primary subsistence species for Kaktovik residents); id. at 3-293 (recognizing Kaktovik's subsistence use area for Dall Sheep overlaps with the program area). (1092) See, e.g., U.S. Department of the Interior, Federal Subsistence Management Program, Changes in Federal Sheep Hunting Regulations in Units 24A and 26B (July 29, 2022), available at: https://www.doi.gov/subsistence/news/hunting/changes-federal-sheep-hunting-regulations-units-24a-and-26b . (1093) Id. at 3-313. (1094) Id. at 3-320.	The SEIS subsistence analysis notes the importance of Dall sheep to the community of Kaktovik. Subsistence activities for Dall sheep occur a substantial distance inland from the community of Kaktovik and direct impacts to Dall sheep hunting are unlikely. The EIS states that if infrastructure extends into areas of low to medium potential for oil and gas development, then access to highly used Dall sheep areas could be affected. This would depend on the location and nature of development activities. Primary impacts on Dall sheep harvest would be associated with access; oil and gas leasing in the program area is not expected to affect the availability or abundance of Dall sheep (see Section 3.3.4, Terrestrial Mammals). Reviewed section to ensure that the importance of Dall sheep to Kaktovik is adequately addressed.
Brisson	Brook	Trustees for Alaska	80131	397	The draft SEIS also improperly limits the scope of the subsistence analysis to post-lease activities.(1095) But, as addressed in prior comments, preleasing activities will cause direct harm to the Gwich'in people and other subsistence users by damaging the Coastal Plain.(1096) In the final SEIS the agencies must consider the full range of potential impacts to subsistence users and resources that could occur from all stages of the oil and gas program. (1095) Id. at 3-351 to 3-352. (1096) 2019 DEIS Comment Letter at 307-08.	The SEIS subsistence section addresses potential impacts of seismic activities. Reviewed Section 3.4.3 and added additional discussion of seismic impacts as appropriate.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	404	The agencies must also provide more detailed analysis of how sharing will be impacted by the leasing program. Existing sharing networks distribute food widely, where communities are able to receive resources they are otherwise unable to obtain. Despite the importance of such networks,(1119) the draft SEIS merely mentions that reduced harvests could disrupt sharing networks(1120) and that the loss of such social connections could "increase vulnerability in communities."(1121) These statements are perfunctory and fail to identify the communities most likely to be impacted. This is a significant oversight given inner-village dependency across the region and the potential for impacts to North Slope Borough and Interior trade routes. Such impacts could lead to food insecurity across the entire North Slope and Interior Alaska and into Canada. In the final SEIS, the agencies should consider the sharing practices in specific communities, address the communities most likely to be negatively impacted by reduced sharing, and further analyze the extent of food insecurity likely to result under each action alternative. (1119) Id. at 3-302 to 3-303. (1120) Id. at 3-312. (1121) Id. at 3-318.	The SEIS, Section B.4.3 provides detailed discussion of sharing networks for individual study communities (see Kaktovik and Venetie, Overview of Subsistence Use), in addition to sharing data for the 22 caribou study communities and under Transboundary Impacts. Further discussion of impacts on sharing networks are provided in the Section, "General Development and Culture." Impacts to sharing networks are also discussed in Section 3.4.4 (Sociocultural Systems).
Hubbard	Olivia	University of Colorado Boulder	80088	4	Gwich'in, especially the communities of Arctic Village and Venetie, are at risk of economic downfall due to their geographic area not being under the compensation of ANCSA corporations. If the Coastal Plain Oil and Gas Leasing Program were developed, Gwich'in communities would have less access to caribou, disrupting their economic and cultural way of life. The Arctic Refuge land holds considerable significance to the Gwich'in people and their land is in danger of being taken and destroyed from them without consideration of traditional use. The BLM should take into account the significance the PCH has on the Gwich'in people whether they are within the project area or not, due to the lasting effects of PCH populations decreasing. The BLM should place the North Slope under the NRHP due to the major social, cultural, and economic stress the Indigenous tribes of the Arctic Refuge would face due to the lack of preservation of the land.	The SEIS, Section 3.4.3, addresses potential transboundary impacts to the Gwich'in resulting from impacts to caribou and acknowledges the lack of economic benefits to Canadian groups from oil and gas development in the Refuge. The importance of the Porcupine herd to the Gwich'in people is discussed in depth.
McDavid	Brooke	Eastern Interior Subsistence Regional Advisory Council	80255	1	The Council held a public meeting on October 4-5, 2023, in Arctic Village. Among the items discussed was the Coastal Plain SEIS. The Council is concerned about the negative impacts that drilling for oil on the coastal plain may have to caribou migration, subsistence practices, the environment, and residents of nearby communities. Previous studies, such as Fullman et al. 2021(1), have shown that the presence of roads and other permanent infrastructure can affect caribou movements and subsistence hunting. Changes in herd migration or use of the coastal plain as calving grounds due to development and drilling activities could impact the Porcupine caribou herd population and abilities of regional residents to meet their subsistence needs. These caribou are a vital subsistence resource to residents of Northeast Alaska and neighboring Canadian territories. Climate change is already impacting the Arctic landscape and its residents. Development of permanent infrastructure and the potential for oil spills and leaks will add further threats to an already fragile and changing ecosystem. 1 Fullman, T. J., Wilson, R. R., Joly, K., Gustine, D. D., Leonard, P., and Loya, W. M. 2021. Mapping potential effects of proposed roads on migratory connectivity for a highly mobile herbivore using circuit theory. Ecological Applications 31(1):e02207. 10.1002/eap.2207	The SEIS, Section 3.4.3, addresses the potential impacts of roads and other infrastructure on the migration and distribution of Porcupine Caribou Herd, and resulting impacts to subsistence. Section 3.4.3, "Cumulative Impacts" addresses the potential impacts of development in combination with climate change on the Porcupine Caribou Herd.
Peter	Evon	-	80442	2	In the freezers next to my house all I have is caribou, moose, what we call black ducks, pintails, grayling, lush, all just Native food in there. There's no beef, no chicken, no pork in my freezers, and they're full. And that's the way our people live. You heard our other people say how much of our diet is our Native food. It's so much so. Also berries from the land, other plants that we harvest. That's what fills our freezers. It fills our spirit, our body, it helps us to continue to be who we are as dinjii zhuh. And that's what we're fighting to continue. The harvest that happens here in Vashraii K'oo, in Venetie, from our lands, from these caribou, from the ducks, the geese that come through here, they don't only provide for all of our families here. Our hunters here, we provide through trade and barter to our families in Venetie [Gwich'in spoken] from all over in this area to the villages. We have relatives that are down in [Gwich'in spoken], in the city. Their freezers are also full of our Native food because they depend on that for their well-being just like we do. So this potential impacts and effect to all these species of animals won't only affect this village and our people here that you're hearing from, it will affect our whole nation and all of our relatives and relations that we provide for as hunters in our village and community members.	The SEIS, Section B.4.3, describes subsistence harvesting and sharing networks for potentially affected communities, as well as the potential impacts of the oil and gas leasing program on subsistence harvesting and sharing in section 3.4.3
Demientieff	Bernadette	Gwich'in Steering Committee	80355	12	The agencies also fail to accurately analyze and describe subsistence impacts due to climate change. For example, the agencies note climate change "could influence the rate or degree" of cumulative impacts to subsistence resources.(44) Indicating that climate change "can" affect resource availability and "could" impact subsistence resources in the cumulative case is not analysis. This section is also misleading. The statement that subsistence hunters "may" be required to travel farther suggests climate change is an impact that may occur only in the future.(45) But, as the agencies acknowledge and as we are experiencing, climate change has been impacting subsistence resources already in significant ways.(46) The agencies must revise their cumulative analysis of subsistence impacts to reflect the fact that climate change impacts are already occurring and that subsistence users are currently grappling with the effects. (44) DSEIS at 3-327. (45) DSEIS at 3-327. (46) DSEIS at 3-330 (explaining climate change has been linked to caribou population declines in "recent decades").	The subsistence analysis of climate change effects goes beyond what is described by the commenter. A discussion of how climate change has already affected (and is currently affecting) subsistence uses is provided in Section B.4.3, "Affected Environment," "Climate Change." The cumulative analysis acknowledges and summarizes current effects of climate change on subsistence, while noting how development may further contribute to these effects. Later in the subsistence cumulative analysis, the section describes in greater detail how climate change and development activities can interact to increase the intensity and extent of impacts to subsistence. Reviewed language regarding hunters traveling farther to ensure that it is clear these impacts are already occurring.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	411	The draft SEIS's cumulative analysis also fails to include all relevant RFFAs. Adequately analyzing cumulative impacts to subsistence requires consideration of all projects likely to impact the Porcupine Caribou Herd and Central Arctic Herds throughout their ranges. But the agencies do not address RFFAs beyond the program area.(1139) The agencies should also include more analysis on the impacts to waterfowl, which are an important subsistence resources for communities in both Alaska and Canada. We also note that the agencies have not included analysis of the Point Thomson and Liberty developments in their analysis as addressed in our prior comments.(1140) The cumulative analysis also fails to address the potential risk of contamination from oil spills. This oversight is significant as the agencies recognize the potential for oil spills under all scenarios.(1141) (1139) Id. at 3-328 (failing to address RFFAs south of the Brooks Range such as the Ambler Road or projects in Canada). (1140) 2019 DEIS Comment Letter at 314. (1141) DSEIS at 3-328.	The subsistence cumulative analysis addresses potential impacts to waterfowl and the potential impacts of oil spills. The cumulative analysis has been reviewed to ensure these topics are adequately addressed with cross-referencing to other resource sections.
Allen	Mark	Government of Canada	79200	4	Canada notes the revised sections and text around transboundary users and impacts and recognition that Old Crow, Aklavik, and Fort McPherson would "...be among the most likely to experience potential indirect impacts due to their proximity to and reliance on the Porcupine Caribou herd" (p.3-309), reiterating this conclusion from the previous final EIS (p. 3-233 of the FEIS). Canada also notes, with appreciation, that the transboundary impacts section of subsistence use is rewritten and is 50% longer. However, the Gwich'in and Inuvialuit made substantial submissions to the draft and final EIS preceding this draft SEIS, yet those submissions do not appear to be referenced directly. Such submissions included relevant and specific information for the consideration of the transboundary impacts, such as those "potential indirect impacts" noted on p. 3-309. Canada requests the U.S. clarify why material from those submissions is not quoted and referenced directly, given the valuable and concrete input.	Reviewed previous submissions to ensure they were adequately addressed and reference the entities providing information as appropriate.
Allen	Mark	Government of Canada	79200	5	The Cumulative Impacts section for Subsistence use (beginning on p. 3-326) shows that Canadian Gwich'in and Inuvialuit could shoulder the greatest potential risk to their use and reliance on the Porcupine Caribou herd while receiving none of the purported benefits of development (e.g., financial, others). Additionally, given the lack of consultation directly with Gwich'in and Inuvialuit in Canada, the analysis of the potential impacts on their cultural and subsistence needs is incomplete and lacks consideration of potential mitigation or compensation measures. Canada views the U.S. as having an outstanding commitment to consult Canada's Indigenous Governments and organizations. To inform the Final SEIS, Canada requests that the U.S. work with Canada to hold a public information session for communities that may potentially be most affected by development in the Coastal Plain.	Two Gwich'in communities (Arctic Village and Venetie) are specifically considered in the environmental justice section based on their identified use of relevant subsistence resources in Section B.4.3. Other Gwich'in community impacts are discussed in the subsistence and sociocultural analyses (Sections 3.4.3 and 3.4.4, respectively), including Canadian communities. Per an earlier comment response, the environmental justice analysis, which is based on EO 12898, focuses on populations within the United States, consistent with the language of that EO. The joint lead agencies will continue to work through DOI and the State Department to coordinate with the Government of Canada.
Allen	Mark	Government of Canada	79200	33	Canada acknowledges the addition and inclusion of Traditional Knowledge (TK) in the development of several Lease Stipulations and Required Operating Procedures (e.g., Lease Stipulation 9 for Alternative D requiring local traditional knowledge for mapping). Additional details and synthesis of transboundary subsistence harvest of waterfowl/waterbirds for Indigenous Peoples in Canada is helpful. However, there are inconsistencies in how impacts of changes to population distribution are reported vs traditional use of the resource. For example, the document notes that development in the area may displace populations of Snow Geese further east into Canada and areas in the Inuvialuit Settlement Region (p. 3-324). The SEIS states that this would increase opportunities for harvest in Canada. However, this would only apply to fall harvest of Snow Geese and is a mismatch to the preferred timing of spring harvest of Snow Geese by many Indigenous Peoples in adjacent areas of Canada (p. 3-303).	Added text clarifying that the increase in availability would not occur during the primary waterfowl hunting season.
Boldrick	Lauren	EPA Region 10	80058	4	Subsistence Uses and Resources The DSEIS notes that disproportionate and adverse impacts on communities with EJ concerns would occur primarily through potential decreases in the abundance or availability of subsistence resources.(4) EPA recommends developing targeted mitigation measures to address potential significant impacts to subsistence resources. (4) DSEIS page 3-370 to 3-371 As previously stated, identifying, and developing effective mitigation measures should be performed in collaboration with the affected communities. Examples of potential mitigation measures could include minimizing the impacts to caribou, marine mammals, and other subsistence species; improving access to subsistence resources; and supporting inter- and intra-community sharing networks that may be disrupted. EPA recommends the use of the replacement cost method (RCM) to quantify the monetary cost of replacing subsistence foods that may be lost because of lease activities. RCM is a standard technique for evaluating the dollar value of an ecosystem service.(5) EPA advises that the lead agencies consider options for co-management of the Program area with the impacted Alaska Native communities, akin to the co-management of Bear's Ears National Monument. (6) (5) See Brown & Burch, 1992; Hougner, Colding, & Soderqvist, 2006 (6) https://www.doi.gov/pressreleases/blm-forest-service-and-five-tribes-bears-ears-commission-commit-historic-co-management . Accessed 9/28/2023.	Requiring mitigation measures for any alternative is decided at the time of the ROD by the DOI decision-maker, who may consider the provided examples. Existing stipulations and Required Operating Procedures currently contain the requirement for community outreach, which would support project-specific identification of issues and mitigation measures, including those related to public health.
Boldrick	Lauren	EPA Region 10	80058	7	The DSEIS identifies food security and nutrition as another set of potential downstream impacts of disruptions to subsistence resources. EPA recommends collaborating with impacted communities to design mitigation measures that directly address potential impacts to food security and nutrition, which may include support for health infrastructure and resources.	Existing stipulations and Required Operating Procedures currently contain the requirement for community outreach, which would support project-specific identification of issues and mitigation measures.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Boldrick	Lauren	EPA Region 10	80058	9	As explained in the DSEIS, residents of the North Slope Borough will be directly impacted by upstream development in the lease program due to adverse impacts to subsistence "resource availability, resource abundance, and user access" and residents are "especially vulnerable to climate-related effects due to their economic, nutritional, and cultural dependence on subsistence food resources".(10),(11) EPA emphasizes the need to mitigate public health impacts to communities of the North Slope Borough in light of the disproportionate impacts of upstream oil and gas development on this population. (10) US Census. (July 2022). North Slope Borough. https://www.census.gov/quickfacts/fact/table/northslopeboroughalaska/PST045222 (11) DSEIS Page 3-368	Requiring mitigation measures for any alternative is decided at the time of the ROD by the DOI decision-maker. Existing stipulations and Required Operating Procedures currently contain the requirement for community outreach, which would support project-specific identification of issues and mitigation measures, including those related to public health.
Durack	Ryan	-	80109	28	It is an improvement that Inuvialuit harvest data has been included in the SDEIS, however we note that there are errors in how it is presented and represented. The harvest table and any corresponding text should identify Inuvialuit harvest as a minimum count and not an estimate. Estimates of harvest were provided in some years during an earlier study of Inuvialuit harvest, however recent data collated by the Porcupine Caribou Management Board (PCMB) are minimum counts of harvested caribou. More specifically, although there is an attempt to collect Porcupine Caribou harvest data from the communities of Aklavik, Inuvik and Tuktoyaktuk, the quality of data varies significantly. Harvest information from Aklavik, in years when available, tends to be relatively accurate although it is still a minimum count. Sampled households can be very high, sometimes exceeding 90% of homes surveyed. Data from Inuvialuit harvesters in the community of Inuvik tends to be sparse and is not an accurate reflection of Inuvialuit users in that community. We know from past work and through communication with Inuvialuit harvesters that harvest from this community is similar to the community of Aklavik, although that can vary and can either be greater or less, pending the seasonal distribution of caribou. Harvest by Inuvialuit hunters from Inuvik is largely not reflected in the harvest numbers presented and would likely be double what is presented in the SDEIS table. Tuktoyaktuk does collect harvest data but generally is not a major harvester of Porcupine Caribou, although the right for those harvesters to take Porcupine Caribou exists, and with improved access to that community provided by the relatively new Inuvik to Tuktoyaktuk Highway, harvest may increase in the future.	The text of Section B.4.3 does state that the caribou harvest data represent minimum counts and are likely lower than actual harvests. Reviewed the Inuvialuit Harvest Data to ensure that it is accurately represented with appropriate caveats.
Brisson	Brook	Trustees for Alaska	80131	400	Relatedly, the draft SEIS inaccurately indicates that infrastructure reclamation would "lessen[] the duration of impacts for individual developments."(1101) This assertion is contradicted by statements elsewhere in the draft SEIS that "reclamation and restoration of original habitat value has not been proven" in the Arctic.(1102) In addition, and as addressed in greater detail above, infrastructure causes long-term impacts in the Arctic that may never be restored. (1103) Even if developed areas could be restored to their original state, infrastructure that is in place for long periods may alter the movement patterns of subsistence species long after removal. (1101) Id. at 3-322 (1102) Id. at 3-182; see also id. at 3-97. (1103) See supra Section V.C.	Reviewed and edited language to more accurately reflect the limitations of reclamation.
Brisson	Brook	Trustees for Alaska	80131	401	The agencies also fail to address how hunting from motorized vehicles and roads may impact subsistence resources and users. Regarding the Porcupine Caribou Herd's post-calving aggregations, the agencies state that "if hunting occurs from the roads during these movements, crossing rates may be lower and tolerance of roads is likely to be lower" depending on "the frequency, timing, and location of hunting."(1104) However, the draft SEIS leaves open the question of when, where, and how frequently hunting may occur in the program area. The draft SEIS indicates "hunting by local residents is likely to occur from roads in the program area."(1105) It also indicates "[h]unting from motorized vehicles during the summer in the program area would likely be limited to roads and would be conducted only by local residents."(1106) These statements do not clearly establish whether hunting will be allowed or whether regulations will limit hunting to local users. This is concerning and must be addressed in the final SEIS in order to allow the agencies to take a hard look at the impact of hunting along roads. The agencies must also explain the mechanism by which hunting, if it is allowed along roads, will be regulated. The draft SEIS currently indicates "ROP 38 would prohibit hunting, trapping, and fishing by lessees, operators, and contractors when persons are on work status" but that this restriction "would not apply once workers' shifts end and they return to a public airport or community."(1107) The agencies must explain how this statement relates to the assertion that hunting is likely to be limited to local residents. (1104) DSEIS at 3-211. (1105) Id. at 3-209 (1106) Id. at 3-211. (1107) Id. at 3-314 to 3-315.	It is not possible to know exactly how road use would be managed under the reasonably foreseeable development scenario, but may be similar to recent road use agreements between Nuiqsut and ConocoPhillips, Alaska . Review and edited language for clarity.
Brisson	Brook	Trustees for Alaska	80131	402	In addition, the agencies' analysis does not sufficiently address impacts from noise on subsistence users and resources. First, regarding noise from seismic activities, the analysis incorrectly states that "regardless of the availability of lands for leasing, seismic activities could occur across the entire program area."(1108) This is no longer accurate based on the various alternatives and the analysis should be corrected. Second, the draft SEIS does not fully account for the impacts of increased aircraft traffic to subsistence harvesting of caribou and other resources. Aircraft traffic, including plane and helicopter traffic, reduce subsistence harvest opportunities for important subsistence species including birds, marine mammals, and caribou. Aircraft traffic also impacts whale hunts(1109) and is considered by many to be the most common impact to caribou hunters because noise may divert or delay caribou.(1110) Despite detailing the negative effects of noise, and in particular aircraft noise, the draft SEIS does not assess impacts from air traffic noise in their alternative's analysis. Regarding Alternative B, the agencies simply state that noise impacts could occur. The agencies do not address aircraft noise specifically or the magnitude of noise impacts overall for this alternative.(1111) The agencies do not mention noise impacts for Alternative C. For alternative D the agencies briefly mention noise in regard to seismic exploration but make no mention of aircraft noise or address the magnitude of noise impacts likely to occur under this alternative.(1112) More meaningful analysis of noise impacts is necessary because noise can cause "widespread changes in migration or abundance" and "cause regional impacts extending outside the program area."(1113) (1108) Id. at 3-310. (1109) Id. at 3-311. (1110) Id. at 3-310. (1111) Id. at 3-320. (1112) Id. at 3-323. (1113) Id. at 3-312. (1133) Id. at 3-331.	Edited text regarding areas open to seismic activity. The impacts of noise on subsistence are addressed primarily under Section 3.4.3, "Impacts Common to All Action Alternatives," as the primary differences between the alternatives are the magnitude and extent based on the area open to leasing. Reviewed the individual alternatives to ensure noise-related impacts are adequately addressed.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	409	However, the agencies' findings highlight the need for further specificity surrounding the subsistence "tipping point" the agencies warn against.(1133) Simply acknowledging the possibility of a food security and cultural disaster occurring on a regional scale is not enough. The final SEIS should use predictive models of future development, such as those indicating declines in the Porcupine Caribou Herd, to give more context about what level of development would risk a subsistence tipping point. The agencies should also provide more specific information about how they anticipate subsistence users will "adapt" to predicted declines in resource availability. At a minimum, the agencies must address whether any of the action alternatives, in combination with reasonably foreseeable future actions (RFFAs), are likely to lead to a subsistence tipping point.	Reviewed discussion regarding community adaptability and incorporated additional information as appropriate. There is no precedent at this time for predictive models to determine adaptive tipping points for subsistence-based communities.
Heynen	Mitch	Government of Yukon	80159	11	The draft SEIS contains a number of improvements with respect to updated information that may be used to assess socio-economic effects on Canadian user communities of the herd. In addition, the draft SEIS makes clear that the communities of Old Crow, Fort McPherson and Aklavik would "be among the most likely to experience potential indirect impacts due to their proximity to and reliance on the Porcupine Caribou Herd". We also note that the draft SEIS now includes Canadian harvest data, and although we note the data is presented with some small errors, we appreciate the inclusion of this important addition. We see two places where significant improvements to the draft SEIS could occur: 1. Indigenous governments in Canada have made significant submissions to all stages of the EIS process, including the recent scoping for the draft SEIS, yet we see few references to the significant materials they have included. These submissions provide important context directly from the user communities that are identified as being "among the most likely to experience potential indirect impacts...", as referenced above. This information is critical to any impact assessment as it ties directly to the probability and consequences of impacts on these communities. 2. Limited analyses are provided to assess the actual socio-economic impacts on Canadian user groups of the herd. For example, in our scoping feedback, the Government of Yukon requested three specific SEIS of analyses be completed to address impacts to Canadian subsistence users of the herd; however, apart from adding harvest data to the draft, rigorous analyses remain absent or incomplete. Specifically, we requested and continue to request that analyses are completed that: - Considers the long-term sustainability of the herd's population and harvest by all users in scenarios where critical habitat are impacted by development and climate change. - Assesses the cumulative effects of oil and gas development, including environmental stochasticity and long-term projections of climate change on subsistence users, including herd size and availability, and implications for harvest management. The required building blocks to complete this work are in place, specifically the work of Russell and Gunn (2019), Severson et al. (2021), and the Porcupine Caribou Management Board's Harvest Management Plan (2010). Input from Indigenous governments in Canada provide critical context, assessments of probabilities and consequences. Using these documents and other supporting information, it is possible to provide a review and assessment that considers the impacts on Canadian subsistence users from the proposed oil and gas leasing program on the Coastal Plain. We recognize that a formal assessment under ANILCA section 810 may not be possible, but we see no reason why a thorough assessment of subsistence impacts is not provided to meet the requirements and intent of the 1987 Agreement Between the Government of Canada and the Government of the United States of America on the Conservation of the Porcupine Caribou Herd. As noted in the draft SEIS, Canadian users are the primary users of the Porcupine Caribou herd and are most likely to be significantly impacted by this program. Despite acknowledging that Gwich'in and Inuvialuit in Canada are most at risk from this program, the draft SEIS fails to adequately assess the impacts on these Indigenous communities. We recommend that the draft SEIS be updated to better assess impacts to these communities by completing the tasks identified above, but also through direct engagement with Canadian communities as appropriate.	Section 3.4.3, Subsistence Uses and Resources, incorporates information from the Porcupine Caribou Management Board's Harvest Management Plan. This section has been reviewed to ensure Canadian submissions are adequately cited, and to provide additional discussion regarding potential impacts to Canadian subsistence users of the Porcupine Caribou Herd. More quantitative analyses and models may be more appropriate for future development projects which will have their own NEPA processes.
Heslep	Alison	-	80164	11	The draft SEIS further notes that 85 percent of the PCH's total harvest are by Canadian user groups; as such, they would experience the most impacts if the PCH population declines substantially or if herd migration or distribution changes to the extent that Canadian hunters experience reduced resource availability. A substantial reduction in caribou availability would reduce the opportunities to participate in traditional hunting, harvesting, processing, consumption, and sharing practices. Over time, it could erode key social and cultural values and activities. In light of the foregoing, the GNWT strongly urges the BLM to consider the aforementioned concerns before taking any actions or decisions in the ANWR that may impact the region and the residents of the NWT.	Reviewed transboundary impacts to ensure the impacts raised by the commenter are adequately addressed. The SEIS does acknowledge the potential for impacts resulting from a large-scale decline in the Porcupine Caribou Herd. However, the BLM concludes that such a large-scale decline in Porcupine Caribou Herd numbers is unlikely to occur under the action alternatives.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Heslep	Alison	-	80164	29	#15 Ch/Sec/Sub-sec 3.4.3 Title Transboundary Subsistence Uses Comment(s) The GNWT is a signatory to land claim agreements (i.e., treaties) with the Gwich'in and Inuvialuit and is currently negotiating a transboundary agreement with the Nacho Nyak Dun. The Indigenous and treaty rights recognized in these agreements are protected by Section 35, Part 1 of the Canadian Constitution Act, 1982, which recognizes the right of Indigenous peoples to harvest wildlife species like the Porcupine Caribou as they have for millennia. The draft SEIS states that "Mitigation that avoids or minimizes impacts on Alaskan subsistence hunters would have positive ancillary effects on hunters in Canada as well." However, it is vague on how these measures would address potential effects on those from the Northwest Territories (NWT) who harvest Porcupine Caribou. The GNWT recommends referencing Canadian Indigenous governments and Indigenous organizations' harvesting rights under the Gwich'in Comprehensive Land Claim Agreement and the Inuvialuit Final Agreements in the final SEIS. Recommendation(s) The GNWT seeks a detailed explanation or quantification of the potential impacts on individuals in the NWT who subsist on Porcupine Caribou for each Alternative. Additionally, clarify how specific mitigations associated with each Alternative would mitigate these effects and outline how specific mitigations for each Alternative would lessen these impacts. Further, quantify the potential residual impacts to PCH subsistence harvesters in the NWT after the application of mitigations in each Alternative. The assessment could also be linked to the colour chart used to tie harvest management to herd status in the PCH Harvest Management Plan.	The psycho-social effects of the issuance of leases are addressed in the Sociocultural Systems section, which states that "Increased income and employment levels—most likely to occur among the Iñupiat of the North Slope—could affect sociocultural systems by changing the socioeconomic status of certain community members [...] this could cause social stresses in a community [...]" The analysis goes on to state that "Kofinas and others (2016) note that the role of super-harvester households often changes over time and that communities are in fact quite resilient to these changes." Further, while such impacts could be substantial, they are still an indirect impact as they do not occur at the same time and place as the action. Reviewed SEIS discussion of transboundary impacts to more clearly link proposed lease stipulations and ROPs to mitigating potential impacts to Porcupine Caribou Herd users in Canada. The SEIS references the Porcupine Caribou Herd harvest Management Plan, including the color chart. Added more text to differentiate between the alternatives. More quantitative analyses and models may be more appropriate for future development projects which will have their own NEPA processes.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	136	The Tribes present here information related to subsistence resources (specifically, caribou and waterfowl) and subsistence use and access for BLM and USFWS to incorporate into the draft SEIS and as a starting point for their ANILCA Section 810 evaluation. While the draft SEIS improves on the subsistence analysis in the Final EIS, there are several portions of the analysis that require improvement. As an initial matter, in the subsection Subsistence Definition and Relevant Legislation, BLM and USFWS state, "Subsistence hunting, fishing and trapping in the Refuge is regulated under a dual management system by the Federal government and the State of Alaska."(238) This is not correct. There are three management systems, Tribal, Federal, and State. Failure to acknowledge Tribes' own subsistence management system reflects the lack of consideration for including Tribes' knowledge in the subsistence analysis. BLM and USFWS must add descriptions of Tribal management of subsistence in this section. The Tribes base their subsistence management on countless generations of knowledge of the animals, plants, and their people. The draft SEIS must include a discussion of this knowledge and take it into account in the impacts analysis. (238) Draft SEIS at 3-293.	Reviewed language regarding subsistence management to include acknowledgement and discussion of indigenous resource management systems.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	138	Development would directly affect the Porcupine Caribou Herd, which would directly affect the Gwich'in. BLM and USWFS need to include the direct impacts of development and winter seismic introducing new smells to the program area. BLM and USFWS recognize the introduction of "vibration, noise, visual, and olfactory impacts on cultural resources" as direct impacts on cultural resources.(241) The caribou, waterfowl, and other wildlife are some of the cultural resources that would suffer these direct impacts. BLM and USFWS need to add smells, to the Noise, Traffic, and Human Activity subsection(242) and discuss the potential impacts from introduced smells on wildlife more than the three sentences on smell in the Contamination subsection.(243) (241) Draft SEIS at 3-285. (242) Id. at 3-309 to 313. (243) Id. at 3-316 to 318. Finally, BLM and USFWS's Infrastructure subsection(244) largely focuses on the potential benefits of the roads. These same roads would have a direct impact on the Porcupine Caribou Herd and the Gwich'in. The draft SEIS hints at this when it states, "hunting activity along the road corridor has been reported to deflect caribou away from the area ... [R]ecent caribou monitoring data suggest that caribou may hesitate to cross the road, or follow the road corridor for a period of time instead of crossing it."(245) These impacts from the introduction of new roads would affect caribou migration and it would not take much of a shift to divert the migration away from Arctic Village and Venetie. If the caribou migration shifts east or west, it would decimate these communities and their way of life. (244) Id. at 3-313 to 316 (245) Id. at 3-314.	Added text about smells to the "Noise, Traffic, and Human Activity" section and cross-referenced the Contamination section. The Infrastructure subsection in Section addresses the potential benefits of roads but provides more discussion of the negative impacts of roads and other infrastructure, including deflection and changes in migration. According to Section 3.3.4, infrastructure is not expected to divert caribou migration altogether.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	140	The agencies must incorporate the extensive Traditional Knowledge we have compiled on this subject. As a starting point for such information, the agencies must incorporate the information in Attachment A to this comment letter, as well as improve government to government consultation efforts to obtain additional information.	Appendix D of the SEIS provides traditional knowledge of indigenous and local residents as it pertains to the Arctic Refuge.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	141	The four sentences BLM and USFWS use to describe Arctic Village's traditional use of waterfowl are woefully inadequate. (253) The agencies must do more to improve their NEPA analysis of direct, indirect, and cumulative effects to waterfowl from an oil and gas program on the Coastal Plain including collecting missing data. (253) Draft SEIS at 3-298. Impacts from oil and gas infrastructure and activities on waterfowl in the Arctic can compromise nest survival and abundance of birds. As discussed in Section IV.B.4, western science shows that impacts from oil and gas infrastructure and activities on migratory waterfowl can compromise nesting and the abundance of waterfowl. Waterfowl nest survival decreased significantly near high-use infrastructure at Prudhoe Bay from 2003-2019.(254) Additionally, waterfowl habitat can be harmed by seismic activities, spills and electrical transmission lines, and oil and gas development can lead to a decrease in nest density and area avoidance. Audubon's Migratory Bird Explorer, a comprehensive compilation of tracking data, found a connection between Venetie and the coastal plain through a tracked Greater White-Fronted Goose. Venetie residents share their waterfowl harvests with Arctic Village. (254) McGuire, R.L., Robards, M. and Liebezeit, J.R. (2023, Apr.). Patterns in avian reproduction in the Prudhoe Bay Oilfield, Alaska, 2003-2019. Journal of Avian Biology. https://www.researchgate.net/publication/370186258_Patterns_in_avian_reproduction_in_the_Prudhoe_Bay_Oilfield Alaska 2003-2019 The Tribes direct the agencies to Attachment A and Section IV.B.4 for Traditional Knowledge that must be incorporated into the analysis of impacts to waterfowl.	The SEIS is based on the best available data which are limited for Arctic Village. Reviewed data on sharing of waterfowl between Venetie and Arctic Village and reviewed and edited the analysis of impacts to waterfowl subsistence harvesting to include additional detail, including detail on impacts related to infrastructure and seismic activity.
Lemke	Deana	Porcupine Caribou Management Board	80334	3	With respect to Canadian harvest data presented in Table 3-50, we note that data is not accurately represented. This is data that is collated each year by the PCMB as part of our Annual Harvest Meeting and is a collation of data provided by the various parties listed in the table. During our meeting each year we have significant discussion around the data quality. Based on our review, we recommend addressing three primary issues in the final SEIS to accurately portray Canadian harvest of the PCH. Firstly, we note errors in how some data is represented in Table 3-50. Inuvialuit harvest is a minimum count that is principally based on harvest from the community of Aklavik. Some harvest reporting does occur by Inuvialuit living in Inuvik although this data is minimal, while harvest would likely be doubled by Inuvialuit in reported years. Specific advice on reporting Inuvialuit harvest will be presented by the Inuvialuit submission to this process and should be reviewed there. Northwest Territories Gwich'in data is an estimate; however, we note that sample sizes in Inuvik are very low and likely not very representative of Gwich'in harvesters from that community.	Added notes to table and text to clarify accuracy of data in representing caribou harvest.
Lemke	Deana	Porcupine Caribou Management Board	80334	4	Secondly, PCH harvest data should be averaged based on two principles: harvest is dependent on availability which changes through time; and no report from a PCMA Party (e.g., Inuvialuit harvest in 2020-21) does not equate to no harvest at all. For example, Inuvialuit harvest in 2020-21 was thought to be the largest harvest by Inuvialuit users in over a decade. Unfortunately, this happened in a year when the Inuvialuit harvest study paused, so no data was collected that is readily available. Table 3-50 does a reasonable job of considering the data appropriately although summations and averages presented should be considered with great caution as many numbers are minimum count and are knowingly missing some data.	Reviewed Canadian harvest data based on comment to ensure data are accurately represented in the SEIS table and text. Averages in the tables are based only on years with available data. Added note to the harvest tables to clarify.
Lemke	Deana	Porcupine Caribou Management Board	80334	5	Finally, based on our experience as a management board working with harvesters since 1987, we note that harvest is highly dependent on the availability of Porcupine Caribou, and this can vary on a decadal scale. For example, similar data as is presented in Table 3-50 in the 1990s and 2000s would have documented significant harvest from all Canadian Parties, including the First Nation of Nacho Nyak Dun and Tr'ondek Hwech'in, and higher harvest reported by licensed Yukon hunters. The Harvest Management Plan for the Porcupine Caribou Herd in Canada (HMP) created by the PCMB in 2010 acknowledges that harvest can vary through time. But in our most complete years of data, PCH harvest has generally varied between 4,000 and 6,000 caribou when the herd has been available. Based on information in the HMP, 85% of that harvest was by Canadian user groups, meaning 3,400 to 5,100 caribou were harvested in Canada. This compares to the maximum harvest in Table 3-50 of 3,367 caribou. It is noteworthy that discussions regarding the 2020-21 harvest season found that harvest that year was likely reflective of historic highs (e.g., ~5,000 caribou), although, unfortunately, data for that year is not readily accessible.	Reviewed Canadian harvest data based on comment to ensure data are accurately represented in the text and tables of the SEIS.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	4	We are also concerned that the draft SEIS does not incorporate traditional Indigenous Knowledge as fully as it could and should. It is critically important that traditional Indigenous knowledge be used to assess impacts to the Gwich'in. The 2020 Leasing Program purported to include traditional Indigenous knowledge, but essentially just included quotations in an appendix; it did not actually incorporate that knowledge into the analysis.(34) The draft SEIS does not fair much better overall. BLM and FWS should comprehensively integrate traditional Indigenous Knowledge in the final SEIS. Doing so is consistent with the Administration's goals and agencies' policies. (34) See generally FEIS vol. 2 Appendix C.	Appendix D of the SEIS provides traditional knowledge of indigenous and local residents as it pertains to the Arctic Refuge.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	8	In the draft SEIS, BLM and FWS now correctly acknowledge a connection between Gwich'in communities in Alaska and Canada and waterfowl. However, the analysis of the impacts of oil and gas on waterfowl, and on the Gwich'in who rely on them, remains lacking. The agencies' impact analysis fails to address how waterfowl subsistence hunters will be impacted under the action alternatives. The sum total of the agencies' analysis of waterfowl impacts related to subsistence is the acknowledgement that all action alternatives could impact waterfowl harvests and that such impacts would be lowest under Alternative D.(36) Waterfowl are also not addressed in the agencies' transboundary impact analysis beyond noting waterfowl are relevant to the analysis and rely on the Coastal Plain.(37) A complete analysis of the impacts of oil and gas on waterfowl and subsistence must be provided in the final SEIS. (36) DSEIS at 3-324. (37) DSEIS at 3-305.	Reviewed discussion of impacts to subsistence uses of waterfowl and added detail as appropriate, including differentiation between alternatives. Added more detailed discussion of waterfowl impacts to the Transboundary discussion.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Demientieff	Bernadette	Gwich'in Steering Committee	80355	10	subsistence use varies seasonally within our communities. BLM and FWS still fail to explain how the leasing program will impact resources and practices during each month for all of our communities. We rely on healthy subsistence resources being present in traditional use areas at specific times for successful harvests. Even if the potential impact to wildlife resources may be slight, changes in resource access and availability, including perceived changes in wildlife health due to development, may affect our subsistence. Further, harvest cycle analysis must include and account for climate change impacts to the subsistence harvest and resulting limits to subsistence resource availability.	The EIS incorporates information about the timing of subsistence activities vis-a-vis likely impacts throughout the section "Impacts Common to All Action Alternatives" (e.g., deflection of caribou affecting Gwich'in peak caribou hunting in August to October). Reviewed subsistence analysis to incorporate additional context on timing of subsistence harvesting vis-à-vis potential impacts as appropriate. More detailed analysis of the timing of impacts would be more appropriate for future NEPA analysis for individual projects.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	11	Finally, the agencies' conclusion that the availability of resources such as caribou, sheep, moose, small land mammals, fish, waterfowl, and vegetation, would likely be reduced from the cumulative impacts of an oil and gas program is consistent with our traditional Indigenous knowledge.(41) The agencies correctly acknowledge that such impacts would be felt by Iñupiat, Gwich'in, and Inuvialuit subsistence users.(42) However, the agencies' findings highlight the need for further specificity surrounding the subsistence "tipping point" the agencies warn against.(43) The agencies should also provide more specific information about how they anticipate subsistence users will "adapt" to predicted declines in resource availability, as we strongly question the basis for this assumption. (41) DSEIS at 3-330. (42) DSEIS at 3-331. (43) DSEIS at 3-331.	Reviewed discussion regarding community adaptability and incorporated additional information as appropriate. There is no precedent at this time for predictive models to determine adaptive tipping points for subsistence-based communities.
John	Jazzlyn	-	80376	1	Elders have talked about the hard times are coming. The lease sale and oil drilling should not be our hard times. The roads and equipments to lease will cause caribou and birds to move away, and step away from their homes. Our traditional way of life will not be gone. We depend on the caribou and birds to eat, make clothing, and barterner -- barter for things we need. The govern- -- government will not give us assistance if this sale happens -- if this sale happens. We need to protect our lives there. Not only for -- for -- about our future -- not only -- not only for ourselves, but for our future generation to come.	Potential impacts on subsistence are detailed in Section 3.4.3 as well as in the ANILCA 810 evaluation in Appendix F.
Wassilie	Carl	-	80459	2	So so my relatives are also dependent on on the bowhead boil as well as the caribou. And we share relations over millennial with the with the indigenous peoples of the of the region. And and you know I'd be, I reserve all water rights for a traditional hunting and fishing under Anaqutide Lake, first of all, Anaqutide Lake has not been fully utilized by the and it's and it's being recognized by conservation environmental groups to protect our our resources. There's a referral that I would just like to put on record, called Alaskan Natives and the Land. It was a joint State Federal Commission regarding Alaska native use of the Lands.	Section 3.4.3 describes potential impacts to subsistence uses, including impacts to sharing to communities outside the program area.

U.3.46 Technical Edit and Formatting

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Allen	Mark	Government of Canada	79200	41	A note on terminology. In some places in the draft SEIS, statements like "...specifically Canadian First Nations hunters, in the Inuvialuit Settlement Region of..." (p. 3-266) appear. In Canada, the correct terminology to use is "Indigenous People" (capitalized), comprised of First Nations (like the Gwich'in), Inuit (like the Inuvialuit) and Métis. When referring to Inuvialuit, it is correct to use Inuit or Inuvialuit, but not First Nations. i.e., Inuit and First Nations are distinct peoples under the blanket term "Indigenous People".	The Final SEIS has been updated to use Indigenous People per the comment
Brisson	Brook	Trustees for Alaska	80131	218	We also suggest that the agencies define or update the definitions for the following terms in the final SEIS: - Natural flow regime - The natural flow regime is the magnitude, frequency, duration, timing, and rate of change of flow events that characterize the hydrology of a natural river environments. - Ecological integrity - Ecological integrity is the capability of supporting and maintaining a balanced, integrated, adaptive community of organisms having a species composition and functional organization comparable to that of natural habitat of the region. - Biodiversity - Biodiversity is the variety and variability among living organisms and the ecological complexes in which they occur. - Water quality - Water quality is the physical, chemical, thermal, and biological properties of water suitable for aquatic organisms within a particular aquatic ecosystem.	Definitions have been added to or updated in the glossary.
Brisson	Brook	Trustees for Alaska	80131	255	Terminology that should be defined or updated and used in the final SEIS. - Anadromous fish - An anadromous fish is a fish or fish species that spends a portion of its lifecycle in both freshwater and marine habitats, where they spawn in and undergo early development in freshwater, enter marine habitats to grow and mature, and return to freshwater to reproduce. Anadromous fish include both semelparous, which die after spawning, and iteroparous forms which spawn multiple times. - Migratory fish - A migratory freshwater fish is a fish or fish species that migrates short or long distances between habitats, which can include inter and intra movements between freshwater, estuarine, or marine habitats, to complete its life cycle. - Resident freshwater fish - A resident fish is a fish or fish species that completes its entire lifecycle within or near the same freshwater habitat. - Natural flow regime - The natural flow regime is the magnitude, frequency, duration, timing, and rate of change of flow events that characterize the hydrology of a natural river environments. - Ecological integrity - Ecological integrity is the capability of supporting and maintaining a balanced, integrated, adaptive community of organisms having a species composition and functional organization comparable to that of natural habitat of the region. - Biodiversity - Biodiversity is the variety and variability among living organisms and the ecological complexes in which they occur. - Water quality - Water quality is the physical, chemical, thermal, and biological properties of water suitable for aquatic organisms within a particular aquatic ecosystem.	Definitions have been added to or updated in the glossary.
Jorgenson	Janet	-	80336	3	STIPULATIONS & ROPs Style varies too much between the ROPs, due to different authors. Need an editor to harmonize so it's easier to read. The tables should be redone to make it easier to see the differences between 3 alternatives. Either 'same as B' plus additional text (preferred) or write out whole thing for each alternative. Now it is a mix of the 2 methods. For example: ROP 35 on abandonment and reclamation. The 3 alternatives are very similar, but wording is different. Also, the last sentence in Alternatives C and D should of course be in B too. Other example: for ROP 41, text under Alternative C says 'same as B', but text under Alternative D repeats the whole of B. Why not say 'same as B' for alternative D? This makes it too hard to search for substantive differences between alternatives.	The lease stipulations and ROPs have been formatted to ensure that styles are consistent and text easier to read. Differences in wording and content were retained as appropriate to preserve differences between alternatives.

U.3.47 Terrestrial Mammals

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	273	We appreciate the variety of maps included in the draft SEIS, including several caribou-relevant maps that are new since the FEIS. However, some updates to the maps are needed. The description given for the post-calving season in the text ("last week of June and first week of July")(748) does not match how the post-calving season appears to be defined in the maps, which show post-calving spanning June 11-30 for the PCH(749) and June 16-30 for the CAH.(750) The text of Section 3.3.4 also contains a reference to Map 3-38 to support a statement that "all of the area in the annual calving grounds of the Porcupine Caribou Herd (at least 30 percent of years) is thought to have low or medium HCP."(751) This map does not depict calving grounds or hydrocarbon potential, but rather depicts a subset from some years of documented large post-calving aggregations of PCH caribou. Even Map 3-39, which does depict the percentage of years that collared caribou were present on calving grounds, does not include hydrocarbon potential.(752) Either a map should be added depicting the stated information or the reference should be removed. (748) DSEIS at 3-198. (749) DSEIS Map 3-30, Map 3-34, and Map 3-39. (750) DSEIS Map 3-35 and Map 3-36. (751) DSEIS at 3-208. (752) DSEIS Map 3-39.	The suggested changes from this comment were made in the Final SEIS and a reference to Table J-22 was added.
Brisson	Brook	Trustees for Alaska	80131	274	Map 3-31 and Map 3-32 show the extent of annual calving grounds and concentrated calving areas between 1983-2018.(753) It is unclear why the maps stop in 2018 as satellite collar monitoring has continued since that time. We request that maps be added for 2019-2023 to give a more complete picture of recent patterns of calving distribution. Furthermore, documentation of calving distribution extends before the years shown on these maps, with aerial survey and radio-telemetry studies documenting calving distributions in the Coastal Plain in the 1960s, 1970s, and early 1980s. Inclusion of these records is important to better demonstrate the historical record of use of the Coastal Plain for caribou calving.(754) (753) DSEIS Map 3-31 and Map 3-32. (754) 2019 DEIS Comment Letter Appendix B at Maps 2 to 17.	The maps of annual Porcupine Caribou Herd calving distribution were updated through 2022, which is the most recent year available. These maps now cover a 40 year period when some telemetry data was available. Text of descriptions of the calving distribution in prior years are included in Appendix B, Section B.3.4 Terrestrial Mammals, Affected Environment.
Brisson	Brook	Trustees for Alaska	80131	304	One purpose of the Arctic Refuge identified by ANILCA is to conserve muskoxen.(835) The BLM and FWS have not sufficiently evaluated the impacts of the oil and gas program in light of this management purpose. Additionally, notably absent is a map depicting the distribution range of muskoxen, including a map that shows muskoxen distribution by alternative. BLM and FWS should include such maps in the final SEIS so that the public can better understand the relationship between the oil and gas program and its potential impacts to muskoxen on the Coastal Plain. This is especially important given the critically reduced muskoxen population. (835) ANILCA § 303(2)(B)(i).	Appendix B, Section B.3.4 Terrestrial Mammals, Affected Environment describes the current status of muskoxen in or near the project area. Based on the most recent reports, muskoxen groups currently only occur near the Canning River and near the Yukon Border.
Heynen	Mitch	Government of Yukon	80159	2	Frequency of Use Mapping and Application to the Selection of Conservation Areas for PCH Frequency of use data layers were provided by our government in 2017 to the BLM in preparation of the EIS. This data forms the basis of areas not available for leasing in the EIS and draft SEIS and as such, we wish to ensure the data is being applied appropriately. We believe we are best positioned to critique this data since Government of Yukon staff created the data layers through analysis they conducted. While we believe the application of data layers describing the frequency of use of habitats by the PCH during calving, post-calving and summer (or other seasons) is warranted and useful in describing critical habitats used by the herd, we do believe there are significant flaws in its application. Below, we provide clarity on how these data layers could best form the basis of conservation areas in the SEIS for PCH. - Files should be updated to include data from 2016 to present. While we do not believe this will result in significant changes in the periods used within the draft SEIS, we do believe it is best practice to incorporate up-to-date results of analysis when and where possible. Our government will work with the drafters to provide the data layers and incorporate them into the final SEIS (in a way that we believe is appropriate). - We recommend that data be displayed in a way that shows the relatively continuous nature of the data as opposed to the 20, 30 and 40% thresholds initially included in the Sensitive Habitat's of the Porcupine Caribou document (PCTC 1993). We believe this provides a more realistic view of how the herd uses the area. We would be happy to provide example legends and approaches based on our experience using this dataset. - The selection of the 40% threshold for calving is arbitrary. The 20, 30 and 40% thresholds were applied in the original Sensitive Habitats of the Porcupine Caribou (PCTC 1993) and were used simply for display of the data. At present there is no rationale for why 40% was used as opposed to 30%, or perhaps 27% or any other value. An example of an objective approach would be to simply look at the ratio of area to frequency of use to seek natural inflections in the data. This approach would ensure an objective approach that would also efficiently identify the area used in most years by the herd (but see our last point below on use of this dataset). Other objective approaches for choosing a data threshold could also be used, provided they result in an outcome consistent with the intent of protecting the calving and post-calving areas. - The 95% kernels used to generate the frequency overlap polygons describe the actual area used by the herd and do not take into account the need for effective habitat at the margins of each range to be considered. The draft SEIS acknowledges that sound, light and other disturbances can affect use of habitat beyond the actual footprint of a disturbance through a zone of influence (ZOI), however this concept is not applied when the boundaries of each Alternative is considered. To do so, a ZOI should be identified and buffered against the actual selected frequency threshold to ensure all available habitats are used by the PCH. The draft SEIS acknowledges this is required, although it references that a similar ZOI as that observed in the existing oil fields would be adequate. However, the distance identified in the draft SEIS is flawed for a number of reasons, and is not applied to the selected frequency threshold when defining critical calving or post-calving areas.	Updated maps have not been received from the Government of Yukon. The 40% threshold was used in developing the alternatives for the Final EIS and carried over in some of the alternatives in the SEIS. The different action alternatives allow different levels of development in areas with different thresholds of annual calving and can be compared based on these differences. As discussed in the SEIS, alternatives that allow more development in areas that are more frequently used for calving are likely to have more impact on caribou, but the potential changes in caribou calving areas (based on Severson et al. 2021) are also discussed to compare among alternatives. There is no assumption that there will be no impact from development in areas used in less than 40% of years.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Heynen	Mitch	Government of Yukon	80159	4	Griffith et al., (2001) describes that the PCH use the best available habitat pending environmental conditions. Severson et al., (2021) conducted analysis evaluating this relationship and agreed, showing that future climate scenarios suggest a much greater use of habitats that are found in the oil and gas leasing program boundary during calving and post-calving. Interannual variability in habitat use is a hallmark of migratory caribou and selection of precise areas during calving with subsequent movements in the post-calving periods is well known. The application of the frequency data layers and understanding of the herd's calving and post-calving ranges must be interpreted in this manner. The selection of specific frequency thresholds is useful for identifying the area most important to the herd on average. However, this selection (e.g., using the 40% contour) does not account for habitats that may play critical roles in areas that are used more rarely at this time. The identification of future projected calving and post-calving areas in Alternative D is an excellent start towards this goal and will assist in addressing current day issues caused by the inter-annual variability that is sometimes noted in the herd's calving and post-calving areas. Alternative B and C do not address these issues. Planning must account for the presence of the herd anywhere the herd could arrive during critical periods, even if the frequency of use is very low (e.g., 5% of years) and to account for future plausible scenarios. The Government of Yukon considers that habitat used by the herd during calving and post-calving in any year is critical to the herd's success. - Once an appropriate frequency threshold with adequate ZOI buffer is chosen, all maps and tables, including the areas identified to protect PCH calving and/or post-calving in Alternatives C and D, and Appendix E, should be updated to reflect the new objective and supported boundary of choice. A clear articulation of the rationale for each step should be provided in addition to how these new layers will be managed as described throughout the draft SEIS.	The areas that were used less than 40% of years were used in the alternatives analysis for the Final EIS. There is no assumption that areas that are used less than 40% of the time are not important, only that development in areas that are used more frequently will likely result in larger impacts than areas that are used less frequently. The Draft SEIS also recognized that the calving and postcalving areas are likely to change with climate change as described by Severson et al. (2021) which informed the development of Alternatives D and D2 and is described in text and tables.
Heynen	Mitch	Government of Yukon	80159	5	Other data layers describing PCH use of habitats Three other data layers used to describe PCH use of the oil and gas leasing program require updating. Updates to data layers that have few years or do not include the most recent years available - are most critical, as the sample sizes were quite low in the EIS due to when satellite GPS collars were first deployed on the herd: - Map 3-31 which describes the calving locations of the herd from 1983 to 2018. Calving maps should be available from the Alaska Department of Fish and Game that can show calving distributions from 2019-2023. The herd has calved in or immediately adjacent to the project area in all of those years. - Map 3-34 which describes movement pathways of collared caribou using Brownian Bridge Movement Models from 2013-2018. This is a very limited dataset and since 2019 we have observed a very different movement during the late post-calving / insect harassment period. This new data could be required to describe herd needs pending which Alternative is ultimately selected. - Map 3-38 which describes large post-calving aggregations as presented by Russell and Gunn (2019). This was a very limited dataset (4 years) that would have 5 additional years of data to consider. As stated above, movements shifted considerably beginning in 2019 and these analysis would identify new movement patterns not described with this limited data set.	Map 3-32 was updated to include calving distributions through 2022. Maps have not been provided by the Government of Yukon.
Lampe	Charles	Kaktovik Iñupiat Corporation	80350	5	You want indigenous knowledge? Then look at your own maps of the Porcupine Caribou Herd (PCH). As you can see on Map 3-32, in 2018, the PCH core calving area was predominately in Canada. Our current observations as the people of the area is that the PCH is continuing to calve east of Kaktovik. Why haven't the maps been updated? Is it because our observations are accurate but not popular? We also take issue with Map 3-33 which shows modeling of future PCH calving kernels within the 1002 Area. We find it interesting that the U.S. Fish and Wildlife Service has never presented these maps to our community! These maps are not described within the document that we could find, and so we are asking that these maps are removed until we are presented with the underlying data that was used to generate them. We plan to work with the Alaska Department of Fish and Game on the source data and basis for how these maps were generated. They were not part of the 2020 FEIS, nor were they discussed at any time with our community, so we are incredibly suspicious of the underlying premise of the model.	Maps of the calving distribution of the Porcupine Caribou herd were updated to include data through 2022. The predicted future calving distribution maps are from Severson et al. (2021) which contains a description of the methodology used to develop the maps. Reference to Map 3-33 as well as additional information on the assumptions associated with Map 3-33 were added.
Lampe	Charles	Kaktovik Iñupiat Corporation	80350	7	Speaking of caribou and gravel, after 50 years of observation our people can tell you that caribou like gravel and infrastructure. They use it for insect relief because it is off the tundra, and they use it for calf protection because where there is infrastructure it provides predator abatement. Caribou have now been living with gravel and infrastructure through many generations and it has become a natural part of their annual movements. Your own maps for the Central Arctic Herd (CAH) depict this movement on Map 3-36. The CAH has even grown its population over the last 50 years. Despite what the "people of the caribou" to the south of us say - both the PCH and the CAH spend most of their life-cycle on the North Slope and are more closely observed by the indigenous group called the Iñupiat!	The use of gravel roads and pads by the Central Arctic Herd for oestrid fly relief is well documented and discussed in the SEIS. The Central Arctic Herd did increase in size after oil development on the summer range, but its distribution and movements have also been affected. Differences between the Central Arctic Herd and the Porcupine Caribou Herd are discussed in the SEIS (Appendix B, Section B.3.4, Terrestrial Mammals).
Wilson	Josie	-	80385	4	to know that map 314 shows that the caribou are not heavily in the 1002 area and therefore the announcement needs to reflect that fact when considering impacts.	Maps 3-30 through 3-36 (SEIS Appendix A, Maps and Figures) show that the project area is important for the Porcupine Caribou Herd during the calving and postcalving periods and may become more important with continuing climate change. The project area is also used during some years by the Central Arctic Caribou Herd, as described in the SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Swearingen	Christin	-	133	1	First, thank you for canceling the existing leases in the Arctic Refuge. I live in Fairbanks and work in the environmental sector. Like many people, I am extremely concerned about climate change. I heard about the ice cellars in Kaktovik thawing, and people's whale meat rotting. I experienced the smoke from extreme wildfires here in Interior Alaska. And I heard about typhoon Merbok and coastal erosion in our western communities. It is imperative that we stop developing oil and gas resources and transition to renewable energy. Please create the most protections possible for the coastal plain through the new EIS. I would like BLM to consider the caribou migration route through a lens of climate change, thinking of how their habitat will change in coming decades. The Porcupine caribou herd should have more protections in the new EIS, considering how sacred they are to the Gwich'in.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Not Provided	Not Provided	-	11708	4	The BLM must carefully consider the impacts of climate change on the caribou migration route. Caribou habitat in the Arctic Refuge will be drastically altered in the coming decades. As the climate crisis alters the Porcupine herd’s migration routes and habitats, oil and gas activity will only intensify the negative impacts that threaten the future of this critically irreplaceable herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Raffaeli	Michael	-	19265	2	The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, which the Gwich'in Nation relies on for cultural survival and food security. BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Potentially changing migration routes and habitat will likely increase the impacts of any oil and gas activity on the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Yarnell	Ronald	All About Adventure	19299	6	The "no surface occupation" areas along the rivers will not do enough to protect the migration of caribou that we see when paddling across the 1002 area.	The analysis for each alternative considers the different stipulations to help protect area resources, including special protections along rivers. It is acknowledged that roads and pipelines may have to cross some rivers to allow development. Future developments will likely have to go through the NEPA process.
Wald	Michael	-	20420	3	Thirdly, impacts on caribou calving are reliant on a dataset which is too limited to capture the variations in PCH behavior over time. DataSEIS relied upon in this document do not consider the spatial variation implied by proxy data sources such at the fossilized antler record nor the historical record (both oral and written) which suggest a much larger range of areas being used by the PCH over a longer period of time than is being considered in the SEIS.	The SEIS states, "Caribou may have used the area for 400,000 years, and subsistence hunting of caribou has occurred in the program area for millennia (Nuttall et al. 2005; USFWS 2015a; Miller et al. 2023)." and describes the available data from telemetry and early observations from scientists in the area. It also describes how the Project Area is likely to be used more during calving as a result of climate change.
Cecere	Doug	-	22126	7	BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Wilson	William	-	22128	6	BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Byrne	Charles	-	22694	2	Finally, BLM should look at the Porcupine caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Sampery	Mich	-	22745	1	migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).

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FERRITO	THOMAS	-	23084	1	BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Family	Susang-Talamo	-	23235	4	BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Mieras	Dean	-	23828	4	4.BLM should look at the caribou migration route through a lens of climate change and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Marne	Marielle	-	23872	1	Animal person here, so BLM should look at the caribou migration route through a lens of climate change and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
DEANGELIS	KATHERINE	-	24102	1	The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security. BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
vanessa	Paula	-	25034	3	Also the alternatives set forth in the Draft Supplemental Environmental Impact Statement do not grant strong enough protections to the Porcupine caribou herd, upon which the Gwich'in Nation also relies for cultural survival and important food security. Oil and gas activity will certainly impact changing migration routes and habitat for the Porcupine herd. Help us protect the Arctic Refuge and Wilderness please!	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Stewart	Sarah	-	29334	6	BLM should look at the caribou migration route with thought of climate change and how caribou habitat in the Arctic Refuge will change in the future. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd. Thank you for your careful attention to our comments.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Fitch	K	-	29817	1	2. The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Dunson	Debra	-	32367	3	The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd, upon which the Gwich'in Nation relies for cultural survival and food security. In the Arctic Refuge, the herds that utilize the coastal plain as their calving and nursery grounds need unpolluted and unobstructed seasonal migration routes. The greenhouse gas effect in Alaska has accelerated and lengthened the warm season. The caribou and other Arctic animals are adapting to the warming temperatures by adjusting their historic ranges and migration routes. I believe that the adaptative behaviors of the Porcupine caribou herd have only just begun. The Draft SEIS fails to present science-based alternatives that will protect the Porcupine caribou herd as they alter their reproductive and migration behaviors in response to warming in the Arctic Refuge. The oil and gas infrastructure will likely encumber the animals' adaptations, which will threaten the herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).

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Sletteland	Holly	-	33122	2	Stronger protections for the Porcupine caribou herd which incorporate projected changes in migration routes due to climate change.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Not Provided	Not Provided	-	35058	3	Also the BLM should look at the caribou migration route with regard to climate change. Oil and gas activity will probably impact changing migration routes and habitat for the porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Higgins	Janice	-	39851	5	BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Siddiqi	Marilyn	-	44947	1	BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd. I am opposed to all oil and gas drilling activities in the Arctic Refuge.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Van Atta	Karen	-	44964	5	The SEIS does not give proper consideration to long term impacts. BLM should consider the impacts of climate change on caribou habitat and caribou migration routes in the Arctic Refuge. Oil and gas activity will likely exacerbate deleterious impacts, environmental stressors, and changing migration routes and habitat for the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Not Provided	Not Provided	-	44970	5	BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Oil and gas activity will likely impact changing migration routes and habitat for the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Ballinger	Paul	-	45440	1	The stated first four management goals required of the USFWS conflict with any future disturbance due to resource extraction. The future health of arctic caribou herds depend upon the coastal plain of the Arctic NWR for calving grounds, and disturbance brought on by oil and gas extraction will result in disruption and reduced fitness to the herds.	The SEIS discusses the importance of the Project Area for calving and postcalving of the Porcupine Caribou Herd and discusses the potential impacts and uncertainties under the different alternatives.
Hamilton	Bruce	-	45518	4	Even when you exclude these sensitive wildlife areas from the offering, that does not mean the rest of the Refuge is fair game. Lots of other wildlife depend on those other intact habitats for their survival. There is no unused and unoccupied part of this wildlife refuge. Carefully mapping and documenting the musk ox ranges, wolf dens and habitat etc. will also help you identify other critical areas to avoid leasing in.	The current distribution of muskoxen is described in the SEIS. Muskoxen are currently rare in the Project Area and wolf den habitat is limited on the Coastal Plain.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Schoen	John	-	45576	6	In contrast to the central Arctic oil fields where the coastal plain is much broader (greater than 100-150 miles from the arctic coast), the Arctic Refuge coastal plain is much narrower (15-40 miles). This compression of habitats concentrates the habitat use of many wildlife species including caribou, polar bears, grizzly bears, wolverine, wolves, muskoxen, fish, snow geese, and over 130 species of migratory birds. Overlaying an industrial infrastructure on this narrow coastal plain will have significant influence on the wildlife that use this important area. Caribou: The coastal plain of the Arctic Refuge provides important calving and insect relief habitat for the Porcupine Caribou Herd (PCH)-currently estimated at over 200,000 animals (ADF&G), it is the largest international migratory caribou herd in the world. The United States has an international agreement with Canada to conserve this herd. The Gwich'in Nation of Canada and the U.S. have depended on this herd for their subsistence use for centuries. In the Central Arctic Herd (CAH), around Prudhoe Bay, where oil development has occurred on a portion of the calving grounds, cows in the late stage of pregnancy and with newborn calves avoided and shifted concentrated calving away from developed areas, including prime calving and foraging habitat (Whitten and Cameron 1983; Dau and Cameron 1986; Cameron et al. 1992; Nelleman and Cameron 1996, 1998; Murphy and Lawhead 2000; Wolfe 2000). Displacement from calving grounds can result in overcrowding and competition on suboptimal habitat. Decreased forage availability and lower nutrient intake can reduce reproductive rates (Cameron 1995, Nelleman and Cameron 1998). Caribou cows within oil fields gained less weight and exhibited lower calving and calf survival rates than cows outside oil fields (Cameron 1995). Displacement from prime calving grounds may also increase predation (Whitten al al. 1992, Nelleman and Cameron 1998, Griffith et al. 2002, Young et al. 2002).	The SEIS describes decreased calving density within approximately 4 to 5 km of roads and pads within the Kuparuk Road. The distance of decreased caribou density has remained relatively consistent across studies conducted in different decades. The SEIS also describes how this avoidance could potentially have larger demographic impacts on the Porcupine Caribou Herd as compared to the Central Arctic Herd because of limited alternative calving areas as described by Russell and Gunn (2019). Cameron et al. (2005) did report lower parturition rates for Central Arctic Herd caribou calving on the developed western calving area than on the less developed eastern calving area, but this relationship hasn't continued in recent years (Johnson et al. 2020) and the majority of Central Arctic Herd calving has occurred on the western side recently.
Schoen	John	-	45576	7	Generally, some caribou appear to habituate to the presence of structures in oil fields but not to human presence and vehicular traffic (Nelleman and Cameron 1998). Caribou of the CAH avoided areas within 2.5 mi (4 km) of roads and pipelines, functionally increasing habitat loss from 2% (the immediate footprint of roads and gravel pads) to 29% (Wolfe 2000). The sensitivity of caribou to human activity and structures is greater during calving than during insect seasons, greater for maternal than nonmaternal caribou during the calving period, and greater during periods of intense insect harassment versus no insect harassment during summer. For example, Dau and Cameron (1986) clearly showed maternal caribou avoided roads during calving even when traffic levels were low, but nonmaternal caribou did not. During periods of intense insect harassment, some caribou have selected the elevated gravel of roads and shade from pipelines and buildings. At Prudhoe Bay, large groups of caribou often crossed roads with traffic and feeder pipelines during intense insect harassment but were reluctant to cross the same areas after insect harassment abated (Dau, personal communication 2002). Air traffic also has stressed parturient and postpartum cows and calves (Yokel 1997). Roads and pipelines and the snowdrifts they cause may impede caribou movements between foraging and insect-relief areas or disrupt normal movements, especially if perpendicular to routes (Gilliam and Lent 1982). Groups of greater than 100 caribou, common when under insect harassment and attempting to move to insect-relief areas at the coast, have greater difficulty crossing roads and pipelines than smaller groups (Smith and Cameron 1985). Measures to mitigate oil development impacts that appeared to work during exploration and onset of development may have become less effective as the cumulative effects of expanding development increased and the oil fields became operational (Whitten, personal communication 2002).	The SEIS describes how caribou of the Central Arctic Herd do not appear to have habituated to human activity during the calving season; despite 50 years of exposure to oil development the Central Arctic Herd still has lower densities within 4 to 5 km of road and pads. It also describes how caribou cross roads and pads frequently during periods of mosquito and fly harassment and select roads and pads as oestrid fly relief habitat. The level of tolerance to human activity varies greatly by season and, to a lesser extent, by age and sex of the caribou and insect activity.
Schoen	John	-	45576	8	Demonstrable development related effects on the portion of the CAH occurring within the oil fields were observed during 1980-2000, despite masking effects of relatively low caribou densities and highly favorable weather on the calving grounds (Wolfe 2000, Griffith et al. 2002). Effects included shifting of concentrated calving from the Kuparuk oil field to the southwest of the field and delayed and deflected movement to and from coastal insect-relief areas (Whitten and Cameron 1983; Dau and Cameron 1986; Cameron et al. 1992; Nelleman and Cameron 1996, 1998; Murphy and Lawhead 2000; Wolfe 2000). Although the CAH increased from about 5,000 animals in 1978 to an estimated 27,000 in 2000, a population decline occurred from 1992 to 1995, followed by a rebound (Cameron et al. 2002). Comparing the higher growth rate of the Teshekpuk Caribou Herd (TCH) to the growth rate of the CAH, suggests that the CAH population may have been influenced by development infrastructure after approximately 1987. It appears that although oil field development has had a negative effect on the CAH, favorable environmental conditions, a low density of animals on the calving and post-calving grounds, and available calving area outside the oil fields on the broad coastal plain may have minimized the population-level impacts at this time. If displacement were to occur on a much larger herd like the PCH which migrate long distances, the population-level impacts could be much higher. Griffith et. al. (2002), in fact, have predicted significant population-level impacts to the PCH from industrial development of the concentrated calving ground.	The SEIS describes different reasons why development on the Porcupine Caribou Herd range could have potentially larger impacts compared to development on the calving range than the Central Arctic Herd. It is difficult to estimate impacts caused by development by comparing the population trajectories of different herds which may be impacted by different factors, but it is notable that the TCH and Central Arctic Herd had similar population changes from the 1970's to when they reached their peak size in about 2010.
Schoen	John	-	45576	9	I recommend that a comprehensive and detailed analysis of the cumulative effects of oil development on the Porcupine Caribou Herd be conducted and peer-reviewed by an independent scientific body. It will also be important to evaluate the potential effects on caribou in terms of subsistence users of this herd living in both Canada and Alaska.	The SEIS discusses Russell and Gunn (2019) which used existing caribou models to predict impacts to Porcupine Caribou Herd caribou under alternatives in the Final EIS and the assumptions associated with that analysis. The model provides estimates of demographic impacts but also illustrates the difficulty in making quantifiable estimate of demographic impacts of future development.

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Schoen	John	-	45576	13	Grizzly bears: Industrial development in the coastal plain of the Arctic Refuge would substantially increase bear-human interactions. Defense of life and property (DLP) mortality of grizzlies rises with increases in human residence and anthropogenic food availability. ADF&G found 21% of oil field grizzlies supplementing natural forage with anthropogenic foods. When access to garbage and human food was suddenly eliminated, food-conditioned bears suffered DLP mortalities greater than sustainable rates. In the Prudhoe Bay oil fields, the mortality rates of all adults and subadults that fed on anthropogenic foods was significantly higher than for bears that fed on natural foods (ADF&G). DLP kills are an example of the risks facing grizzly bears following industrial development in wilderness habitat. Arctic Refuge grizzly populations occur at low densities and are highly vulnerable to increasing harvest rates. Seismic exploration, particularly new 3-dimensional techniques, may also disrupt denning.	The SEIS describes the potential for increased grizzly bear mortality. The incidence of food-conditioned bears can be limited through proper food and waste handling as required by ROP 2 and a grizzly bear interaction plan (ROP 4).
Schoen	John	-	45576	14	A cumulative effects analysis of the impacts of exploration and development must be conducted for grizzly bears using the coastal plain. Other terrestrial mammals that need to be evaluated include wolverines, wolves, arctic fox, musk oxen, and some key indicators of small mammals.	These species are discussed in the SEIS but most occur at low densities and there is little specific data available on distribution in the project area. Grizzly bears in the Prudhoe Bay and Kuparuk oilfields continue to use the area, although some became food conditioned due to previous practices of poor food and waste handling in Deadhorse (Pederson 2019). The incidence of food-conditioned bears and foxes can be limited through proper food and waste handling as required by ROP 2 and a grizzly bear interaction plan (ROP 4). Arctic foxes are at risk of being replaced by red foxes in some portion of their range as discussed in the SEIS.
Keim	Frank	-	53297	2	Since the terrestrial habitat of caribou, especially snow conditions on mountain tops (for insect relief), will also be affected by the climate emergency, any plans for drilling, etc., should take into account this important variable. Other behaviors of the caribou herds should also be considered, especially in the construction of shore-based structures that might interfere with caribou birthing of calves and insect relief gained by cow caribou and their calves standing in the shallows of the shorelines. It is well understood that caribou are an extremely important resource for the cultural identity and survival of Iñupiat and Gwich'in peoples.	Earlier melting of snow in ridges that are used for insect relief could lead to increased insect harassment, although this impact would be most likely to occur in ridgetops inland from the project area. The impact of earlier snowmelt on the Coastal Plain on caribou distribution is discussed in Severson et al. (2021) and incorporated into the SEIS.
Walsh	AnnaMary	-	61290	3	Migration routes of animals will be of concern as climate changes. To allow for additional challenges for these animals because of infrastructure and development. So many things need to be taken into consideration that the Draft SEIS is placing on a “back burner,” ignoring things that need to be faced.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Yuen	Shirley	-	62012	2	It fails to provide strong protection to the Porcupine caribou herd and needs to close loopholes which would allow for infrastructure and development.	Severson et al. (2021) provided models of the calving and postcalving use of the Porcupine Caribou Herd under future levels of climate change. These projections were used in the development of Alternative D and discussed in the alternatives comparisons.
La Point	Dr. Thomas	-	62522	2	The draft does not give enough protection to the Porcupine caribou herd’s current migration routes nor does it consider how those routes will change as a result of climate disruption.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Russell	Donna	-	62761	1	Evaluate Porcupine caribou migration patterns (may have changed due to climate changes) and protect their routes, calving and gathering areas.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Lindberg	Kristy	-	71021	3	Furthermore, the BLM needs to consider how climate change will affect caribou habitat and migration in the Arctic Refuge, and how oil and gas drilling would affect this, even making climate change worse.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).

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Sigman	Marilyn	-	78189	6	Caribou migration routes and habitat are likely to change the Arctic Refuge in the coming decades which will increase the impacts of any oil and gas activity on the Porcupine Herd. The SEIS fails to consider this.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Rentschler	Dennis	-	78408	5	Provide stronger protections for the Porcupine caribou herd.	The protections for the Porcupine Caribou Herd vary by alternative and the potential impacts are discussed for each alternative.
Cronin	Matthew	-	78587	1	I previously noted that the December 2018 Coastal Plain Oil and Gas Leasing Program dEIS (see the enclosure) did not adequately use and cite the available scientific literature on caribou and oil fields. This also the case with the 2023 SEIS. Several relevant industry-sponsored peer-reviewed papers are not cited (see the references). The most important omission of literature is in Pages 3-208 to 3-213 of the 2023 SEIS. In these pages reference is made to displacement of calving caribou 1.25 miles (2 km) to 3.1 miles (5 km) and 2.49 miles (4 km) to 3.75 miles (6 km) from the Milne Point oil field roads. The SEIS does not cite Noel et al. (2004, 2006) who analyzed these data and found they were not accurate. Please review Noel et al. (2004, 2006) and revise the SEIS accordingly. The omission of relevant literature deviates from principles of scientific integrity (DOI Scientific Integrity websites: 3 (doi.gov), Integrity of Scientific and Scholarly Activities U.S. Department of the Interior (doi.gov)). This is particularly a concern because my previous comments on Department of the Interior documents with the same information presented here were not implemented in the SEIS. Thank you for your consideration. References Ballard, W.B., M.A. Cronin, and H.A. Whitlaw. 2000. Caribou and oil fields. Pages 85-104 in J.C. Truett and S.R. Johnson eds. The Natural History of an Arctic oil field, Development and the biota. Academic Press, San Diego and London. Cronin, M.A., B.J. Pierson, S.R. Johnson, L.E. Noel, and W.B. Ballard. 1997. Caribou population density in the Prudhoe Bay region of Alaska. The Journal of Wildlife Research 2:59-68. Note: this journal is out of print. I can provide a pdf of this paper on request. Cronin, M.A., S.C. Amstrup, G.M. Durner, L.E. Noel, and W.B. Ballard. 1998. Caribou distribution relative to oil field infrastructure in the Prudhoe Bay oil field, Alaska. Arctic 51:85-93. Cronin, M.A., W.B. Ballard, J.D. Bryan, B.J. Pierson, and J.D. McKendrick. 1998. Northern Alaska oil fields and caribou: A commentary. Biological Conservation 83:195-208. Cronin, M.A., H.A. Whitlaw, and W.B. Ballard. 2000. Northern Alaska oil fields and caribou. Wildlife Society Bulletin 28:919-922. Cronin, M.A., H.A. Whitlaw, and W.B. Ballard. 2001. Addendum. Northern Alaska oil fields and caribou. Wildlife Society Bulletin 29:764. Cronin, M.A., S.P. Haskell, and W.B. Ballard. 2003. The frequency of antlerless female caribou and reindeer in Alaska. Rangifer 23:67-70. Noel, L.E., K.R. Parker, and M.A. Cronin. 2004. Caribou distribution near an oilfield road on Alaska's North Slope, 1978-2001. Wildlife Society Bulletin. 32:757-771. Noel, L.E., K.R. Parker, and M.A. Cronin. 2006. Response to Joly et al. (2006) A Reevaluation of Caribou Distribution Near an Oilfield Road on Alaska's North Slope. Wildlife Society Bulletin 34:870-873. Noel, L. E., M. K. Butcher, M. A. Cronin, and B. Streever. 2006. Assessment of effects of an Oil Pipeline on Caribou, Rangifer tarandus, Use of Riparian Habitats in Arctic Alaska, 2001-2003. Canadian Field-Naturalist 120:325-330. Pollard, R.H., W.B. Ballard, L.E. Noel, and M.A. Cronin. 1996. Summer distribution of caribou in the area of the Prudhoe Bay oil field, Alaska, 1990-1994. Canadian Field Naturalist 110:659-674.	The results of Noel et al. (2004, 2006) are contrary to more recent research (Prichard et al. 2020, 2022, Johnson et al. 2020), perhaps as a result of limitations discussed by Joly et al. (2006). The SEIS does describe the increase in the Central Arctic Herd following oil development as well as the use of gravel roads and pads for oestrid fly relief. Citation of Cronin et al. (1998) was added to the SEIS.
Allen	Mark	Government of Canada	79200	7	It remains very difficult to understand the magnitude of potential impacts to Porcupine Caribou overall and between the Alternatives. For instance, Table 3-36 outlines the Type, Context, and Duration of the generalized potential effects, but does not ascribe any magnitude to them. Table 2-2 and the associated text throughout the draft SEIS does a very good job of explaining the quantitative differences in areas and lease stipulations amongst the Alternatives (e.g., p. 3-216 for Alternative C areas affected and stipulations), but not potential effect sizes to the valued resources (like caribou or polar bears). The modelled estimates of impact from Griffith et al. 2002, Russell and Gunn 2019, and Russell et al. 2021 are discussed at length in section 3.3.4 (Terrestrial Mammals) and are acknowledged on page 3-222 as "...the best available quantification of the magnitude of potential demographic impacts on the Porcupine Caribou herd that could occur as a result of development." However, even after appropriately acknowledging the limitations of predictive work, the draft SEIS does not draw any further alignment between the literature cited and mostly likely ranges of impacts across the Alternatives that relate back to reduced calving success or other key demographic features. Given the high-value data and analysis available, Canada suggests providing the minimum likely effect levels, or magnitude of effect to valued resources, between the Alternatives, rather than a relative ranking of the Alternatives with the current reliance on the numerical differences in areas of lease stipulations.	Population level impact estimates from Russell and Gunn (2019) (2021) are discussed, along with the assumptions. These estimates were added to the alternatives descriptions in the environmental consequences for Alternatives as appropriate.
Allen	Mark	Government of Canada	79200	18	The currently-deployed set of camera collars on the Porcupine Caribou herd should yield valuable pre-development energy-budget data that can improve the rigor of models like those used in Russell and Gunn (2019). There should be emphasis on ensuring that work remains funded and prioritized by management authorities for the herd and that, in the Final SEIS, energy-budget studies (using camera collar data) should be required under the lease stipulations during construction and operation, thereby achieving a Before-After-Control-Impact design. Government of Canada is providing financial support to Yukon Government for their collaboration on the camera collar work.	Under ROP 23(f), the lessee would provide funding to the USFWS to design and carry out a study of caribou movement and spatial use. The adaptive research and management plan under Alternative D2 would require continuing monitoring of caribou (Lease Stipulation 6). Additional studies could be required as part of the NEPA process for future projects, and could include energy-budget studies.
Allen	Mark	Government of Canada	79200	20	Canada confirmed that the Canadian co-chair of the Porcupine Caribou Technical Committee (PCTC) was not contacted for any advice in this regard. Canada understands that there are some more natural breaks in the data that are not at the 10-year intervals used in the draft SEIS. Canada requests the PCTC is contacted to advise how best to represent those data for the Final SEIS.	The BLM and USFWS have worked with DOI to contact appropriate representatives of the PCTC for additional information. ROP 23.1 discusses future coordination with the PCTC on caribou adaptive management.

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Allen	Mark	Government of Canada	79200	28	The fulsome inclusion of material from Russell and Gunn (2019) is appreciated. However, Canada believes that a clearer list of points could be included to outline why and how the Porcupine Caribou herd will likely be unusually vulnerable to oil and gas development. This specifically includes bringing together the following points in a new section on 'Sensitivity of the Porcupine Caribou Herd': - More specifically cite the low maximal growth rates of the PCH herd (5% or less per year). - Continue to note that the herd calves where the best spring conditions allow, and that early calf survival is 10% higher than average when the herd calves in the Coastal Plain. - Provide annual cow survival estimates for the herd and outline how a very small change in female survival (5%) moves the herd from an increasing population trajectory to a decreasing trend. - Recognize that "...low productivity suggests factors that affect cow or her calf's survival will have a disproportionate impact in limiting herd growth or exacerbating a herd decline." (Russell and Gunn (2019) p. 15) - Note that the over-riding conclusion from Russell and Gunn (2019) scenarios was that in all model runs of all starting population sizes and climate conditions, development caused the herd to decline faster and grow slower, thus potentially leading to a tipping point that risks a population losing more animals in a decline phase than can be made up in a growth phase. - Conclude that the data and modelling appear to indicate that the herd success can, at least partially, be attributed to the value of an undisturbed Coastal Plain, that the herd has limited annual growth potential, and that any development risks tipping the sensitive demographic variables into values that make it difficult for the herd to recover from natural cycles.	The SEIS contains a bulleted list of why the Porcupine Caribou Herd may experience larger demographic impacts from development creative to the Central Arctic Herd (Section 3.3.5). The list in the comment has been reviewed and incorporated into edits for the Final SEIS.
Allen	Mark	Government of Canada	79200	45	Comments submitted throughout the entire regulatory process by the Government of Canada and others, as well as text in the draft SEIS12, point to the vulnerability of Porcupine Caribou and the Southern Beaufort population of polar bears to pressures above and beyond what they are already facing with climate change - and how important the Coastal Plain is for those species. Further studies suggest that importance appears to be growing through time. 12 E.g., Under cumulative effects for polar bears, "...however the situation is especially concerning for the SBS stock, one of three judged to have the highest vulnerability to the effects of climate change." (p. 3-267) Canada has long supported full protection of the calving grounds for the Porcupine Caribou herd given the importance of such habitat to the herd's survival and importance of the herd to Indigenous People in Yukon and the Northwest Territories in Canada. Canada has recognized this importance through multiple protected areas and conservation efforts, at and among various governments (see Annex 2). Further, as part of Canada's commitment to Indigenous People and under the Porcupine Caribou Agreement, Canada recognizes the importance of protecting the summer range grounds, where Russell and Gunn (2019) show a relationship between the probability of a cow caribou becoming pregnant, and having reproductive success the following spring, with good body condition acquired in the summer area while raising calves.	The importance of current and potential future calving areas based on Severson et al. (2021) are discussed in the SEIS.
Klein-Enright	Chere	-	79228	4	Caribou have flourished on the North Slope since Prudhoe Bay development occurred. Map 314 of the Leasing SEIS shows that caribou are not heavily in the 1002 area and, therefore, the analysis needs to reflect that fact when considering impacts.	The project area contains important calving and postcalving habitat for the Porcupine Caribou Herd as described in the SEIS.
Holleman	Marybeth	-	79514	1	The alternatives set forth in the Draft SEIS do not grant strong enough protections to the Porcupine caribou herd; you need to consider climate change and its effect on caribou habitat and migration. For example, changing migration routes and habitat will likely increase the impacts of any oil and gas activity on the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Kutschbach Brohl	Lisa	-	79621	3	BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Changing migration routes and habitat will likely increase the impacts of any oil and gas activity on the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Hanson	Art	-	79828	3	BLM should look at the caribou migration route through a lens of climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Changing migration routes and habitat will likely increase the impacts of any oil and gas activity on the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
K	PJ	-	79882	5	Caribou migration routes should be looked at through a lens of climate change, with shifting of routes and changing habitat in the coming decades highly probable. Activity from oil and gas development will undoubtedly exacerbate the shift.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).

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Westmoreland	Henry	-	79942	1	BLM should look at the caribou migration route as affected by climate change, and consider how caribou habitat in the Arctic Refuge will change in the coming decades. Changing migration routes and habitat will likely increase the impacts of any oil and gas activity on the Porcupine herd.	The Porcupine Caribou Herd primarily uses the project area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change, as mapped by Severson et al. (2021).
Moriarty	Kara	Alaska Oil & Gas Association	79980	36	The Draft SEIS's analysis of potential impacts to the Porcupine Caribou Herd and Central Arctic Caribou Herd is well-written with robust analysis but contains some outdated and incomplete data that appears to overstate the potential adverse effects of oil and natural gas development on caribou and the likelihood of those effects. Also, the Draft SEIS includes discussion on potential impacts of roads on calving caribou but it does not include references and analysis recognizing that a herd's reaction to a road may lessen with habituation. For example, in its August 2018 Supplemental EIS for GMT2, BLM recognized that multiple studies suggest that caribou habituate to infrastructure and roads: Wolfe et al. (2000) reported that, once caribou were initially exposed to infrastructure, crossing transportation corridors occurred more often than expected. Habituated cow-calf groups crossed roads as frequently as bulls, and roads did not have an observable effect on animal distribution or individual energetic cost. Boertje et al. (2012) and Nicholson et al. (2016) found that large ranges, historic movement patterns, and large-scale migratory behavior persist even when highways and roads bisected those ranges. (87) (87) GMT2 Supplemental EIS at 352. Similar studies relate to the potential impact of aircraft noise which also fail to recognize that caribou can become habituated to such noise. It was appropriately considered in the GMT2 Supplemental EIS: Prolonged exposure to low-level aircraft could increase daily energy expenditure and decrease individual fitness or reproductive capacity over time if not properly mitigated. Alternatively, caribou can become habituated to aircraft; particularly when aircraft consistently maintain altitudes greater than 500 feet above ground level and do not engage in hazing or harassing behavior. Habituated animals do not associate aircraft with danger and, as a result, exert minimal additional energy when overflown.(88) (88) Id. at 351 (emphases added; citations omitted). These are a few examples of references that BLM has relied on for evaluating other oil and natural gas activities, and they must be considered in any reevaluation. The concept of species becoming habituated is known and is referenced by BLM's own assessment and should be considered here.	The SEIS does discuss the fact the Central Arctic Herd frequently crosses roads and pads during mid-summer, especially during periods of insect harassment (e.g., Prichard et al. 2020, Severson et al. 2023) and how caribou reactions to aircraft can decrease with repeated exposure. Most caribou do not appear to habituate to even low-levels of traffic during the calving season, but the magnitude of the avoidance decreases later in summer and caribou often use active roads and pads for oestrid fly relief habitat. Reference to Boertje et al. (2012) was added to the Final SEIS to provide another reference to how herds can cross roads through their range.
McCulley	Alice	Tr'ondëk Hwëch'in	80073	6	It is encouraging to see that use of research from Canadian experts (4) has been incorporated throughout the SEIS. However, four years have passed since the last EIS with important new research5 that now needs to be included in the SEIS. There are also decades of information collected by the PCTC on several important herd health indicators such as pregnancy rates, adult female survival, body condition and calf survival that can and should be incorporated into future predictive models. (4) Russell, D. and A Gunn, 2019. Vulnerability analysis of the Porcupine Caribou Herd to potential development of the 1002 lands in the Arctic National Wildlife Refuge, Alaska. Report prepared for Environment Yukon, Canadian Wildlife Service, and GNWT Department of Environment and Natural Resources. 143 pp. Without a quantitative impact assessment, it is difficult to understand impacts to the PCH. An impact assessment is needed for Alternatives C and D, like that conducted by Russell and Gunn (2019). Predictive models also need to consider that the PCH is likely to increase reliance on the program area in response to climate change (5). Also, without an adequate impact assessment that incorporates magnitude/intensity of activity (in addition to area/footprint and timing) it is impossible to know if mitigations will be effective. (5) E.g.: Severson, J.P., H.E. Johnson, S.M. Arthur, W.B. Leacock, and M.J. Suitor, 2021. Spring phenology drives range shifts in a migratory Arctic ungulate with key implications for the future. Glob. Change Biol. 27:4540-4563. E.g.: Johnson, H.E., T.S. Golden, L.G. Adams, D.D. Gustine, and E.A. Lenart, 2020. Caribou use of habitat near energy development in Arctic Alaska. 3. Wildl. Mgt. 84(3): 401-412	The SEIS discusses both Severson et al. (2021) and Johnson et al. (2020) as well as the modeling of demographic impacts conducted in Russell and Gunn (2019). Russell and Gunn (2019) demonstrates the difficulty of modeling demographic impacts given imperfect data on the changes in caribou behavior and how those changes will translate to demographic impacts.
McCulley	Alice	Tr'ondëk Hwëch'in	80073	7	Proposed mitigations also continue to rely heavily on responses by the Central Arctic Herd (CAH) to oil and gas development in the Prudhoe Bay oilfield. This assumption is flawed based on substantial differences in herd size, growth rates, and landscape characteristics of the Coastal Plain in each herd range. The PCH is unique and careful monitoring will be critical to managing impacts of oil and gas development to the herd.	Differences between the Central Arctic Herd and the Porcupine Herd that could influence their responses to infrastructure are discussed in the SEIS.
McCulley	Alice	Tr'ondëk Hwëch'in	80073	10	No proven reclamation standards were identified because they do not exist for the PCH. Comparisons with the CAH are misleading because of differences in herd size and habitat characteristics. Modelling suggests that without development, the PCH will increase use of the Coastal Plain as the climate continues to warm. The PCH needs to be free to use whatever habitat they require, each year or season. The impacts of being displaced from critical habitat could be severe and long-lasting, and in turn impact several generations of subsistence users.	Differences between the Central Arctic Herd and the Porcupine Herd that could influence their responses to infrastructure as well as modeling of potential populations level impacts are discussed in the SEIS.
Proescholdt	Kevin	Wilderness Watch	80104	11	Our past comments have addressed issues concerning various species of mammals and birds. Of particular concern are caribou. We noted scientific research showing the impacts to caribou from development and the sensitivity of the Porcupine Caribou Herd. Yet, the DSEIS downplays the impacts of oil and gas development to this species by assuming greater adaption to h human-caused impacts than the research shows.	The SEIS provides examples of impacts of oil development on the Central Arctic Herd because that herd is close by and has been extensively researched, but differences between the herds and results of research on other herds are also discussed.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Durack	Ryan	-	80109	29	The SDEIS should provide rationale, including biological support, for why the 40% value was selected for frequency of use to identify the core of the PCH calving and post- calving range. The selection of the calving and post- calving area used to identify the important areas appears to be subjective. The selection is also inadequate to protect the herd from the impacts of oil and gas development as habitats that are frequently used by the herd during calving and post- calving are not identified as important for calving and post- calving functions (e.g., a frequency of 33% which isn t included which would be every third year on average). In the Yukon, Inuvialuit, through land claims, have permanently protected the majority of the Canadian portion of the herd s calving grounds. Similarly, almost the entire post- calving area within Canada is protected. These areas form the basis for significant protections from development impacts to the PCH during the herd s most sensitive periods in the Yukon. Strong rationale is required to ensure adequate habitats are selected for protection through avoidance stipulations in the leasing program and that very low frequency, but still important habitats are conserved through required operating procedures (ROP)s identified within the SDEIS.	The Porcupine Caribou Herd primarily uses the Project Area during the calving and postcalving period. The SEIS discusses the current movements of the herd during these seasons and discusses how habitat use might change during these seasons as a result of climate change as mapped by Severson et al. (2021).
Durack	Ryan	-	80109	30	Much of the Porcupine Caribou Herd (PCH) data in the SDEIS is dated. We are aware of annual data collection programs on herd that are supported through IFA- Implementation funding. We ask that the most current data be used when the final SEIS is issued. For example, in the SDEIS, data describing calving and post- calving areas are current to 2016. Other movement information on the herd is current to 2018. While we note this data should have been current in the SDEIS we have reviewed, at a minimum we recommend that all data be updated and provided in the final SEIS when issued. We also recommend that all lease stipulations, ROPs and other mitigations and proposed adaptive management including monitoring take the most current data into account.	The SEIS was updated with new data when available.
Durack	Ryan	-	80109	31	In the Inuvialuit Settlement Region, the Environmental Impact Screening Committee and the Environmental Impact Review Board are responsible for impact assessment, these co- management bodies arise from the IFA, as such we understand the process by which evaluations of impacts to values from industrial scale projects are made. In our review of impacts to the PCH, very little information is provided to arrive at impact designations. We note that much of the impact assessment does not align with information provided throughout the SDEIS. For example, the Inuvialuit have been party to impact assessment on PCH and the oil and gas leasing program completed by Don Russell and Anne Gunn for the governments of Canada, Yukon and NWT. This work is referenced heavily throughout the SDEIS however it does not appear to be considered in the impact assessment for the herd within the SDEIS. This is disconcerting as the impact assessment forms the basis for understanding risk to the herd and will help with identifying appropriate avoidance, mitigation, and monitoring of the herd. The impact assessment must link back directly to the information provided about the herd throughout the SDEIS. As recognized by the SDEIS, Inuvialuit communities will be the most impacted by this development through impacts to the PCH and indirect impacts to subsistence rights.	The environmental consequences section has been updated to include discussion of population impact projections from Russell and Gunn (2019) for alternatives that are similar to those modeled by Russell and Gunn (2019). The Section 810 analysis has been reviewed to ensure consistency with the SEIS Terrestrial Mammals section.
Durack	Ryan	-	80109	32	Little information is available in the SDEIS on the effectiveness of existing industrial mitigations for the PCH or other barren-ground caribou herds that use oil and gas areas. Even though decades of experience exist from oil and gas programs in Alaska, unfortunately information on industrial mitigations is still lacking. As a result, we are uncertain how effective mitigations will be. In addition, we know that herds can respond differently to disturbance and have very different habitats from one another. Most experience understanding barren- ground caribou responses to oil and gas activity has been gained from the Central Arctic Herd (CAH) in Alaska. This herd is very different than PCH. PCH number from 121,000 to more than 218,000 as opposed to the 14 low tens of thousands usually noted in the CAH. PCH aggregate in the summer in groups of tens of thousands, to over a hundred thousand caribou, moving quickly to locations to seek relief from biting insects. PCH aggregations are much larger than the entire CAH. We do not know how aggregations of this size will respond to industrial activities like pipelines, drilling activities, traffic, etc. The calving and post- calving habitats of the CAH are broad and open, whereas the calving and post- calving habitats of the PCH from the ISR into Alaska are constrained by mountains, resulting in a narrow band of habitat along the coast. This is where Inuvialuit harvest occurs in the summer. The differences in the herds are significant and add to uncertainty of the effectiveness of mitigation. When considering the mitigation hierarchy, avoidance is the best strategy to ensure impacts do not occur to PCH and Inuvialuit harvesting rights.	There has been extensive research conducted on the effects of infrastructure on the Central Arctic Herd during 50 years of exposure to development, however, there are also multiple reasons why the response of the Porcupine Caribou Herd could differ from the Central Arctic Herd. These differences, including the much larger postcalving groups in the Porcupine Caribou Herd, are described in the SEIS.
Brisson	Brook	Trustees for Alaska	80131	263	There are several areas in which the analysis of potential impacts to caribou should be strengthened to better conform to the best available science. To start, the draft SEIS acknowledges the potential for changes in spring snowmelt timing, which could have effects on forage amount, timing, and quality,(704) but fails to meaningfully analyze the impacts of this change. Such effects are especially important given recent findings that female caribou select for fine-scale habitat patches that are snow free during the calving period, even when the landscape around them is still mostly covered in snow. (705) This could accentuate negative impacts of delays in timing of snowmelt and should be reflected in the SEIS. (704) DSEIS at 3-205. (705) Severson et al. 2021.	Selection for areas of recent snowmelt during calving was identified as important by Griffith et al. (2002) as well as others who noted the high forage quality of newly emergent forage. The results of Griffith et al. (2002) and Severson et al. (2021) are discussed in the SEIS.
Brisson	Brook	Trustees for Alaska	80131	264	The draft SEIS also indicates that few data are available on the effects of noise and light on caribou.(706) This would be an excellent place to rely more heavily upon Indigenous Knowledge and the experiences of subsistence hunters and other Indigenous people who have a substantial lived experience with caribou and their responses to various stimuli. For example, the draft SEIS acknowledges that traditional knowledge indicates that caribou and other species "are particularly sensitive to noise and human activity."(707) Inclusion of such knowledge would be in keeping with the recommendations of ROP 23.(708) (706) DSEIS at 3-206. (707) DSEIS at 3-310. (708) DSEIS at 2-55.	Information on traditional knowledge regarding noise and light has been added.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	265	While the draft SEIS acknowledges that maternal caribou with young calves show avoidance of infrastructure, it indicates that this lasts until "calves are approximately 3 weeks of age, when the level of displacement declines."(709) It refers to this as corresponding to the calving and post-calving periods for the PCH. However, Johnson et al. 2020, which is not cited in support of these statements, found that displacement continues through the mosquito season as well, lasting at least four weeks after calving.(710) It is important that the amount of expected displacement not be underestimated in the SEIS and that reference to Johnson et al.'s findings and extended timeline of displacement be incorporated. (709) DSEIS at 3-207. (710) Johnson et al. 2020.	Johnson et al. (2020) estimated that caribou used areas less than expected within 5, 2, and 1 km of roads during the calving, postcalving, and mosquito season, respectively. They did not analyze data from the oestrid fly season when caribou use roads and pads for fly relief. Johnson et al. (2020) indicates there is a large decline in the effect of roads from 5 to 2 km as caribou move closer to development during the postcalving period. Other research has also shown little avoidance during the postcalving season or decreased avoidance from the calving season to the postcalving season and by oestrid fly season, caribou use roads and pads for fly relief habitat (e.g., Smith et al. 1994, Pollard et al. 1996, Haskell et al. 2006, Prichard et al. 2020, 2022).
Brisson	Brook	Trustees for Alaska	80131	266	It is disconcerting that the draft SEIS claims that the same zone of influence (ZOI) "observed at existing North Slope oil fields would be expected in the program area with similar development and mitigation design"(711) given that it acknowledged in the previous paragraph that the PCH has had much less exposure to development and "would be expected to have stronger reactions to infrastructure than Central Arctic Herd caribou."(712) In light of the stronger effects expected for the PCH and the compounding effect of hunting being allowed from industrial roads (which the draft SEIS acknowledges), it would be in keeping with the best-available scientific information to describe a 3.11 mile displacement as the minimum expected and state that displacement could extend beyond this distance. (711) DSEIS at 3-208. (712) DSEIS at 3-208. The above issues of displacement distance and timing also apply to the description of analysis assumptions provided in Appendix F. This states that maternal caribou may be displaced up to 2.5 miles from roads and pads up to three weeks after calving.(713) As is noted above, this ZOI estimate is shorter than the 3.11 miles stated in Section 3.3.4,(714) which itself is a minimum estimate for the PCH. Similarly, the best available science supports a longer duration of displacement.(715) (713) DSEIS App. F at F-34. (714) DSEIS at 3-213. (715) Johnson et al. 2020.	Appendix G has been updated to include an assumption of displacement of up to 3.11 miles. The estimated displacement of Central Arctic Herd caribou near oil field roads has been fairly consistent at ~4-5 km across studies conducted in different decades and using different methods. If hunting occurs, there will likely be additional displacement related to hunting activity, but it will be dependent on the frequency, type, and location of hunting.
Brisson	Brook	Trustees for Alaska	80131	267	The draft SEIS indicates that traffic levels of "15 vehicles per hour or more ha[ve] been shown to deflect caribou movements and delay road crossings."(716) Such a statement underestimates the impacts of traffic based on the best available science. The draft SEIS later acknowledges that "maternal caribou exhibit some displacement from roads even with low traffic levels (< 8 vehicles /day) during calving."(717) The final SEIS should present this acknowledgement alongside the other traffic effect information first mentioned to not mistakenly imply that no effects will happen at traffic levels lower than 15 vehicles per hour. Similarly, a new study by the United States Geological Survey (USGS) found that adult female caribou selected areas with lower traffic volumes throughout the summer, with the greatest selection probabilities when traffic was < 5 vehicles per hour. (718) This new scientific information should be incorporated into the final SEIS to better conform to the best-available data. (716) DSEIS at 3-208. (717) DSEIS at 3-219. (718) Severson et al. in press.	All summaries of caribou impacts from development have to be framed in regard to the season in question. During calving even low levels of traffic result in lower density of caribou near roads (e.g., Prichard et al. 2022), however the discussion of traffic levels is usually regarding crossing success during summer. Results of Severson et al. (2023) are discussed in the Final SEIS, but were not published in time for inclusion in the Draft SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	268	Groups are concerned that the treatment of habituation in the draft SEIS still is misleading and inadequate. While the draft SEIS acknowledges that maternal caribou with young calves are a notable exception, it still claims that "observation in existing northern Alaska oil fields indicates that caribou and other terrestrial mammals may habituate to low-level constant noise and oil field activities on roads and pads."(719) This statement is contradicted by the best available science. At the core of this issue may be a mistaken definition of habituation. While the draft SEIS does not specify how it is defining habituation, the examples provided in support of its statement - less displacement after calving and use of roads and pads for oestrid fly relief later in summer - seem to imply a definition of habituation as reduced displacement over the course of a single year. This, however, is not the most meaningful timescale for inferring habituation to infrastructure. Reduced displacement from infrastructure due to changing seasons does not imply habituation, but rather a change of stimuli affecting distribution and behavior. For example, showing less avoidance of roads during oestrid fly harassment does not imply that caribou are habituating to development, but rather points to the strong disruptive effects of flies on caribou behavior. This is reinforced by repeated observations of strong seasonal avoidance of infrastructure by caribou across years.(720) For this reason, it is not changes across seasons but rather changes in response patterns over broader periods of time that reveal evidence of habituation. This is the scientifically accepted approach used in many studies of habituation or acclimation in ungulates.(721) When considered at this scale, there is not evidence for habituation in caribou. Two recent studies of the CAH found consistent patterns of avoidance of infrastructure by adult female caribou in calving, post-calving, and mosquito relief seasons.(722) These behaviors continue to persist after more than 40 years of exposure to development, indicating a clear lack of habituation. This is in line with other studies of caribou and reindeer response to infrastructure which also find a lack of clear evidence of habituation and instead document evidence of impacts.(723) Similar lack of habituation responses have also been seen in other ungulate species in the United States.(724) Johnson et al. conclude that "our work suggests that habituation to industrial development by Arctic caribou is likely to be weak or absent,"(725) directly contradicting the conclusion of the draft SEIS. The draft SEIS correctly affirms in the Subsistence Uses and Resources section that "recent studies do not support the theory that caribou habituate to industrial infrastructure over time."(726) The text of Section 3.3.4 should be revised to match this and to better reflect the best available scientific information on this matter. (719) DSEIS at 3-208. (720) E.g., Johnson et al. 2020. (721) E.g., Aikens et al. 2022; Johnson and Russell. 2014; Sawyer et al. 2017. (722) Johnson et al. 2020; Prichard et al. 2020. (723) E.g., Boulanger et al. 2012; Johnson and Russell. 2014; Nellemann et al. 2010. (724) E.g., Aikens et al. 2022; Sawyer et al. 2017. (725) Johnson et al. 2020 at 410. (726) DSEIS at 3-315.	Caribou reactions to infrastructure vary seasonally and likely as a function of previous exposure to human activity. Seasonal reactions of Central Arctic Herd caribou range from avoidance of areas within ~2-5 km of active roads and pads during calving to use of road and pads for fly relief in mid-summer. There are also indications that caribou with previous exposure have reduced reaction to infrastructure with fewer large delays and deflections around roads and pads (e.g., Smith et al. 1994, Prichard et al. 2020). Reactions to airplanes have also been observed to decline with repeated exposure (e.g., Valkenberg and Davis 1985). Johnson et al. (2020) did not specifically test for habituation, they only reported that caribou continued to use areas near roads less than expected during 3 summer seasons and they did not analyze the oestrid fly seasons when caribou use roads and pads extensively as fly relief habitat. There was no direct comparison with previous data or examination of caribou behavior.
Brisson	Brook	Trustees for Alaska	80131	269	Important caribou calving and post-calving habitat continues to be defined in the draft SEIS as that used by collared caribou "during more than 40% of the years surveyed."(727) This is one of the primary metrics used in the draft SEIS for identifying potential impacts to caribou under the various alternatives.(728) No justification is given for why only areas used in more than 40% of years are important for caribou. A clear biological rationale, grounded in the best-available science, must be stated. For example, why would areas used in one out of every three years not be deemed important? Such a determination of "important" habitat neglects the value of more occasionally used calving and post-calving areas for the PCH, including those where large concentrations have occurred less frequently but in large numbers outside of the areas indicated as "high use." BLM and FWS must explain why an area used lightly in more than 40% of years is considered more important than an area used heavily in 35% or even 20% of years. It is crucial that BLM and FWS be clear on why the various use percentages analyzed in the draft SEIS are biologically meaningful and sufficient for demonstrating impact or lack thereof. (727) DSEIS at 2-15, 2-18, 2-20. (728) See e.g., DSEIS at 3-215, 3-216, 3-21, App. J Tables J-22, J-23, J-27.	The areas that were used less than 40% of years were used in the alternatives analysis for the Final EIS. There is no assumption that areas that are used less than 40% of the time are not important, only that development in are areas that are used more frequently will likely result in larger impacts than areas that are used less frequently. The Draft SEIS also recognized that the calving and postcalving areas are likely to change with climate change as described by Severson et al. (2021) which informed the development of Alternatives D and D2 and is described in text and tables.
Brisson	Brook	Trustees for Alaska	80131	270	In general, treatment of climate change impacts upon caribou in the draft SEIS underestimates likely impacts. The draft SEIS correctly indicates that climate change is predicted to have multiple and sometimes counteracting effects on barren-ground caribou. However, because of this it concludes that "it is difficult to predict the impacts on the Porcupine Caribou Herd and Central Arctic Herd."(729) This diminishes the preponderance of negative impacts expected under a changing climate. The draft SEIS lists one positive potential effect of climate change(730) and about a dozen potential negative effects.(731) There are also other potential negative consequences not mentioned in the draft SEIS, such as sudden pathogen outbreaks that can lead to sudden and large-scale die offs of herbivores, such as was seen in 2016 in Russia when over 2,000 reindeer were killed by anthrax that was apparently exposed by melting permafrost.(732) In 2015, an outbreak of Pasteurella similarly killed off over 200,000 saiga antelope (Saiga tatarica), which calve in large aggregations somewhat similarly to caribou, reducing the global population by over 60%.(733) Warming temperatures may also directly threaten individual caribou survival. While the SDEIS notes that "caribou body condition and population fluctuations have been found to be influenced by large-scale climate oscillations,"(734) this falls short of explicit recognition that warmer summer temperatures, as are expected for the Coastal Plain,(735) have been correlated with higher adult female mortality rates in Canadian caribou.(736) With such a strong preponderance of potential negative effects arrayed against relatively few expected positive effects for cold-adapted caribou, BLM and FWS must clearly articulate reasonably foreseeable negative impacts.	The SEIS does acknowledge that the effect of climate change is likely to be negative as shown by global declines in Rangifer, but it was updated to make that more clear and additional citations were added.
Brisson	Brook	Trustees for Alaska	80131	270	(729) DSEIS at 3-201. (730) Increased access to forage. DSEIS at 3-201. (731) Increased shrub abundance, increased insect harassment, increased parasite incidence, more rapid annual decline in forage quality, increased predator densities and altered distributions, increased wildlife resulting in lower winter lichen availability, increased rain-on-snow events reducing access to forage, increasing energetic demands of acquiring it, and increasing mortality risk, phenological mismatch, earlier mosquito emergence, altered migration conditions due to earlier melting of ice and snow and earlier river breakup. DEIS at 3-201 to 3-202. (732) Golovnev. 2017. (733) Kock et al. 2018. (734) DSEIS at 3-201. (735) DSEIS at 3-201. (736) Russell et al. 2018.	This appears to be part of previous comment. See response to comment 80131-270

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	271	Another way the implications of climate change are downplayed for caribou in the draft SEIS is the treatment of Severson et al. 2021. This recent study led by USGS examined resource selection and habitat use by the PCH and found that the distribution of adult female caribou during the calving and post-calving periods can be predicted by environmental factors like timing of snow melt and greening of vegetation.(738) Projecting these selection patterns into the future based on reasonable climate change scenarios, the authors found predictions of increased use of the Alaskan coastal plain during the calving and post-calving periods. We were pleased to see the draft SEIS mention this study and some of its findings,(739) and especially to see the results mapped(740) and used to define the PCH comprehensive calving and post-calving areas underlying the requirements of Alternative D in Lease Stipulation 6 and elsewhere.(741) Nonetheless, there were several instances where the draft SEIS seems to minimize or obscure the results of the study. For example, Map 3-33, which displays the results of the analyses, is not referenced in the text of Section 3.3.4. Furthermore, the supporting text on the map itself does not reference Severson et al. 2021 but only provides generic references to GIS resources of BLM, FWS, ADFG, and Environment Yukon. Such practices are not in keeping with good data transparency. Instead, the data source needs to be clearly stated and the description on the map should summarize what information is being displayed, going beyond simply "predicted caribou resource use."(742) For example, this could be similar to what is done for Map 3-38, which gives a description of what the map shows and attributes Russell and Gunn 2019 as the data source.(743) (738) Severson et al. 2021. (739) DSEIS at 3-202. (740) DSEIS Map 3-33. (741) DSEIS at 2-15. (742) DSEIS Map 3-33. (743) DSEIS Map 3-38.	The text was updated to reference Map 3-33 and Map 3-33 and to include citation of Severson et al. 2021.
Brisson	Brook	Trustees for Alaska	80131	272	In various places in the text of Section 3.3.4, BLM and FWS should be more specific in describing the findings of Severson et al. 2021 to better convey the potential impacts of the various alternatives under climate change. For example, the text acknowledges that "Severson et al. (2021) estimated that the median date of snowmelt in the area would advance by 8 days between 2012-2018 and the 2050s and the median onset greenness date would advance by 15 days over that time period."(744) While this is important information, without more context and analysis, its importance is not easily understandable to the public. Including Severson et al.'s prediction of a 429% increase in projected suitable habitat in the Coastal Plain program area during calving and a 35% increase during post calving,(745) on the other hand, are much more easily understood and underscore the dramatic importance of the Coastal Plain under predicted climate effects more clearly than simply stating that "climate warming could result in a western shift in concentrated calving areas and more frequent calving in the program area."(746) Similarly, while the text acknowledges that Severson et al. used their models of current habitat selection to predict calving and post-calving distributions in future decades, only the current acreages of suitable calving and post calving area are reported in the draft SEIS.(747) Including the predicted future acreages for the 2050s and their corresponding percent increases would present a fuller picture of the importance of the Coastal Plain for use by caribou and increased potential for conflict with possible future development. We request that the specific percentages of predicted increase in suitable habitat be included in the final SEIS for better transparency. This is also important to better inform conclusions in the ANILCA Section 810 Analysis. (744) DSEIS at 3-202. (745) Severson et al. 2021 at 4553. (746) DSEIS at 3-202. (747) DSEIS at 3-209.	The specific acreages predicted to be used with future climate change based on the modeling of Severson et al. (2021) are included in tables in Appendix K (tables K-24 and K-25) and shown in Map 3-33. Those tables and Map are referenced in the text of Chapter 3 and Appendix B.
Brisson	Brook	Trustees for Alaska	80131	276	The description of impacts specific to Alternatives B and C contains several problematic statements or unsupported conclusions. For example, the draft SEIS states that no surface occupancy (NSO) areas would be "less likely to be subject to lease-specific seismic exploration."(756) This statement is not justified, nor does it clearly derive from the stipulations, required operating procedures (ROPs), or other requirements described for Alternative C. While NSO areas do not allow permanent surface disturbance, they do allow drilling, using horizontal extended reach drilling from nearby leases where surface occupancy is allowed. Based on the description of typical development described in Appendix B, seismic exploration is typically the first step towards identifying where such extended-reach drilling should be conducted.(757) Indeed, the section on alternative-specific impacts under Alternative D clearly states that "seismic exploration could occur on the 765,800 acres available to leasing."(758) According to Table 2-1, 765,800 acres for Alternative D comprises the total across all lease availability classes, including NSO.(759) Thus, it is not reasonable to assume a lower likelihood of seismic exploration in leased NSO areas. This should be removed from the final SEIS. (756) DSEIS at 3-217. (757) DSEIS App. B at B-12. (758) DSEIS at 3-218. (759) DSEIS at 2-2.	Seismic activity is most likely to occur in areas that allow leasing and surface occupancy, but the text has been updated to indicate that seismic activity may occur on areas of NSO.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	277	The text describing impacts for Alternative C also states that in NSO and no leasing areas "there would be no change from Alternative A and no impacts would be expected in these areas for Alternative C" except for possibly increased air traffic.(760) As we pointed out in our comments on the draft SEIS,(761) this is not accurate and does not align with scientific understanding nor with other statements in the draft SEIS. The draft SEIS clearly states that "there would be no direct or indirect impacts on terrestrial mammals from post-lease oil and gas activities under Alternative A."(762) The same cannot be said for NSO or no leasing areas under any of the action alternatives. A first issue with the assertion of no impacts in NSO areas is that it assumes effects of development will end at the boundary of NSO areas. The idea of "edge effects" - that conditions around the edge of a habitat patch will often be different than those in the interior of the patch - has long been recognized in landscape ecology.(763) In the context of the Coastal Plain the concern is that effects occurring in the non-NSO areas will "spill over" into the NSO areas. This phenomenon is affirmed in the description of impacts specific to Alternative C, which states that the area of potential PCH calving displacement based on prior scientific estimates of displacement observed with the CAH (588,000 acres, which represents a minimum displacement distance, as noted above), is larger than the area open to surface occupancy (329,000 acres).(764) This implies impacts and displacement in NSO and no leasing areas. Effects of light, noise, air pollution, visual effects, and more will continue across NSO and no leasing boundaries, making them diverge from conditions under Alternative A. Furthermore, NSO stipulations are subject to waivers, exceptions, and modifications across all action alternatives, and can be subject to ROW and easements such as for pipeline crossings. In these instances, it is clear that impacts would be different than under Alternative A and must be analyzed. BLM and FWS may not claim that no impacts will occur in NSO and no leasing areas. (760) DSEIS at 3-217. (761) 2019 DEIS Comment Letter at 251. (762) DSEIS at 3-204. (763) Forman and Godron. 1981. (764) DSEIS at 3-216.	The text was updated to reflect that effects from adjacent development can impact areas of no leasing and NSO.
Brisson	Brook	Trustees for Alaska	80131	278	The analysis of Alternative C impacts also states that NSO restrictions near the Canning River delta and various rivers "make it unlikely that development would hinder caribou movements in these areas."(765) This claim is subject to the issue noted above with waivers, exceptions, and modifications. The Canning River, in particular, will almost certainly require a pipeline crossing if development proceeds in the Coastal Plain, to connect the oil coming from one or more central processing facilities to the Trans Alaska Pipeline System (TAPS). Similarly, as is noted for Alternative D but similarly applicable here, "it is likely that roads will cross areas with NSO restrictions to access leased areas."(766) These, and any other infrastructure allowed, could have a detrimental affect on caribou and their ability for free movement. This is of special concern for the CAH, which use the Canning River delta in large numbers in some years(767) and which "may also potentially lose or reduce use of the only portion of the primary Central Arctic Herd mosquito-relief habitat that does not currently contain some development."(768) It is also of concern for the PCH, as scientists have mapped concentrated calving and post-calving use by the PCH in the Canning River Delta, Camden Bay, and nearshore areas in past years, all of which could be affected by infrastructure in these areas.(769) Such impacts are considerable and will be insufficiently mitigated by NSO stipulations. (765) DSEIS at 3-217. (766) DSEIS at 3-218. (767) DSEIS at 3-217. (768) DSEIS at 3-205. (769) 2019 DEIS Comment Letter, especially Appendix B.	The text was updated to state that some infrastructure may occur in no leasing or NSO areas due to waivers.
Brisson	Brook	Trustees for Alaska	80131	305	Despite acknowledging this alarming population decline, the draft SEIS does not fully describe the affected environment relating to muskoxen in a way that conveys baseline conditions essential to understanding how oil and gas leasing will impact the species and its habitats.	Muskoxen populations have persisted in the Kuparuk Oilfield and spread west into NPRA, but there is limited literature on impacts of oil development on the species. Few muskoxen will be impacted by development at present because few use the Project Area, but that could change in the future. The SEIS discusses possible impacts to muskoxen and additional text was added.
Brisson	Brook	Trustees for Alaska	80131	306	In the draft SEIS, the BLM and FWS fail to take a hard look at the various impacts of the proposed lease sales and resulting oil and gas development activities on muskoxen and their habitats. Muskoxen are threatened by disturbance, displacement, and habitat degradation from seismic exploration activities and increased air and ground traffic; direct loss of habitat from gravel mining; barriers to movement from facilities, roads, and other infrastructure; increased hunting and poaching associated with increased human presence; increased predation due to increased numbers of predators attracted to human trash and food; and the additive and synergistic effects of climate change. According to the FWS,(849) oil and gas exploration and extraction activities, particularly along river corridors, can cause: - displacement from preferred winter habitat; - increased energy needs related to disturbance and displacement; - decreased body condition of females; - increased incidents of predation; and - decreased calf production and animal survival. (849) U.S. Fish and Wildlife Service, Arctic National Wildlife Refuge, Potential Impacts of Proposed Oil and Gas Development on the Arctic Refuge's Coastal Plain: Historical Overview and Issues of Concern (Jan 17, 2001), available at: https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_1/Arctic/PDF/arctic_oilandgas_impact.pdf .	The text was updated with additional citations.
Brisson	Brook	Trustees for Alaska	80131	307	This information suggests that seismic exploration on the Coastal Plain would risk disturbing and displacing muskoxen, causing additional stress in the winter and early spring that could lead to abandonment of preferred habitat areas and increased mortality. The draft SEIS must address the significant potential impacts of seismic exploration on muskoxen in the Coastal Plain, particularly the animals currently using the program area, and explain how inflicting those impacts on this small population will be consistent with the Refuge purpose of conserving muskoxen.	The text was updated with the addition of USFWS 2001. The SEIS discusses the impacts of seismic activity on muskoxen. The potential impacts of seismic activity on muskoxen will be limited by the limited use of the Project Area by muskoxen. The potential impacts of seismic activity on muskox are discussed in the SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	308	Oil spills can harm muskoxen by contaminating habitat and forage, causing air pollution, and causing disturbance with clean-up activities. Damage to tundra vegetation, including killing off macroflora, could persist for years, even decades. (858) Spills affecting waterways could have very detrimental effects to muskoxen because they congregate in riparian areas during summer months. (858) McKendrick, J.E. and Mitchell, W. 1978. Fertilizing and Seeding Oil-Damaged Arctic Tundra to Effect Vegetation Recovery, Prudhoe Bay, Alaska. Arctic 31(3): 296-304; McKendrick, J.E. 2000. Vegetative Responses to Disturbance. In The Natural History of an Arctic Oil Field: Development and the Biota, J.C. Truett and S.R. Johnson (eds.). Academic Press, New York, New York. Muskoxen are difficult to study, given the harsh conditions of where they live. But studies of oil spill impacts to cattle may be comparative. (859) In the final SEIS, BLM and FWS must analyze the impact of oil spills and contact with contaminants on muskoxen.(859) U.S. Department of Interior, Bureau of Land Management, Draft Environmental Impact Statement for the National Petroleum Reserve - Alaska, Integrated Activity Plan, Vol. 2, Chapter 4 (sections 4.1 to 4.6) (March 2012) at 195; Edwards, W.C. 1985. Toxicology Problems Related to Energy Production. Veterinary and Human Toxicology 21: 328-337; Rowe, L., J. Dollahite, and B. Camp. 1973. Toxicity of Two Crude Oils and of Kerosene to Cattle. Journal of American Veterinary Medicine Association 16: 60-66.	The potential effect of oil spills on muskox will be discussed, although given the low numbers of muskox using the program area, the risk of muskoxen encountering oil spills may be limited.
Brisson	Brook	Trustees for Alaska	80131	309	Roads, pipelines, and other infrastructure can cause movement barriers, habitat fragmentation, and habitat loss.(860) Gravel mining associated with oil and gas facility and road construction can cause harm from habitat loss, water loss, disturbance, and displacement. (861) Mining often occurs in river floodplains, where muskoxen congregate in the summer. Vegetation disturbance could lead to encroachment of non-native vegetation, affecting forage availability. The draft SEIS fails to assess the impacts of each of these activities on muskoxen; these impacts should be thoroughly evaluated in the final SEIS. (860) Garner, G.W., and P.E. Reynolds (eds.). 1986. Impacts of Further Exploration, Development and Production of Oil and Gas Resources. In Arctic National Wildlife Refuge Coastal Plain Resource Assessment, Final Report. Baseline study of Fish, Wildlife, and Their Habitats, Volume II. U.S. Department of the Interior, Fish and Wildlife Service, Anchorage, Alaska. Clough, J.G., A.C. Christensen, and P.C. Patton (eds.). 1987. Arctic National Wildlife Refuge, Alaska, Coastal Plain Resource Assessment. U.S. Department of the Interior, Washington D.C. (861) Id.	The potential effect of gravel mining on muskox were added, although given the low numbers of muskox using the program area the risk of muskoxen being disturbed or displaced by gravel mining may be limited.
Brisson	Brook	Trustees for Alaska	80131	310	Increased human presence and access to the region due to an increase of roads can lead to increased hunting and poaching of muskoxen. Hunting pressure has increased in other areas inhabited by muskoxen and has had potentially significant impacts on abundance. Not only does hunting cause direct mortality, but the targeting of males for trophies can decrease the resiliency of whole herds. (862) Males play a significant role in defensive behavior in the presence of predators. The loss of males can lead to increased calf losses. The presence of humans caused general disturbance and energy-depleting responses as described above. Oil and gas development will increase helicopter and plane traffic, road traffic, and off-highway vehicle use.(863) The draft SEIS fails to assess the impacts of each of these activities on muskoxen; these impacts should be thoroughly evaluated in the final SEIS. (862) Schmidt, J.H., and Gorn, T.S.. 2013. Possible secondary population- level effects of selective harvest of adult male muskoxen. PLoS ONE 8(6):e67493; Berger, J. 2017. The Science and Challenges of Conserving Large Wild Mammals in 21st-Century American Protected Areas." Science, Conservation, and National Parks: 189. (863) Murphy, S.M. and Lawhead, B.E. 2000. Caribou. In The Natural History of an Arctic Oil Field: Development and the Biota, J.C. Truett and S.R. Johnson (eds.). Academic Press, San Diego, California.	The potential effect of hunting on muskoxen were added although legal harvest of muskoxen is heavily regulated by ADFG and few muskoxen currently use the Program Area.
Brisson	Brook	Trustees for Alaska	80131	311	Climate change is already affecting muskoxen habitat and is likely affecting the health of individuals. Warm, wet years can be detrimental to muskoxen populations, as shown by past research conducted in Greenland and Canada. (864) More erratic weather conditions in the Arctic are likely also contributing to mortality and morbidity. For example, rain-on-snow (ROS) events can cause direct mortality by freezing animals in the path of an extreme occurrence. Such an occurrence caused the sudden death of over 50 muskoxen in northwestern Alaska. (865) These events can also create icing conditions that prevent access to forage, and this may have an adverse impact on the long-term health of individuals, especially if they experience food deprivations as juveniles. (866) ROS events are likely to increase as climate warming increases. New diseases appearing in the northeastern population of muskoxen may be correlated with warming temperatures.(867) Illness causes mortality and can make animals more vulnerable to predation. The draft SEIS fails to assess the impacts of climate change on muskoxen; the impacts of climate change on muskoxen should be thoroughly evaluated in the final SEIS. (864) Berger, J. 2017. The Science and Challenges of Conserving Large Wild Mammals in 21st-Century American Protected Areas. Science, Conservation, and National Parks: 189. (865) Dau, J. 2005. Two caribou mortality events in northwest Alaska: Possible causes and management implications. Rangifer 25: 37-50. (866) Berger, J., Hartway, C., Gruzdev, A., and Johnson, M. 2018. Climate Degradation and Extreme Icing Events Constrain Life in Cold-Adapted Mammals. Scientific Reports 8(1): 1156. (867) Kutz S.J., Jenkins, E.J., Veitch, A.M., Ducrocq, J., Polley, L., Elkin, B., Lair, S. 2009. The Arctic as a model for anticipating, preventing, and mitigating climate change impacts on host-parasite interactions. Vet Parasitol 163: 217-228; Kutz SJ, Bollinger T, Branigan M, Checkley S, Davison T, Dumond M, Elkin B, Forde T, Hutchins W, Niptanatiak A, et al. 2015. Erysipelothrix rhusiopathiae associated with recent widespread muskox mortalities in the Canadian Arctic. Can. Vet. J. 56: 560-563; Afema, J.A., Beckmen, K.B., Arthur, S.M., Huntington, K.B., and Mazet, J.A.K. 2017. Disease complexity in a declining Alaskan muskox (Ovibos moschatus) population. Journal of Wildlife Diseases 53(2): 311-329.	The potential effect of climate change on muskoxen are discussed in the Affected Environment section of section 3.3.4 Terrestrial Mammals, although few muskoxen currently use the Program Area.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	312	One purpose of the Arctic Refuge identified by ANILCA is to conserve Dall sheep (Ovis dalli dalli).(868) The BLM has not evaluated the impacts of the oil and gas program on the species in light of this management purpose.	According to USFWS (2018), "Dall's sheep do not occur in the 1002 Area but are found in the Brooks Range Mountains to the south, where the species reaches its northernmost geographic extent. The eastern Sadlerochit Mountains, near the southern border of the 1002 Area, contains habitat suitable for sheep, and the species has occasionally been seen there." If Dall's sheep occur in eastern Sadlerochit Mountains, they would be in an areas with low oil potential. USFWS (2018) Rapid- Response Resource Assessments and select References for the 1002 Area of the Arctic National Wildlife Refuge in anticipation of an Oil and Gas Exploration, Leasing and Development Program per Section 20001(c)(1) of PL 115-97 of 2017 Title II Sec 20001.
Brisson	Brook	Trustees for Alaska	80131	312	Additionally, notably absent is a map depicting the distribution range of Dall sheep, including a map that shows Dall sheep distribution by alternative. BLM and FWS should include such maps in the final SEIS so that the public can better understand the relationship between the oil and gas program and its potential impacts to Dall sheep. (868) ANILCA § 303(2)(B)(i).	According to USFWS (2018), "Dall's sheep do not occur in the 1002 Area but are found in the Brooks Range Mountains to the south, where the species reaches its northernmost geographic extent. The eastern Sadlerochit Mountains, near the southern border of the 1002 Area, contains habitat suitable for sheep, and the species has occasionally been seen there." If Dall's sheep occur in eastern Sadlerochit Mountains, they would be in an areas with low oil potential. USFWS (2018) Rapid- Response Resource Assessments and select References for the 1002 Area of the Arctic National Wildlife Refuge in anticipation of an Oil and Gas Exploration, Leasing and Development Program per Section 20001(c)(1) of PL 115-97 of 2017 Title II Sec 20001.
Brisson	Brook	Trustees for Alaska	80131	313	The draft SEIS made no attempt to analyze the effects of climate change on the regional population. Dall sheep are sensitive to extreme weather events and changes in snow conditions.(874) Dall sheep are susceptible to parasites and bacterial and viral diseases(875) that may be a growing threat with climate change. (876) The final SEIS should thoroughly analyze the potential impacts of all oil and gas activities on Dall sheep, particularly in light of the climate change. (874) AXYS Environmental Consulting Ltd. 2005. Problem Analysis of the Stone's Sheep Situation in Northeastern British Columbia. Draft Report; Sivy, K.J., Nolin, A.W., Cosgrove, C., and Prugh, L. 2018. Critical snow density threshold for Dall sheep (Ovis dalli dalli). Canadian Journal of Zoology (ja); van de Kerk, M., Verbyla, D., Nolin, A.W., Sivy, K.J. and Prugh, L.R., 2018. Range-wide variation in the effect of spring snow phenology on Dall sheep population dynamics. Environmental Research Letters. (875) AXYS Environmental Consulting Ltd. 2005. Problem Analysis of the Stone's Sheep Situation in Northeastern British Columbia. Draft Report. (876) Jenkins, E.J., Veitch, A.M., Kutz, S.J., Hoberg, E.P. and Polley, L., 2006. Climate change and the epidemiology of protostrongylid nematodes in northern ecosystems: Parelaphostrongylus odocoilei and Protostrongylus stilesi in Dall's sheep (Ovis d. dalli). Parasitology 132(3):387-401; Aleuy, O.A., Ruckstuhl, K., Hoberg, E.P., Veitch, A., Simmons, N. and Kutz, S.J., 2018. Diversity of gastrointestinal helminths in Dall's sheep and the negative association of the abomasal nematode, Marshallagia marshalli, with fitness indicators. PloS one 13(3):p.e0192825.	According to USFWS (2018), "Dall's sheep do not occur in the 1002 Area but are found in the Brooks Range Mountains to the south, where the species reaches its northernmost geographic extent. The eastern Sadlerochit Mountains, near the southern border of the 1002 Area, contains habitat suitable for sheep, and the species has occasionally been seen there." If Dall's sheep occur in eastern Sadlerochit Mountains, they would be in an areas with low oil potential. USFWS (2018) Rapid- Response Resource Assessments and select References for the 1002 Area of the Arctic National Wildlife Refuge in anticipation of an Oil and Gas Exploration, Leasing and Development Program per Section 20001(c)(1) of PL 115-97 of 2017 Title II Sec 20001.
Brisson	Brook	Trustees for Alaska	80131	514	Regarding the Central Arctic Herd, the agencies conclude potential impacts are expected to be low for all action alternatives.(1394) This statement is not justified, nor is it clearly derived from the agencies' caribou analysis in Section 3.3.4. It also ignores recognition elsewhere in the draft SEIS that the Central Arctic Herd uses the western part of the Coastal Plain, in large numbers in some years.(1395) That area has the highest resource potential and is the first place where development is expected under the Reasonably Foreseeable Development Scenario.(1396) While we do not know with certainty the population consequences of the Central Arctic Herd losing access to, or reducing use in, "the only portion of the primary Central Arctic Herd mosquito-relief habitat that does not currently contain some development,"(1397) such an outcome could have severe consequences for the herd and thus needs more thorough consideration. Insect harassment has been shown to have a negative effect on caribou populations,(1398) leading to reduced survival(1399) and lower birth rates in years following high insect activity.(1400) It can also threaten the ability of caribou to replenish depleted body stores, as prolonged exposure to insects can shift lactating female caribou from positive to negative energy balance.(1401) This makes it very important that caribou be able to access insect relief habitat and move between insect relief areas and quality forage habitat as conditions change. Thus, the consequences of potentially losing this access must be given serious consideration. (1394) Id. App. E at E-4. (1395) Id. at 3-217. (1396) Id. App. B at B-14. (1397) Id. at 3-205. (1398) Dau. 1986. (1399) Johnson et al. 2022. (1400) Johnson et al. 2022; National Research Council. 2003. (1401) Fancy. 1986.	The Final SEIS has been updated to include more discussion of impacts on the Central Arctic Herd. The impacts on the Central Arctic Herd are further detailed in Alternative D2, which focuses on the area of the Coastal Plain with the highest hydrocarbon potential, which is also used by the herd.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Heynen	Mitch	Government of Yukon	80159	1	Vulnerability of the Porcupine Caribou Herd to oil and gas leasing in the Coastal Plain The Government of Yukon and its partners commissioned the Russell and Gunn (2019) report to evaluate the vulnerability and risk of draft SEIS alternatives, and to understand the consequences of the oil and gas leasing program through time. That report clearly showed that the herd was projected to decline faster and grow slower under any proposed alternatives. That work showed that climate effects were likely the predominant factor governing the PCH. However, the key vulnerability demonstrated by that work was that population increases would diminish, and during periods of average or poor climate conditions, the herd's potential to decline and magnitude of those declines would be greater. In effect, the herd would not grow to its potential and would be at a greater risk of decline. The PCH is known to grow and decline slowly (e.g., 3.7% annual growth rate; Caikoski 2018). As a result, its ability to recover through high growth rates is unrealistic. This is concerning when we consider the consequence of a decline caused by habitat alterations as a result of the oil and gas leasing program. A shift in population demographics could result in the population losing more animals in a decline than can be made up in a growth phase, resulting in both a reduced herd size and lost opportunities for subsistence users. Either of these outcomes would result in the Arctic National Wildlife Refuge failing to meet three of its primary purposes: 1) considering wildlife diversity, 2) fulfilling international treaty obligations, and 3) maintaining subsistence opportunities. The outcome would also lead to a failure of the 1987 Agreement Between the Government of Canada and the Government of the United States of America on the Conservation of the Porcupine Caribou Herd, by failing to meet subsistence opportunities.	The population projections of Russell and Gunn (2019) were discussed in the SEIS. and text discussing the results was added to the environmental consequences sections of the alternatives where they apply.
Heynen	Mitch	Government of Yukon	80159	6	Several pertinent and significant new publications have become available respecting the influence of industrial activities on migratory caribou. This includes recent publications on the Porcupine and CAH. The draft SEIS does a good job of incorporating several of these into the text of the main chapter; however, most of this information fails to be considered during impact assessments offered in the document. Specifically: - The draft SEIS continues to maintain that calving displacement only occurs following the first three weeks following calving. However, Johnson et al. (2020) clearly show through detailed analysis of the CAH that effects are measured out to at least four weeks following calving. This finding speaks to the need to consider not just the calving period but at least the first month of a caribou's life in designing mitigation. Alternative D is the only current Alternative that does this. - Johnson et al. (2020) demonstrate that a measurable ZOI is present during calving, post-calving and insect harassment periods at distances of 5, 2 and 1 km, respectively. Note that while this paper and distances should be identified in the draft SEIS, we believe, as stated above and acknowledged in the draft SEIS, that these distances are likely conservative for the PCH for the reasons listed above (e.g., naive to disturbance, hunting, etc.). - Analysis of CAH relative to traffic levels has also identified that adult female cows respond to much lower traffic volumes than identified in the draft SEIS, as previously identified in the Alaska oil fields. Severson et al. (in press) found caribou habitat selection was highest when traffic volumes were <5 vehicles/hr during the post-calving and insect harassment period, contrary to previous thresholds of 15 vehicles/hr. The draft SEIS should be updated to include these findings, and thresholds altered where appropriate. - The draft SEIS continues to assert that caribou can habituate to low-level constant noise and oil field activities. However, there is no data available that demonstrates this effect, while Johnson et al. (2020) demonstrates that evidence for habituation is either weak or totally absent in their analysis. Unless evidence is provided, references that caribou habituate to disturbances should be removed from the draft SEIS; Johnson et al. (2020) referenced how caribou do not habituate to these disturbances. - The draft SEIS does a much better job of describing and implementing some aspects of climate effects on the PCH; however, it could go further by describing mitigations and strategies consistent with the results of recent published scientific studies. For example, the main text of the report does a reasonable job of describing the results of Severson et al. (2021), but the application of the knowledge in the report can be clearer. For example, the draft SEIS fails to provide the magnitude of shift in range use expected under future climate scenarios for the PCH (i.e., 429% increase in suitable calving habitat and a 35% increase in suitable post-calving habitat with comparable declines in the other portions of the herd's ranges).	Results of Severson et al. 2023 were added. The 15 vehicles/hour traffic rate from previous research was based on direct observation of caribou (not just collar data), and was an estimated threshold above which corridor crossing success diminished, it was not used as a threshold of behavioral disturbance. Severson et al. (2023) used 2 years of GPS data and found that the probability that a given caribou movement would cross a road was lower for roads with higher levels of modeled traffic estimates, but their data showed that over 12% of caribou movements (2 hours movements) crossed a road during the mosquito and oestrid fly seasons (caribou crossed roads ~1.5 times per day) and no estimates of deflection distance or delay times were given. There was some estimated avoidance of areas with high traffic for some seasons, distances to roads, and insect activity combinations. Johnson et al. (2020) did not test for habituation, but inferred a lack of habituation based on results of an analysis of GPS location that showed some decrease in caribou density near roads compared to expected density based on modeled estimates of expected density indicating that caribou still avoided areas near roads after approximately 40 of exposure to development. Johnson et al. (2020) did not analyze caribou movements during the oestrid fly season when caribou frequently use roads and pads for insect relief or directly compare caribou behavior to caribou behavior soon after development.
Heynen	Mitch	Government of Yukon	80159	7	A significant issue with the existing draft SEIS is that sections detailing impacts on PCH are not based on quantitative evidence and appear largely subjective. As risk is a product of probability and consequence, we believe that an explicit linkage to evidence is required. Thankfully, significant bodies of work are available for PCH to ensure an objective and quantitative impact assessment is completed within the draft SEIS. First, we must evaluate probability, which is provided for by understanding the herd's current and past distributions: - As stated above, the current calving and post-calving ranges are described using the frequency of use data layers provided by our government. We have outlined the flaws in how this data has been used in this assessment. As a first step, updating how this information is displayed, described, and used will help ensure that the current and past distribution of the herd is properly contextualized in the SEIS, ensuring current probabilities of conflict are accurate. - Next, Severson et al. (2021) provide us with plausible future scenarios based on conservative climate scenarios (i.e., it's possible we could see far greater use of the project area than forecast). Contextually, we see a shift from the east to the west into the project area that is not currently described in the draft SEIS. This shift amounts to a significant increase in use during the calving period specifically, but also an increase during post-calving. When evaluating a range-wide shift and during the post-calving period, it is worth noting that use of habitats further east declines significantly. Although the area used will not increase as significantly as for the calving period, the importance of this increase is significant. The impact assessment must make this aspect of the probability of conflict explicit and based on evidence.	Chapter 3 of the SEIS describes the current and calving distribution of the Porcupine Caribou Herd as well as projections of changes in the calving and postcalving distribution with climate change based on Severson et al. (2021). Updated data on more recent Porcupine Caribou Herd distributions was incorporated as available.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Heynen	Mitch	Government of Yukon	80159	8	The second aspect of risk is consequence. Two assessments have evaluated this aspect of the PCH quantitatively: Griffith et al. (2001) and Russell and Gunn (2019). We will focus on the latter as that work builds on Griffith et al. and completes actual quantitative models describing consequences of effects. This latter body of work is the only quantitative body of work that we are aware of that completes a quantitative impacts assessment for PCH of the various alternatives. - Russell and Gunn (2019) find that the consequences of oil and gas development on the Coastal Plains are significant, regardless of the scenario chosen. While the current Alternatives vary from those available in the original EIS, Alternatives B and C in the draft SEIS are nearly identical to Alternatives proposed in the original. - Models in Russell and Gunn (2019) contain conservative estimates of the impacts to PCH from the oil and gas leasing program. We will address comments found in the draft SEIS below; however, we'll point out that: - The impact of hunting activities within the project area is not included in models. As noted above, the addition of hunting will lead to a significant increase to the ZOI, and thus we can expect a much greater impact, as demonstrated by Griffith et al. (2001) and Russell and Gunn. - The relationship between displacement and predation is not accounted for in their models. In effect, the herd is likely to be displaced into suboptimal habitats, leading to decreased herd nutrition and increased predation rates of calves (Griffith et al. 2001). This is not explicit in the models; thus, the impacts are reduced. - Climate change scenarios included in the report did not consider future distribution scenarios of the herd. Models developed by Severson et al. (2021) demonstrate a significant increase in the importance of the oil and gas leasing area for PCH. As a result, the probability of effects is greatly increased to the herd. This effect is not quantified in Russell and Gunn, again resulting in under predictions of the effects of the oil and gas leasing program. - We note that Don Russell and Anne Gunn are, at a global scale, two of the most accomplished and respected caribou biologists, having devoted their lives to studying and modelling caribou behaviour using quantitative data whenever and wherever possible. The main body of the draft SEIS extensively references Russell and Gunn (2019). Unfortunately, the impact assessment dismisses or fails to draw upon the quantitative and objective work presented in the report, despite referencing it throughout the main body of the report. We reiterate that Russell and Gunn (2019) is the only modern impact assessment completed on PCH and should be considered the authoritative source of information concerning impact assessment for this herd, and oil and gas development on the Coastal Plain. To the best of our knowledge, no other objective assessment based on quantitative data is available at this time. While we agree that several assumptions exist in this report, well-described assumptions are common in all models. On the other hand, subjective assessments are inherently based on assumptions that are not explicit or necessarily based in quantitative evidence. The draft SEIS impact assessment is subjective based on our review. We recommend that the impact assessment be rewritten to explicitly reflect the findings of this report and other evidence and objectively draw conclusions supported by this literature. Specifically, we note that the impact assessment of Alternative B found in the draft SEIS is problematic. An almost exact evaluation of this alternative was completed in the Russell and Gunn, and findings show an increased likelihood of future declines by 17-18%. Further, results from that report that declines would be followed by much slower than expected growth point to an overall loss of resilience to the herd. When combined with the conservative nature of Russell and Gunn's models, we believe that this alternative would fail to meet Purpose 1, 2 and 3 of the Arctic National Wildlife Refuge, and would also likely fail to meet the purposes of the 1987 Agreement Between the Government of Canada and the Government of the United States of America on the Conservation of the Porcupine Caribou Herd. At this time, we are unable to evaluate the impacts of alternatives C or D as neither are properly assessed in the draft SEIS. We do believe the impacts of either are significantly less than Alternative B; however, the magnitude of changes and the overall differences remain unknown.	Discussion of the population projections of Russell and Gunn (2019) were added to the environmental consequences sections as applicable. We do note that this comment suggests that the impact of development will be to displace calving caribou from areas around development as has been repeatedly observed for the Central Arctic Herd and discussed at length in the SEIS, this displacement is at odds with the assumptions of the model in Russell and Gunn (2019) which assumes that caribou distribution will be similar after development but the time spent feeding will decline. It is not clear how violations of that important assumption impact the population projections of the model. As noted in Russell et al. (2021), developing a quantitative model of impacts if movement patterns changed is difficult, the impacts from calving displacement may well be largely than the predicted model impacts from Russell and Gunn (2019) and Russell et al. (2021), but there is no easy way to quantify that comparison. The predicted declines in calf survival as a result of displacement during calving outlined in Griffith et al. (2002) and Russell and Gunn (2019) are discussed in the SEIS.
Heynen	Mitch	Government of Yukon	80159	9	Mitigation of effects remains uncertain, and thus we remain uncertain whether impacts can be avoided. Although significant data has been collected in Alaska with respect to caribou in oil and gas fields, very little of that information has been analyzed or published. Recent publications that have evaluated the effects of oil and gas developments on caribou have found that long-standing mitigations aren't as effective as once thought (e.g., Johnson et al. 2020, Severson et al. in press). Yet what data is available and analyzed is limited to several oil and gas fields and the CAH. Despite the dearth of information on CAH, what is more problematic is that we do not know how appropriate these mitigations will be for PCH. Significant differences between these herds and their habitats call into question whether mitigations (if effective for CAH) will remain so for PCH. Some of these important differences include: - The sheer size of the PCH relative to the CAH. The former herd is an order of magnitude larger. - The densities of the PCH that are achieved on the calving ground are five times higher than CAH and during aggregations, the PCH can achieve aggregations in excess of 100K caribou, which are far larger than the CAH population has ever been. - The ability of the CAH to space away due to the open geography of their habitat as opposed to the constricted Coastal Plains of the PCH. - The importance of the PCH calving and post-calving grounds within the herd's annual nitrogen uptake is far greater relative to the CAH. Nitrogen uptake is a critical aspect of milk production by parturient cows and reductions in access to nitrogen will result in reduced calf survival. - Hunting was not permitted within the CAH range where mitigation evaluation occurred, whereas it is allowed within the proposed oil and gas leasing program. As noted throughout this report, hunting from program roads and infrastructure will greatly increase the response caribou have to those features. As a result of these differences and the limited information available on the effectiveness of mitigation, it is impossible to know whether effects identified in the program can be successfully mitigated. If these effects cannot be mitigated, then impacts will remain adverse, significant and negative for the herd.	The differences between the herds with regards to potential impacts from development in areas used for calving are discussed in the SEIS.

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Heslep	Alison	-	80164	22	#8 Ch/Sec/Sub-sec 3.3.4 Title Direct and Indirect Impacts, Magnitude of Impacts Comment(s) The draft SEIS describes the type, context, and duration of generalized potential effects (see Table 3-36) but does not assess the magnitude of those potential effects. Recommendation(s) The final SEIS should assess the magnitude of the potential effect on valued resources under each Alternative.	Magnitudes are often difficult to assign for some potential impacts, but the potential environmental consequences are described in text for main impacts.
Heslep	Alison	-	80164	23	#9 Ch/Sec/Sub-sec 3.3.4 Title Terrestrial Mammals Comment(s) The GNWT believes the PCH will be particularly vulnerable to oil and gas development because of the following: - Low maximal growth rates of the PCH herd (5% or less per year). - (As already noted in the draft SEIS), the herd calves where the best spring conditions allow, and early calf survival is 10% higher than average when the herd calves in the Coastal Plain. - A very small change in female survival (5%) moves the herd from an increasing population trajectory to a decreasing trend. - "...low productivity suggests factors that affect cow or her calf's survival will have a disproportionate impact in limiting herd growth or exacerbating a herd decline." (Russell and Gunn (2019) p. 15). - The over-riding conclusion from Russell and Gunn's (2019) scenarios was that in all model runs of all starting population sizes and climate conditions, development caused the herd to decline faster and grow slower, thus potentially leading to a tipping point that risks a population losing more animals in a decline phase than can be made up in a growth phase. The data and modeling appear to indicate that the PCH's success can, at least partially, be attributed to the value of an undisturbed Coastal Plain, that the herd has limited annual growth potential, and that any development risks tipping the sensitive demographic variables into values that make it difficult for the herd to recover from natural cycles. Recommendation(s) The final SEIS should outline why and how the PCH will likely be unusually vulnerable to oil and gas development and the value an undisturbed Coastal Plain will have in the success of the PCH.	The predicted population changes from Russell and Gunn (2019) as well as differences between the Porcupine Caribou Herd and Central Arctic Herd are discussed in the SEIS. The importance of the calving grounds was an important component in the comparison of alternatives.
Heslep	Alison	-	80164	24	#10 Ch/Sec/Sub-sec 3.3.4 Title Cumulative Impacts Comment(s) This subsection contains a qualitative assessment of the cumulative impacts of different threats to the PCH and provides details of quantitative analyses from studies examining the combined effects of development and climate change, which could result in PCH declines. However, that section did not examine appropriate mitigation and monitoring measures for managing cumulative impacts on the PCH. Appendix F outlines past, present, and reasonably foreseeable future actions. The assessment area includes the Western Canadian Arctic and identifies Canadian subsistence users as a category of impact. While it does not specify Canadian development projects within the PCH range, it does reference climate change. The area analyzed for PCH impact was its annual range. Recommendation(s) Elaborate in the final SEIS how the Lease Stipulations under each Alternative contribute to minimizing cumulative impacts on the PCH.	Text on comparisons among alternatives was added to the cumulative impacts section of the Terrestrial Mammals section.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	24	The Tribes find no comfort in the SEIS statement, "Many mitigation methods for oilfield design have been implemented and studied in the range of the Central Arctic Herd (Cronin et al. 1994; Murphy and Lawhead 2000; Lawhead et al. 2006) and many of these design modifications are required under ROP 23."(97) The Tribes contend that the clearest lesson we learned from development and the Central Arctic Herd is not to rely only on on-site mitigation, but to institute strict harvest management to offset the impacts caused by development. Ironically, wildlife conservation and maintaining subsistence hunting are two of the purposes of the Arctic Refuge. (97) Draft SEIS at p. 3-219	The SEIS compares potential impacts to caribou, including decreased population size, among alternatives based on available data.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	26	-The Porcupine Caribou Herd has lower population growth rates and productivity (Russell and Gunn 2019), and the Porcupine Caribou Herd may be more dependent on summer forage than the Central Arctic Herd (Russell and Gunn 2019). - Movements and demography of the Porcupine Caribou Herd are different from the Central Arctic Herd. -Concentrated calving density of the Porcupine Caribou Herd is much higher than the Central Arctic Herd. -The Porcupine Caribou Herd is at a historic high population (Caikowski 2020(99)). (99) Caikowski, J. R. (2020). Porcupine caribou herd management report and plan, Game Management Unit 25A, 25B, 25D, and 26C: Report period 1 July 2012-30 June 2017, and plan period 1 July 2017-30 June 2022. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-2020-22, Juneau, Alaska.	Differences between the Central Arctic Herd and Porcupine Caribou Herd as discussed in Russell and Gunn (2019) are outlined in the SEIS.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	27	-Some hunting by local residents [of the Porcupine Caribou Herd] is likely to occur from roads in the program area. -The [Arctic Coastal Plain] is much narrower in the program area than near the Central Arctic Herd calving range. -Alternative calving areas next to the Porcupine Caribou Herd calving grounds contain less high-quality forage, higher predator densities, and different climatic conditions, and they exhibit more topographic relief than do the current Porcupine Caribou Herd calving grounds (Clough et al. 1987(100); Griffith et al. 2002; Russell and Gunn 2019). (100) Clough, N. K., P. C. Patton, and A. C. Christiansen, editors (1987). Arctic National Wildlife Refuge, Alaska, Coastal Plain Resource Assessment: Report and Recommendation to the Congress of the United States and Final Legislative Environmental Impact Statement. Vol. 1. US Fish and Wildlife Service, US Geological Survey, and Bureau of Land Management, Washington, DC., USA, https://pubs.usgs.gov/fedgov/70039559/report.pdf . All the reasons presented above indicate that the Porcupine Caribou Herd would be more vulnerable to the negative impacts of development than the Central Arctic Herd. Additionally, the draft SEIS states that "we do not know what the herd size of the Central Arctic Herd would have been in the absence of development,"(101) i.e., it could have been much larger. (101) Ibid.	Differences between the Central Arctic Herd and Porcupine Caribou Herd, including differences in the likelihood of hunting along roads in the Project Area, are outlined in the SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	28	The idea of the herd-level impacts of development on the Central Arctic Herd by, as Griffith et al. (2002) proposed, comparing productivity of the herd with the adjacent Teshekpuk Lake Herd as both were of similar size 25 years ago and both occupy a relatively wide portion of the Arctic Coastal Plain (unlike the restrictive narrow strip in the Porcupine Caribou Herd range). Griffith et al. (2002) states that "In the 1990s the growth rate of the Central Arctic herd may have slowed after roads and pipelines expanded in the developed zone and the concentrated calving area in the developed zone shifted south-southwest..."(102) During that period, "exponential growth rate of the Teshekpuk Lake herd was approximately twice as great as the exponential growth rate estimated for the Central Arctic herd."(103) (102) Griffith et al., op. cit. p. 30. (103) Ibid. (emphasis added) In fact, the Alaska Department Fish and Game, based its management goals for the Central Arctic Herd "on the hypothesis that displacement [from development], if of sufficient magnitude, would be harmful to the [Central Arctic Herd]."(104) Russell and Gunn (2019) found that the Alaska Department of Fish and Game was offsetting the impacts of development on the productivity of the Central Arctic Herd by the following measures: (104) Lenart, E.A. (2003). Unit 26A and B caribou management report. Pages 304-326 in C. Healy, editor. Caribou management report of survey and inventory activities 1 July 2000 - 30 June 2002. Alaska Department of Fish and Game. Juneau, Alaska. p. 305.	The population trajectories of the Central Arctic Herd and TCH were very similar from the 1970s to their peaks in about 2010, but it is difficult to draw inferences regarding development from population trajectories of different herds. These are two different herds using different ranges, the TCH largely winters on the Coastal Plain while the Central Arctic Herd migrates to the Brooks Range, and there also is some mixing among North Slope herds (Prichard et al. 2020).
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	29	-Maintaining necessary restrictions on caribou hunting. -Providing for continued caribou hunting at a level that does not significantly affect population dynamics of the Central Arctic Herd, especially in areas away from development. -Determining the influence of current harvest levels on the Central Arctic Herd. -Minimizing harvest of cows from the Central Arctic. -Maintaining a bull:cow ratio of at least 40:100. Further, Griffith et al. (2002) lists five reasons why the impact of development on Central Arctic Herd productivity might be a best-case scenario compared to the potential impact of development on the productivity of the Porcupine Caribou Herd: -Only 50% of the Central Arctic Herd were using the development zone. -The shift of Central Arctic Herd calving due to development was into other parts of the Coastal Plain; that option is not available for the Porcupine Caribou Herd. -The expansion of development west to Kuparak occurred during favorable environmental conditions. -The Central Arctic Herd is less dependent on the calving ground for its annual nitrogen budget than the Porcupine Caribou Herd which is three times more dependent. -Central Arctic Herd density on the calving ground is low; the Porcupine Caribou Herd has five times higher density on its calving grounds. Russell adds a sixth reason which has implications for Porcupine Caribou Herd subsistence hunters: -During development expansion, the Alaska Department of Fish and Game implemented intensive hunting restrictions to offset the impacts of development on the Central Arctic Herd and it could do the same for Porcupine Caribou Herd.	Differences between the Central Arctic Herd and Porcupine Caribou Herd and how they may respond to development on the calving range are discussed in the SEIS.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	30	The draft SEIS states that "Many mitigation methods for oilfield design have been implemented and studied in the range of the Central Arctic Herd (Cronin et al. 1994; Murphy and Lawhead 2000; Lawhead et al. 2006) and many of these design modifications are required under ROP 23."(105) (105) Draft SEIS at 3-219. This is an overstatement of the amount of study, however, as pipeline mitigation is based on a few, dated studies for the Central Arctic Herd (Cronin et al. 1994; Murphy and Lawhead 2000; Lawhead et al. 2006) despite 50 years of opportunity to rigorously test the effectiveness of mitigation. As examples, recent studies have resulted in an increase in the size of the Zone of Influence (2.49 miles in the FEIS to 3.11 miles(106) in the draft SEIS), and decreased the traffic frequency that would cause disruption of caribou movements (15 vehicles/hour to 5 vehicles/hour). Thus, any of the earlier studies that established the earlier thresholds were flawed or caribou are becoming less tolerant to disturbance. (106) Draft SEIS at 3-208.	It is not the case that the only 2 possibilities are that earlier studies were flawed or caribou are becoming less tolerant to disturbance. A third possibility is that the 2 most recent papers, based on a small sample size of GPS data, are flawed or do not give a complete picture. There have been extensive behavioral and distributional studies of how Central Arctic Herd caribou have responded to infrastructure over the last 50 years (although many are in unpublished reports), the response to development should be assessed in light of all the available literature, not solely based on two recent papers using a small subset of available data and looking at GPS locations, not actual caribou behaviors. The results of Johnson et al. (2020) are largely in line with previous studies showing avoidance of active infrastructure during calving and lower levels of displacement during other seasons when caribou do cross roads and pads frequently (Prichard et al. 2020) but caribou may spend less time and move faster near roads (e.g., Murphy and Curatolo 1987). In addition, Johnson et al. (2020) included oilfield areas that did not have modern mitigation measures in their analysis.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	31	The Tribes contend that, unfortunately, there are surprisingly few lessons to be learned about mitigation effectiveness during the 50 years of development on the North Slope. The bottom line is that there is very little certainty that mitigation measures inherited from the Central Arctic Herd would be effective for the Porcupine Caribou Herd. Notably, the biggest gap in knowledge is the response of large summer aggregations to development and mitigation.	The uncertainty regarding the ability of very large postcalving Porcupine Caribou Herd caribou groups is acknowledged and discussed in the Draft SEIS. The use of an adaptive management plan in Alternative D is an attempt to alter mitigation strategies in response to new data and information.
Adoko	Ashlee	State Of Alaska	80221	38	Document Reference Chapter 3, Section 3.3.4, Page 3-197, Paragraph 1 Reviewer MW Agency DFG Resource/Topic Prediction of future distributions of PCH Comment: Please see comment regarding Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief.	Additional text on the uncertainties associated with the models of Severson et al. (2021) has been added.
Adoko	Ashlee	State Of Alaska	80221	39	Document Reference Chapter 3, Section 3.3.4, Page 3-197, Paragraph 1 Reviewer MW Agency DFG Resource/Topic Prediction of future distributions of PCH Comment: Also, "to predict the extent of future during calving and post-calving distributions as a result of a warming climate," in the first paragraph seems to be missing a word after "future."	Wording was changed to add "caribou distributions" after future.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Adoko	Ashlee	State Of Alaska	80221	40	Document Reference Chapter 3, Section 3.3.4, Page 3-197, Paragraph 4 last sentence Reviewer MW Agency DFG Resource/Topic Prediction of future distributions of PCH Comment: Please see comment regarding Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief.	Additional text on the uncertainties associated with the models of Severson et al. (2021) was added.
Adoko	Ashlee	State Of Alaska	80221	41	Document Reference Chapter 3, Section 3.3.4, Page 3-197, Paragraph 4 last sentence Reviewer MW Agency DFG Resource/Topic Prediction of future distributions of PCH Comment: Also, perhaps the last sentence on this page is where the reference to Map 3-33 is meant to be.	Additional text on the uncertainties associated with the models of Severson et al. (2021) was added.
Adoko	Ashlee	State Of Alaska	80221	42	Document Reference Chapter 3, Section 3.3.4, Page 3-214, Paragraphs 3 and 4 Reviewer MW Agency DFG Resource/Topic Prediction of future distributions of PCH Comment: Please see comment regarding Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief.	Additional text on the uncertainties associated with the models of Severson et al. (2021) was added.
Adoko	Ashlee	State Of Alaska	80221	43	Document Reference Chapter 3, Section 3.3.4, Page 3-215, Paragraph 3 Reviewer MW Agency DFG Resource/Topic Prediction of future distributions of PCH Comment: Please see comment regarding Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief.	Additional text on the uncertainties associated with the models of Severson et al. (2021) was added.
Adoko	Ashlee	State Of Alaska	80221	44	Document Reference Chapter 3, Section 3.3.4, Page 3-216, Paragraph 6 Reviewer MW Agency DFG Resource/Topic Prediction of future distributions of PCH Comment: Please see comment regarding Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief.	Additional text on the uncertainties associated with the models of Severson et al. (2021) was added.
Adoko	Ashlee	State Of Alaska	80221	45	Document Reference Chapter 3, Section 3.3.4, Page 3-218, Paragraphs 1 and 2 Reviewer MW Agency DFG Resource/Topic Prediction of future distributions of PCH Comment: Please see comment regarding Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief.	Additional text on the uncertainties associated with the models of Severson et al. (2021) was added.
Adoko	Ashlee	State Of Alaska	80221	46	Document Reference Chapter 3, Section 3.3.4, Page 3-218 , Paragraph 2 Reviewer MW Agency DFG Resource/Topic Mistake Comment: The text says "and only 100 acres of current and predicted future Porcupine Caribou Herd calving areas (as predicted by Severson et al. 2021) would be open to leasing under standard terms and conditions (Table J-22 in Appendix J)." The reference should be to Table J-22.	Table references were checked and corrected.
Adoko	Ashlee	State Of Alaska	80221	47	Document Reference Chapter 3, Section 3.3.4, Page 3-222, Paragraph 1 Reviewer MW Agency DFG Resource/Topic Prediction of future distributions of PCH Comment: Please see comment regarding Lease Stipulation 6 - Alternative D - Caribou Calving, Post-calving, and Insect Relief.	Additional text on the uncertainties associated with the models of Severson et al. (2021) was added.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Wardlow	Cyndi	The Wildlife Society- Alaska Chapter	80261	10	Other inadequacies in the draft SEIS content related to caribou. The draft SEIS provides improvements in the analysis and consideration of impacts of potential Coastal Plain oil and gas leasing and subsequent development on caribou compared to the previous FEIS. However, issues with the analysis remain, including areas for improvement to better align with the best available science: i. The draft SEIS acknowledges the potential for changes in spring snowmelt timing, which could have effects on forage amount, timing, and quality.(8) but fails to meaningfully analyze the impacts of this change. Such effects are especially important given recent findings that female caribou select for fine-scale habitat patches that are snow free during the calving period, even when the landscape around them is still mostly covered in snow.(9) ii. The draft SEIS indicates that traffic levels of "15 vehicles per hour or more ha[ve] been shown to deflect caribou movements and delay road crossings." Such a statement likely underestimates the impacts of traffic. The draft SEIS later acknowledges that "maternal caribou exhibit some displacement from roads even with low traffic levels (< 8 vehicles /day) during calving." The final SEIS should present this acknowledgement alongside the other traffic effect information first mentioned to not mistakenly imply that no effects will happen at traffic levels lower than 15 vehicles per hour. Similarly, a new study by the United States Geological Survey (USGS) found that adult female caribou selected areas with lower traffic volumes throughout the summer, with the greatest selection probabilities when traffic was < 5 vehicles per hour. This new scientific information should be incorporated into the final SEIS to better conform to the best-available data. iii. Alternative D holds a 4-week maximum duration of traffic stoppage to prevent displacement of caribou. No justification is provided for this time limit. It should be removed and replaced by a requirement to stop traffic whenever needed to prevent displacement of caribou. iv. Important caribou calving and post-calving habitat continues to be defined in the draft SEIS as that used by collared caribou "during more than 40% of the years surveyed."(10) This is one of the primary metrics used in the draft SEIS for identifying potential impacts to caribou under the various alternatives.(11) No justification is given for why only areas used in more than 40% of years are important for caribou. A clear biological rationale, grounded in the best-available science, must be stated. v. In general, treatment of climate change impacts upon caribou in the draft SEIS underestimates likely impacts. With such a strong preponderance of potential negative effects arrayed against relatively few expected positive effects for cold-adapted caribou, BLM and FWS must clearly articulate reasonably foreseeable negative impacts and support any assertion that positive effects may balance or outweigh negative effects with reference to scientific literature. vi. Another way the implications of climate change are diminished for caribou in the draft SEIS is the treatment of Severson et al. 2021. This recent study(12) led by USGS examined resource selection and habitat use by the PCH and found that the distribution of adult female caribou during the calving and post-calving periods can be predicted by environmental factors like timing of snow melt and greening of vegetation.(13) Projecting these selection patterns into the future based on reasonable climate change scenarios, the authors found predictions of increased use of the Alaskan coastal plain during the calving and post-calving periods. vii. The requirements described under Alternative D do not show any responsiveness to changes in caribou population. The scientific field of conservation biology has long been aware of the greater risks of extirpation faced by small populations.(14) However, there is no consideration of this increased risk in the protections of the draft SEIS. The caribou protections of Alternative D, strengthened as described above, should be used as a baseline for requirements to avoid impacts to caribou. If the herd size of the CAH or PCH decreases, however, additional restrictions should be added to reduce pressures on caribou at a time of increased vulnerability. viii. The ANILCA 810 Analysis concludes that "potential impacts to herd size as a result of displacement of maternal caribou are still anticipated to be negligible. Potential impacts to herd size as a result of behavior, feeding, and body condition changes are not anticipated to impact population size. Thus, caribou abundance for Kaktovik, Arctic Village, and Venetie would not be significantly impacted." Similarly, it states that "large-scale displacement and consequent large decreases in the abundance of Porcupine Caribou Herd available for subsistence use is unlikely." As is discussed above, such conclusions are neither supported by the literature, in line with Indigenous Knowledge cited in the ANILCA 810 Analysis, nor in alignment with the results of the best-available scientific modeling of population implications of development. Such a conclusion is also in conflict with other statements in the draft SEIS, including that "changes in caribou behavior will likely occur as a consequence of disturbance and could result in energetic costs that could have demographic impacts," "displacement of calving caribou by active roads is likely to persist despite repeated annual exposure," and in the cumulative sense, "climate change is expected to change the survival rates and distribution of terrestrial mammals (including caribou)". (8) DSEIS at 3-205. (9) Id. (10) DSEIS at 2-15, 2-18, 2-20. (11) See e.g., DSEIS at 3-215, 3-216, 3-21, App. J Tables J-22, J-23, J-27. (12) Severson, John P., Timothy C. Vosburgh, and Heather E. Johnson. "Effects of vehicle traffic on space use and road crossings of caribou in the Arctic." Ecological applications (2023). https://doi.org/10.1002/eap.2923 (13) Id. (14) E.g., Stacey and Taper. 1992; Caughley. 1994; Newman and Pilson. 1997; Saccheri et al. 1998; Briskie and Mackintosh. 2004; Matthies et al. 2004.	Results of Severson et al. (2023) were added to the text. Displacement from roads occurs during calving even with low levels of traffic (Prichard et al. 2022), but Severson et al. (2023) discusses the effect of traffic levels on caribou crossing behavior during mid-summer. Areas used more than 40% of years were used as one indication of important areas for calving, but there is no assumption that areas used less than 40% of years are unimportant.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Wardlow	Cyndi	The Wildlife Society- Alaska Chapter	80261	11	One purpose of the Arctic Refuge identified by ANILCA is to conserve muskoxen.(15) The BLM and FWS have not sufficiently evaluated the impacts of the oil and gas program in light of this management purpose. Despite acknowledging this startling population decline, the draft SEIS fails to take a sincere look at the various impacts of development activities on muskoxen and its habitats. Muskoxen are threatened by disturbance, displacement, and habitat degradation from seismic exploration activities and increased air and ground traffic; direct loss of habitat from gravel mining; barriers to movement from facilities, roads, and other infrastructure; increased hunting and poaching associated with increased human presence; increased predation due to increased numbers of predators attracted to human trash and food; and the additive and synergistic effects of climate change. According to the FWS,(16) oil and gas exploration and extraction activities, particularly along river corridors, can cause: (15) ANILCA § 303(2)(B)(i). (16) U.S. Fish and Wildlife Service, Arctic National Wildlife Refuge, Potential Impacts of Proposed Oil and Gas Development on the Arctic Refuge's Coastal Plain: Historical Overview and Issues of Concern (Jan 17, 2001), available at: https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_1/Arctic/PDF/arctic_oilandgas_impact.pdf . - displacement from preferred winter habitat - increased energy needs related to disturbance and displacement - decreased body condition of females - increased incidents of predation - decreased calf production and animal survival Seismic exploration and other winter oil and gas development activities, such as air and ground traffic, can disturb muskoxen and have serious negative impacts to the animals' energy balance.(17) Reactions to seismic activities can be variable, but animals have responded with alert behavior, assorting in defensive formations, and running from the disturbance from distances up to 2.5 miles away from operations.(18) This can result in the deaths of young calves that are left behind.(19) According to the BLM, "Where 3-D seismic exploration survey lines were located only 500 to 2,000 feet apart, localized displacement of terrestrial mammals could last for several days or lead to complete abandonment of localized habitat"(20). Calving season - just before snowmelt from mid-April to mid-May - is a sensitive time, and anthropogenic disturbance can be particularly taxing.(21) This information suggests that seismic exploration on the Coastal Plain would risk disturbing and displacing muskoxen, causing additional stress in the winter and early spring that could lead to abandonment of preferred habitat areas and increased mortality. The draft SEIS must address the significant potential impacts of seismic exploration on muskoxen in the Coastal Plain, particularly the animals currently using the program area, and explain how inflicting those impacts on this small population will be consistent with the Refuge purpose of conserving muskoxen. (17) Department of Interior, Bureau of Land Management. National Petroleum Reserve - Alaska, Final Integrated Activity Plan/EIS. Vol. 2, Ch. 4 (November 2012) at 189 and 191. (18) Reynolds, P.E. and LaPlant, D.J. 1985. Effects of Winter Seismic Exploration Activities on Muskoxen in the Arctic National Wildlife Refuge. In Arctic National Wildlife Refuge Coastal Plain Resource Assessment. 1984 Update Report Baseline Study of the Fish, Wildlife, and Their Habitats, G.W. Garner and P.E. Reynolds (eds.). ANWR Progress Report No, FY85-2, Volume I. U.S. Department of Interior, U.S. Fish and Wildlife Service, Anchorage, Alaska; J.F. Winters and R.T. Shidler 1990. An Annotated Bibliography of Selected References of Muskoxen Relevant to the National Petroleum Reserve. Alaska Department of Fish and Game. Fairbanks, Alaska. (19) U.S. Fish and Wildlife Service, Arctic National Wildlife Refuge, Potential Impacts of Proposed Oil and Gas Development on the Arctic Refuge's Coastal Plain: Historical Overview and Issues of Concern (Jan 17, 2001), at p.9, available at: https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_1/Arctic/PDF/arctic_oilandgas_impact.pdf . (20) Department of Interior, Bureau of Land Management. Northeast National Petroleum Reserve - Alaska, Final Supplemental Integrated Activity Plan/EIS. Vol. 2, Ch. 4 (May 2008) at 4-158. (21) Department of Interior, U.S. Fish and Wildlife Service. Proposed Oil and Gas Exploration within the Coastal Plain of the Arctic National Wildlife Refuge, DEIS and Draft Regulations. (September 1982) at IV-34.	Potential impacts of development on muskoxen are discussed in the SEIS, but there is currently limited use of the Project Area by muskoxen, which if it continues will limit the impact of development on the species. Muskoxen have continued to use the Prudhoe Bay and Kuparuk Oilfields after development with groups consistently using the Sagavanirktok, Kuparuk, and Colville River areas and expanding west into NPRA. Additional text on muskoxen population and distribution was added.
Not Provided	Not Provided	Alaska Industrial Development and Export Authority (AIDEA)	80294	61	Topic Terrestrial Mammals, Direct and Indirect Impacts, Caribou Section # 3.3.4 Page # 3-218 SEIS Text Alternative D would place an area predicted to contain 0.55-1.86 percent of the Central Arctic Herd during different summer seasons off limits to lease sales and 1.46-9.14 percent off limits to surface occupancy. It also would control use in an area predicted to contain 0.01-0.07 percent of the Central Arctic Herd during different summer seasons. (as one example of text concerning the comment) Comment As mentioned in comments above, throughout various resource impact analyses, particularly biological resources, there is little to no comparison of impacts between the alternatives. For example, the impact methodology and analyses to caribou are extremely complicated and detailed, and there is no conclusory statement for each alternative on what the impacts actually mean and how they compare between alternatives. There is no discussion on the caribou impacts in the context of the overall populations for each alternative, although in the Cumulative Impact section (SEIS page 3-223) a few models are mentioned that indicate the potential percent reduction in population. But again, there is no statement on what that actually means in the context of the ever-changing populations that have been observed over the years. Overall, it is possible the impacts have no notable implications on the species, and the differences between alternatives is not notable, either. But there is no "what does it all mean? discussion of this. Without a clear alternatives comparison, there is no clear basis for the public or decision maker to make a choice among alternatives.	Results of Russell and Gunn (2019) were added under discussion of environmental consequences sections of the alternatives as one way of quantifying impacts, although there are limitations associated with the assumptions of the model as described in the SEIS.
Not Provided	Not Provided	-	80337	2	It was stated in the recorded presentation that the areas not proposed in Alternative D "correspond with high quality caribou habitat". It was not clear if this is a convenient fact or if this was a purposeful priority when crafting the alternative. I am left to assume that high quality caribou habitat corresponds with caribou habitat use. I did not find in the document where it illustrates the trajectories of the caribou migration compared to the direction of the road networks.	High quality caribou habitat includes areas that are frequently used for calving or postcalving habitat or expected to be frequently used during these seasons in the future. The location of potential future roads is unknown because no project has been proposed. Future projects will be subject to the NEPA process.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Demientieff	Bernadette	Gwich'in Steering Committee	80355	5	The draft SIES provides some additional information and analysis about the impacts of an oil and gas program on the Porcupine Caribou Herd but still falls short of fully analyzing and explaining impacts of a potential oil and gas program on the Coastal Plain. To begin, this is one area where Indigenous Knowledge could be better integrated to ensure that the description of caribou and the land that they rely on is complete. The Gwich'in peoples' understanding of the Coastal Plain and its relationship with the health of the land is vast. By this point, BLM and FWS have ample testimony and comments from Gwich'in describing the use of the Coastal Plain by caribou, the use of caribou by Gwich'in, and the extensive experience of the Gwich'in in hunting and using caribou as part of our culture. This information should be better integrated into the information presented in the final SEIS to recognize Indigenous ways of knowing and stewarding the land and animals since time immemorial.	Additional information on traditional knowledge and importance of the area has been added.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	6	Concerning the information presented, we are greatly concerned with the so-called "zone of influence." We believe that the estimated zone of influence is much too small geographically and too short temporally to depict the impacts to the Porcupine Caribou Herd, especially for mother caribou with their babies. The final SEIS should include a larger distance and longer duration zone of influence. The entire Coastal Plain is important birthing and nursery grounds for the caribou as it has been in the past and will continue to be in the present and future. Any oil and gas will disrupt the caribou. Relatedly, we do not believe that western science supports the findings regarding habituation of caribou to oil and gas. Our knowledge tells us it is the opposite, and a close read of western science comports with our knowledge.	The areas of lower calving density observed for the Central Arctic Herd have been relatively consistent since the early days of oil development with some displacement occurring out to approximately 4-5 km during calving, no evidence of habituation during calving season has been observed. The level of displacement declines during the postcalving period for the Central Arctic Herd (Johnson et al. 2020, Prichard et al. 2020, 2022). Central Arctic Herd caribou frequently use active roads and pads for oestrid fly relief during mid-summer showing that caribou can tolerate human activity during some seasons and conditions. The entire Project Area could be used for Porcupine Caribou Herd calving in some years, but the 3 active alternatives protect varying amounts of the Project Area and varying amounts of area that are currently used for calving or projected to be used frequently for calving in the future (Severson et al. 2021). Alternatives D and D2 provide the strictest protections for the greatest amount of current and future calving areas.
Demientieff	Bernadette	Gwich'in Steering Committee	80355	7	We are also deeply concerned about the lack of analysis of the impacts of climate change on caribou both currently and in the future. We are experiencing many changes in our land and animals from climate change. Our communities are being significantly impacted in many ways, including by changes to the foods we eat and the animals we hunt. The final SEIS must fully and accurately explain the impacts of climate change on caribou, including the availability of forage, the areas they may use, individual and herd's ability to respond to disease outbreaks, and increased insect activity.	The Draft SEIS contains extensive discussion of the potentially large impacts of climate change on caribou and discusses modeling of how the distribution of the herd could change during calving and postcalving in response to climate change (Severson et al. 2021). These sections have been updated based on all comments.
Marsh	Ryan	-	80395	1	The Coastal Plain is the biological and spiritual heart of the refuge, which was protected explicitly to protect the underlocking ecosystems from south of the Brooks Range up to the Beaufort Sea. Globally caribou populations are on dramatic declines, and we simply don't know enough about them and the Porcupine herd specifically to risk justifying endangering one of the only healthy populations left on this planet. The EIS is deficient in understanding how climate change will affect the herd and changes in migration patterns and population dynamics as a result of that climate change.	The SEIS contains extensive discussion of the potentially large impacts of climate change on caribou and discusses modeling of how the distribution of the herd could change during calving and postcalving in response to climate change (Severson et al. 2021). The SEIS does acknowledge that predicting impacts of climate change is difficult.
Gilbert	Galen	-	80430	1	Beginning of the summer, the caribou, they migrate. They take this path, this migratory path they use for thousands of years. To me that's very interesting that they keep using that same route. So they use that route the beginning of the summer to go to the calving grounds where they want to drill.	The SEIS provides maps and tables of the distribution and movements of caribou in the Project Area during calving and postcalving that show the importance of parts of the area during these seasons.
Gilbert	Galen	-	80430	2	If they're drilling in ANWR -- I just want to say that one real quick -- it will ruin the migration route, because I've seen it with my own eyes about the Western Central herd. I think it was about 2007 that, with the Porcupine caribou here that one fall, we did see part of the Central herd with them. I saw it with my own eyes that they were with them. It was pretty weird. Everybody was like, is that the Central herd? And then later on we found out that where they migrate to, there was drilling. So that there is proof that it will ruin the Porcupine herd's migration route. It will. And not only that, I believe ducks and geese, too, because they're at the calving grounds with the caribou having their eggs or babies. It would 100 percent disturb them. Even noise, noise of four-wheelers disturbs them. And I can't even imagine if they were drilling what -- all that noise would disturb them.	The Central Arctic Herd has continued to use the Prudhoe Bay and Kuparuk Oilfields after oil development although there have been large changes in calving distribution, some deflections of movements, and less use of areas near roads, especially in older areas with lower quality mitigation. Much of the available literature is described in the SEIS.
Stern	Charlene	-	80444	8	You'll hear often that caribou herds across the country, across North America are declining. The Porcupine caribou herd is the only one that is growing. And we believe that their undisturbed migration path, their undisturbed calving grounds is a big reason for that. And our people understand what a healthy animal is and what an unhealthy caribou is.	The global decline in caribou numbers and the importance of calving habitat are described in the SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Young	Pam	-	80460	2	Climate science research finds that the oil and gas exploration critically destroys habitat quality on which caribou depend. Articles such as Disturbances in North American Boreal Forests and Arctic Tundra enumerate the impacts, interactions, and responses that reduce mammalian movements globally and may critically alter the movements of the porcupine caribou herd. Scientists further warn that we are advancing so quickly toward catastrophic systemic failure in the Arctic that we're facing eco-side. Any contemplation of more fossil fuel extraction in the Arctic seems to be. No, in fact, is suicidal. Just look at world scientists warning of a climate emergency, an article put out already 4 years ago, in 2019. The BLM must carefully consider the impacts of climate change on the caribou migration route. Caribou habitat in the Arctic Refuge will be drastically altered in coming decades. The climate crisis alters the porcupine, Hertz migration routes and habitats. Even alternative D, with the remote seismic activity, may well disturb the caribou herd. There's no evidence, there's no science, there's no underlying best available science to tell us that that's a valid action to take and put all that expense and effort into something that may well disturb the herd too greatly.	Severson et al. (2021) provided models of the calving and postcalving use of the Porcupine Caribou Herd under future levels of climate change. These projections were used in the development of Alternative D and D2 and discussed in the alternatives comparisons.

U.3.48 Transportation

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
H.	Zach	-	24233	2	Further, the SEIS should describe how permanent infrastructure would be extended from the existing highway system to reach any developments in the 1002. As of now, the SEIS treats the 1002 area like it exists in a vacuum that would be isolated from existing infrastructure, but that is simply not the case--in the least, pipelines would need to be constructed back to Deadhorse and these pipelines would require ice roads for construction and maintenance. The northeast portion of Alaska is significantly drier than northcentral Alaska where current oil and gas development has been constructed.	The SEIS discusses that under all action alternatives, there would be no direct impacts from leasing on transportation; however, lease sales would result in subsequent gravel and ice roads, airstrips, fueling stations, and a barge landing area to support new oil and gas development. In areas subject to NSO, new roads, airstrips, and other transportation-related infrastructure would be precluded, unless they are essential pipelines and road crossings in accordance with PL 115-97. Under all action alternatives, there would be no gravel roads constructed during the exploratory drilling phases; potential direct and indirect impacts described above associated with gravel roads would occur only in the long term. All action alternatives would expand the transportation network in the program area, but they would be restricted to oil and gas-related use and could create barriers and decrease the level of access for the public; however, roads could be seasonally available for subsistence users.
Freitas	Benjamin	World Wildlife Fund	79957	32	WWF prioritizes the conservation of the Bering, Chukchi, and Beaufort seas. Increased vessel-traffic due to increased shipping associated with the proposed oil and gas development of the Coastal Plain will have adverse impacts across this ecologically sensitive Arctic marine ecosystem that serves as key habitat for many mammals, fish, and birds. Despite the tremendous global importance of the Arctic seas as habitat for wildlife, BLM's 2019 Final EIS narrowed the scope of impacts inappropriately and failed to adequately describe shipping activities associated with the proposed Coastal Plain oil and gas lease sales, including various alternatives, near the project area and along the marine barge route. As an initial matter, BLM's 2019 Final EIS improperly limited its shipping discussion to the program area, which is much smaller than the area that will experience effects from the proposed development. Likewise, here, the agencies have improperly narrowed its Draft SEIS analysis to avoid discussing the direct, indirect, and cumulative effects of vessel shipping, by deciding that the agencies' hypothetical Reasonably Foreseeable Development scenario "is applicable to the program area, and speculation beyond where marine vessel traffic would go is beyond the scope of this analysis."(63) (63) Draft SEIS, at p. 3-140.	The RFD Scenario is applicable to the program area; speculation on the location and level of marine vessel traffic is beyond the scope of this analysis. Direct and indirect impacts cannot be analyzed on a site-specific basis within this SEIS, but they are analyzed for the program area generally based off the RFD Scenario. The Draft SEIS includes a map of the proposed marine barge route in the RFD Scenario (Appendix C, Figure C-2). The cumulative impacts section was updated to include discussion of marine vessel traffic. The Final SEIS includes a discussion of marine vessel traffic in the cumulative impacts.
Freitas	Benjamin	World Wildlife Fund	79957	33	While the program area encompasses the federal lands and waters of the Coastal Plain within the Arctic Refuge and includes approximately 125 miles of coastline from the Staines River to the Beaufort Lagoon, shipping activities connected with the proposed action will take place, and their impacts will be felt, along the entire 1,600-nautical mile (nm) marine barge route from Dutch Harbor to Kaktovik, Alaska.(64) This issue must be addressed in the Final SEIS with a full description and analysis of the projected direct, indirect, and cumulative impacts from increased shipping. (64) See Draft SEIS, Appx. B, Map B-2 (acknowledging a potential marine vessel transportation route to Dutch Harbor). Moreover, the 2019 Final EIS included virtually no description of the nature and extent of marine shipping activities. The limited information provided regarding marine vessels was scattered throughout the 2019 Final EIS with no comprehensive section devoted to shipping. This inadequacy remains in the Draft SEIS, despite WWF's scoping comment letter request that, "rather than information scattered throughout an EIS document, the SEIS contain a comprehensive section devoted to an analysis of the impacts from shipping activities that will result from the leasing program."(65) DOI should update its Final SEIS with a comprehensive section devoted to the direct, indirect, and cumulative effects of increased shipping as a result of an oil and gas program. This is especially important as BLM and USFWS need adequate baseline and effects analysis to review the potential effectiveness of Required Operating Procedure 46 regarding marine vessel traffic-associated activities under the three action alternatives.(66) (65)WWF Comments on Bureau of Land Management's Notice of Intent to Prepare a Supplemental Environmental Impact Statement for the Coastal Plain Oil and Gas Lease Program, Alaska (Oct. 4, 2021), pp. 14-17. (66) Draft SEIS, at pp. 2-82 to 87.	The RFD Scenario is applicable to the program area; speculation on the location and level of marine vessel traffic is beyond the scope of this analysis. Direct and indirect impacts cannot be analyzed on a site-specific basis within this SEIS, but they are analyzed for the program area generally based off the RFD Scenario. A more specific analysis of increased shipping would be completed during project-specific NEPA analysis when project details are known.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Freitas	Benjamin	World Wildlife Fund	79957	34	The absence of information regarding shipping and shipping-related impacts in the Draft SEIS is especially problematic because the number of vessels transiting the Arctic is increasing over time, including vessels serving oil and gas exploration areas in the Beaufort and Chukchi Seas, as well as vessels serving the military, research, tourism, mining, and other industries. The Final SEIS must describe and analyze oil and gas-related shipping associated with the proposed development of the Coastal Plain in conjunction with a meaningful discussion of this larger picture of dramatically increasing shipping activities in the Arctic over the next 50 years. Such analysis cannot be postponed until future site-specific NEPA reviews because these will not capture the big picture of cumulative shipping impacts over the 50-year timeframe for the proposed action.	The RFD Scenario is applicable to the program area; speculation on the location and level of marine vessel traffic is beyond the scope of this analysis. Direct and indirect impacts cannot be analyzed on a site-specific basis within this SEIS, but they are analyzed for the program area generally based off the RFD Scenario. A more specific analysis of increased shipping would be completed during a site-specific NEPA analysis when project details are known. The Draft SEIS includes a map of the proposed marine barge route in the RFD Scenario (Appendix C, Figure C-2). The cumulative impacts section was updated to include discussion of marine vessel traffic. The Final SEIS includes a discussion of marine vessel traffic in the cumulative impacts.
Freitas	Benjamin	World Wildlife Fund	79957	35	The Draft SEIS contains no clear discussion of what kinds of vessels will be used, how many vessel transits are expected, what cargo and materials they will carry, or how fast they are expected to travel. The limited information provided is misleading in suggesting that shipping traffic will be limited to two barge convoys per year.(67) Indeed, in the absence of any road, or proposal for a road, connecting Kaktovik and Deadhorse, it is clear that the vast majority of project supplies and materials, including bulk fuel and hazardous materials, will need to be shipped to the site. WWF requests that, rather than information scattered throughout the Draft SEIS, the Final SEIS contain a comprehensive section devoted to an analysis of the impacts from shipping activities that will result from the leasing program. (67) Draft SEIS, at p. 3-140. Vessel traffic poses three primary risks to polar bears, whales, and other marine mammals and wildlife in the Arctic-oil and hazardous substance spills, noise, and ship strikes. These risks and associated impacts are not adequately analyzed in the Draft SEIS and should be given substantially greater attention. Specifically, WWF outlines here a number of issues for the agencies to analyze in a Final SEIS section devoted to impacts associated with shipping.	Speculation on the location, level, and type of marine vessel traffic is beyond the scope of this analysis. A more specific analysis of increased shipping would be completed during project-specific NEPA analysis when project details are known. However, potential impacts of the marine vessel route are discussed where relevant to specific resources, such as Section 3.3.5.
Freitas	Benjamin	World Wildlife Fund	79957	42	Ship Strikes. The Draft SEIS fails to contain a section analyzing the potential direct, indirect, and cumulative impacts of ship strikes to marine wildlife. Instead, discussion of ship strikes is roundly dismissed within a section on injury and mortality to marine mammals, concluding without analysis that "potential ship strikes of marine mammals would be highly unlikely and are not expected to occur."(80) But the agencies' conclusion that ship strikes of whales and seals would be "highly unlikely" is based in large part on the assumption that vessel traffic would be traveling slowly, i.e., at less than around 10 knots.(81) There is presently nothing in the leasing stipulations or ROPs, however, generally requiring ships to adhere to a 10-knot speed limit.(82) (80) Draft SEIS, at p. 3-258. (81) Id. (82) Draft SEIS, at pp. 2-82 to 87. While Required Operating Procedure #46 does suggest that ships adhere to 10 knots "If the vessel approaches within 1 mile of observed whales," this is merely a suggestion among other actions ships may take "as appropriate." Moreover, there is no speed requirement in the absence of a whale sighting. Thus, this ROP is thus neither mandatory or broadly-applicable enough to be used as a basis for the assumption that ship strikes are "highly unlikely."	As described in Section 3.3.5 (Marine Mammals) of the Final SEIS, "the absence of collisions involving industry vessels and marine mammals in the Bering, Chukchi, and Beaufort Seas, despite decades of spatial and temporal overlap, suggests that collision probabilities are low along the transit route from Dutch Harbor to the program area (NMFS 2013)." ROP 46 minimizes impacts of vessel traffic strikes on marine mammals by establishing rules of operation. Besides adhering to other rules of operation in the vicinity of whales or seals, examples of these rules are using dedicated Protected Species Observers (PSOs), prohibiting transit of vessels before July 1, and limiting vessel speed to 10 knots. Because of the slow vessel speeds and the presence of PSOs onboard operating vessels, vessel strikes are highly unlikely under any of the action alternatives.
Freitas	Benjamin	World Wildlife Fund	79957	43	The Final SEIS needs to present a more realistic, scientifically-based analysis of the risk and impacts, including at individual and population levels, of vessel strikes based on overlap of whale habitat with shipping routes and the actual speeds at which vessels are expected to travel, both within or near the program area and along the marine barge route. Even if a speed limit is added in certain areas as a required and enforceable mitigation measure, revision of the analysis would still be needed. This is especially important given that worldwide records of ship strikes on whales show that all large whales are at risk, particularly right whales and bowhead whales, and ship strikes can significantly affect small populations of whales. Additionally, the Draft SEIS's reliance on the absence of records or evidence of ship strikes to conclude that strikes are unlikely is not satisfactory because ship strikes are grossly underreported. BLM and USFWS must address ship strikes in a comprehensive section on shipping in its Final SEIS.	Potential impacts of vessel strikes on marine mammals, including whales, is discussed in Section 3.3.5.
Not Provided	Not Provided	-	80337	3	The Severson et al. (2023) paper was not included, nor could I find a concurrent metric of the number of vehicles expected to be traveling the roads per hour.	The RFD Scenario (Appendix C) includes the types of vehicles expected to travel the roads. A traffic analysis would be completed during a site-specific NEPA analysis when project details are known.

U.3.49 Vegetation and Wetlands

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Long	Becky	-	33606	6	Suggestion for improving the implementation of a leasing program in order to make it consistent with the purposes of the Refuge. Regarding wetlands. Table 3-32 on page 3-115, shows the Wetland Classes Mapped in the Arctic Refuge Program Area. The National Wetland Inventory (NWI) was used from the mapping for the North Slope. The idea is to assess the extent of the wetland resources in the project area. This depicts wetlands on a broad scale relative to the requirement for project specs regarding wetland permitting. The next step in the leasing program must use better, more accurate mapping of the water resources for the actual leasing. The most precise and accurate standard is 1-meter LiDar/DEM from ifSAR digital maps. These are synthetic systems.	The wetland mapping used in the SEIS was developed in 2022 for the USFWS NWI program using high resolution SPOT 5 imagery as the mapping base layer and digital elevation models derived from ifSAR data as ancillary products. The scale of the mapping is at 1:24,000, hand digitized using a 1 to 3 acre target mapping unit (Knopf 2022, cited in text). As noted in the Draft SEIS Section 3.3.1, Vegetation and Wetlands - Affected Environment, the map includes 119 individual NWI wetland types that were combined into 24 wetland classes for the analysis purposes in the SEIS. The map products used provide a more than adequate detail for this programmatic level EIS. Further detailed mapping specific to impact areas would be prepared for individual proposed projects to support the wetland permit process but are not necessary for this analysis.
Boldrick	Lauren	EPA Region 10	80058	24	Recognizing that the U.S. Fish and Wildlife Service is the joint lead agency for the DSEIS, and that the agency is the land manager of ANWR, EPA recommends the NEPA analysis evaluates the FWS's Mitigation Policy, which states a preference that proponents offset unavoidable resource losses in advance of their actions, as well as Executive Order 11990 Protection of Wetlands. EPA notes that the FWS Mitigation policy includes the consideration of "effects and mitigation outcomes over a period of time commensurate with the expected duration of the action's impacts."(37) EPA recommends the NEPA analysis includes describing the impacts over the duration of the proposed project, the method for developing mitigation that considers the duration of the action's impacts, and the mitigation to offset those impacts. For example, potential mitigation of impacts could involve acquiring high priority lands within and around refuge boundaries and designating them for preservation, prohibiting development, and replacing the essential functions that would be lost by the proposed project. (37) U.S. Fish & Wildlife Service. Mitigation Policy Appendix 1, 501 FW 2, May 2023, p. 7. https://www.fws.gov/sites/default/files/policy/pdfs/FWS-Mitigation-Policy.pdf	Specific lease stipulations and ROPs listed under "Impacts Common to all Action Alternatives" (Draft SEIS Section 3.3.1, Vegetation and Wetlands) limit construction and operations to avoid and or minimize direct and indirect effects; however, none specify the development of a compensatory mitigation plan as specified by the USFWS Mitigation Policy or EO 11990. Compensatory mitigation, with the goal of replacing lost functions for the duration of impacts on the landscape, is evaluated and may be required during the U.S. Army Corps of Engineers' Section 404 wetland permit process following the submission of applications for a project with ground-disturbing activity. Wetland permits would be required when individual projects are proposed within a leased area that would place fill in waters or wetlands. Because wetlands encompass the majority of landcover in the program area, wetland compensatory mitigation would relatively effectively protect the majority of impacted vegetation types as well. Text has been added to Section 3.3.1, Wetlands and Vegetation - Impacts Common to All Action Alternatives describing this.
Boldrick	Lauren	EPA Region 10	80058	25	The DSEIS indicates that though no federally listed plant species are known within the program area, although it is possible some are present in the program area and have not yet been documented.(38) EPA recommends that the FSEIS describe measures that will be taken to ensure that federally listed plant species are identified and addressed during the proposed action. For example, describe requirements for mandatory plant survey as a ROP prior to clearing and filling an area for surface occupancy. (38) DSEIS page 3-113	The text has been revised in Appendix B, Section B.3.1, Vegetation and Wetlands - Affected Environment, Rare Plants, to acknowledge that there may rare or listed species within the program area. Text was also added to Section 3.3.1, Vegetation and Wetlands - Direct and Indirect Impacts, Impacts Common to All Action Alternatives, describing ROP 44, which is intended to minimize impacts to BLM sensitive plant species. .

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	159	Groups are concerned that the agencies' analysis of the impacts of an oil and gas program on tundra, vegetation, and wetlands is still lacking. The vegetation and wetlands section of the draft SEIS points to a hypothetical oil field scenario, consisting of a central processing facility, roads connected to six satellite drill pads, a seawater treatment plant, and a 30-mile access road, which total an estimated 750 acres.(563) In the draft SEIS, BLM and FWS state that it was not possible for the agencies to quantify the potential impacts on specific wetland and vegetation types using a specific footprint because no on-the-ground actions have been authorized.(564) Instead, BLM and FWS calculate the proportions of each vegetation and wetland type occurring in each lease stipulation category and high-carbon potential zone.(565) (563) DSEIS at 3-118 to 3-119. (564) Id. at 3-119. (565) Id. App. J at J-9 to J-21. It is unclear from the reference to this hypothetical development scenario what the total potential impact might be to vegetation and wetland resources, and how the impacts might vary across the region from such a development. Even if BLM and FWS do not have an actual development proposal in front of them, they need to do more to quantify and convey how development in different areas is likely to impact the specific tundra, vegetation, and wetland resources in different areas. The quantification of the specific percentages of vegetation and wetlands within each of the areas open to leasing or other activities under the different alternatives is a start, but ultimately just informs the public of the types of vegetation in areas open to development; it does explain what the impacts from the full range of oil and gas activities within those specific areas are likely to be and how those might differ. The agencies never take the step of adequately discussing how the differences in vegetation might play out in terms of impacts - what, for instance, the landscape will look like if intensive seismic surveying is conducted in vegetation types like tussock tundra and riparian shrublands that are particularly prone to vehicular impacts, or in moist sedge tundra, where recovery is especially poor. (566) There is an acknowledgement in the draft SEIS about how impacts to tussocks can't be avoided and how seismic impacts would be "measurable and sustained" or could worsen long-term.(567) But there needs to be a more robust analysis of what that may actually mean in terms of impacts. If snow cover is inadequate and tussock tundra is damaged, it cannot recover in a human-significant timeframe. (566) See, e.g., Seismic White Paper at 32-33. (567) DSEIS at 3-121.	Comparing alternatives by proportion of wetlands and vegetation potentially impacted in each alternative is an adequate level of analysis for this broad scale programmatic level of analysis and is an appropriate way to determine which alternatives would likely impact the highest value and/or most sensitive landscapes. Detailed, geographically-specific analysis would be warranted if a specific development project were to be proposed. The Impacts Common to all Action Alternatives (Section 3.3.1, Vegetation and Wetlands) describes the potential direct and indirect impacts from the disturbances included in the RFD Scenario and cites secondary literature, including the white paper on impacts of seismic exploration (Walker et al. 2019). In addition to listing potential disturbances and their impacts, SEIS Section 3.3.1 also highlights the most sensitive wetland and vegetation types which is then tied to the alternatives analysis section where quantification of specific resources is discussed.
Brisson	Brook	Trustees for Alaska	80131	160	The agencies also need to better quantify the potential indirect impacts. As noted throughout these comments, the impacts of development will extend well beyond the direct footprint where there is fill. BLM and FWS should include estimates of the total area that will be impacted by any activities, including indirect impacts. These impacts include nearby areas that could be impacted by dust, oil spills, and other contaminants or that could be altered due to other changes, such as impacts to hydrology that lead to changes in vegetation. The agencies have not accounted for impacts to vegetation from pipelines, which will shade significant areas and potentially alter or kill vegetation.	A 328-foot (100-meter) buffer surrounding a typical development scenario footprint was used as the area where most indirect impacts will occur. Applying a 328-foot buffer roughly translates to multiplying the direct footprint area by a factor of 8.8. Descriptions of indirect impacts are included in the Impacts Common to all Action Alternatives (SEIS Section 3.3.1, Vegetation and Wetlands), and the resulting acreages are discussed in the alternatives analysis by vegetation and wetland type. The 328-foot buffer is the standard estimation of the extent of indirect effects (i.e., dust shadow fallout) and is supported by the current secondary literature as cited in the SEIS.
Brisson	Brook	Trustees for Alaska	80131	161	BLM and FWS assumed there was a 328-foot buffer to account for the area of indirect effects on vegetation and wetlands.(568) This buffer is too small. There are significant impacts from fugitive dust, gravel spray, thermokarsting and thermoerosion, and impoundments. Some of these could extend well beyond just this 328-foot buffer. As noted above, the study of the Dalton Highway that the draft SEIS cites when setting the 328-foot buffer indicates that there were significant disturbances and impacts to vegetation that occurred across an area roughly twice that size.(569) (568) Id. at 3-119. (569) Id. at 3-118; Myers-Smith, I. H., B. K. Arnesen, R. M. Thompson, and F. S. Chapin III. 2006. Cumulative Impacts on Alaskan Arctic Tundra of a Quarter Century of Road Dust. <i>Ecoscience</i> 13:503-510; see also Kumpala, T., A. Pajunen, E. Kaarlejärvi, B. C. Forbes, and F. Stammer. 2011. Land Use and Land Cover Change in Arctic Russia: Ecological and Social Implications of Industrial Development. <i>Global Environmental Change</i> 21:550-562.	The Myers-Smith study does document the presence of road dust up to a kilometer distant from the road. However, as noted in the Direct and Indirect effects section (SEIS Section 3.3.1, Vegetation and Wetlands), the 328-foot (100-meter) buffer was selected because most measurable impacts (i.e., dust shadow fallout) will occur within this zone. The Kumpala et al. 2011 paper cited by the commenter is a regional comparison of 2 case studies in Russia on the interaction of relatively unregulated oil and gas development within the regional reindeer grazing areas of the Nenets culture. Kumpala et al. (2011) identified impacts are measured across broad regions as a function of the interaction of 2 regional land-uses, versus this SEIS which compares impacts of specific alternatives within a remote and undisturbed region.
Brisson	Brook	Trustees for Alaska	80131	162	In the draft SEIS, the agencies appear to limit their impacts analysis to post-leasing activities.(570) The agencies need to analyze the full range of direct, indirect, and cumulative impacts that could occur to vegetation, tundra, and wetlands, including impacts that might occur on non-leased areas. BLM and FWS were unclear in the draft SEIS about whether they would allow seismic exploration in areas that have not been leased. (571) If such activities are allowed, that needs to be fully analyzed. (570) DSEIS at 3-118. (571) Id. App. B at B-13 (referencing off-lease seismic).	As described in Section 2.2, Alternatives Development, and in Section 3.3.1, Vegetation and Wetlands (Impacts Common to All Action Alternatives): "Under the revised range of alternatives and RFD scenario analyzed in this SEIS, seismic exploration would now be limited to only those areas available for lease under each action alternative, thus reducing the areas where seismic exploration could occur under Alternatives C and D (versus the 2019 EIS range of alternatives)". The potential impacts of seismic exploration are documented in this same section and alternatives are compared on the basis of areas of leasing closures.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	163	In a White Paper analysis by prominent scientists with deep expertise and research experience in the Arctic in a range of disciplines, they concluded that a prior exploration proposal was likely to cause "significant, extensive, and long-lasting direct, indirect, and cumulative impacts . . . to the microtopography, hydrology, permafrost, and vegetation of the 1002 Area."(572) That White Paper discusses a broad range of potential impacts to vegetation and hydrology from seismic activities that the agencies need to analyze in relation to all leasing-related seismic surveying. It concludes that 3D-seismic technology has not improved to the point where there would not be significant damage to arctic tundra. Seismic activities cause compression of the tundra vegetation, which in turn causes changes to snow accumulation, hydrology, and thermal regimes, which are visible from the air and can lead to thermokarst and thermoerosion.(573) These impacts would likely have significant consequences to the habitats of many species of plants, insects, small mammals, birds, and potentially large mammals including caribou.(574) While the draft SEIS cites this White Paper, it fails to adequately analyze or adopt measures to minimize these impacts. (572) Seismic White Paper. (573) Id. at 6-7. (574) Id. at 7.	ROPs 11, 12, and 15, as described in Draft SEIS Table 2-3, are intended to mitigate the impacts of seismic exploration, as described in the "Impacts Common to All Action Alternatives" (Section 3.3.1, Vegetation and Wetlands).
Brisson	Brook	Trustees for Alaska	80131	164	The draft SEIS notes that long-term studies have shown that the overall impact of seismic vehicle traffic on tundra is low, but impacts can still be measured up to 33 years after exploration.(575) The draft SEIS also states that seismic lines and camp trails on the North Slope were found to be generally visible in summer vegetation for about 5 years after disturbance, and that disturbance levels varied widely depending on snow cover and permafrost, site moisture, microtopography, and vegetation conditions. (576) The draft SEIS does not adequately discuss the results of the studies that were conducted on areas disturbed as part of the 1980s seismic program, which indicate there are likely to be significant, long-term impacts from future seismic surveys. There are also cumulative effects that will occur from conducting seismic surveys over areas that are still damaged from the 1980s. The seismic work that took place in the 1980s resulted in impacts that persisted for decades, some of which are still visible to this day and are expected to be permanent. There was still measurable disturbance from that program on 5% of the trails in 2009 and 3% in 2018 - 33 years after the initial disturbance.(577) The soil subsidence and vegetation changes that remain indicate that disturbance is likely to be present in those areas for decades to come. (578) Camp-move trails for seismic surveys caused some of the most damaging impacts to vegetation and tundra and took far longer to recover than many of the areas damaged by the seismic trails in the 1980s.(579) (575) DSEIS at 3-120. (576) Id. (577) Seismic White Paper at 33. (578) Id. (579) Id. at 34.	Seismic disturbances from the 1980s, as described in Walker et al. 2019, did not occur within the program area boundaries and were not specifically included in the cumulative effects section, except as part of a broad scale estimate of the area impacted indirectly from oil and gas development on the North Slope as a whole. See discussion of "Indirect Effects" in the "Cumulative Impacts section" (Draft SEIS Section 3.3.1, Vegetation and Wetlands).
Brisson	Brook	Trustees for Alaska	80131	165	The draft SEIS states that impacts from off-road vehicle traffic could be mitigated by using vehicles that involve fewer pounds per square inch and by performing seismic operations later in the winter when there is more snow cover and soils are frozen deeper. (580) This fails to account for the unique terrain, vegetation (e.g., tussocks), and inconsistent snow cover in the Coastal Plain. (581) The Coastal Plain has relatively low amounts of winter snowfall and strong winter winds that can lead to significant scouring and unpredictable and inconsistent snow cover. (582) It also fails to take into consideration the level of intensity of modern 3D seismic proposals in general. Modern seismic proposals still use many of the same vehicles and equipment that have been used in past seismic programs and that have led to vegetation and other damage.(583) Although there have been some improvements to vehicles, the number of vehicles used can be more than double that of past surveys and many of the vehicles are even heavier.(584) This also fails to account for the sheer intensity of 3D seismic proposals, which will involve dramatically more seismic lines and a much more extensive seismic program than conducted in the 1980s. Even if one assumes that only 5% of the area impacted by a modern seismic proposal will persist for decades, that would still amount to hundreds or thousands of acres worth of severe, long-term impacts from just one seismic program.(585) Even that number, which standing alone is significant, does not take into account the potential for other seismic and oil and gas activities to cumulatively combine with those effects. (580) DSEIS at 3-120. (581) Seismic White Paper at 6-7, 15-16, 18-22. (582) Seismic White Paper at 7, 21-22. (583) Id. at 29. (584) Id. (585) See id.	Text has been revised for clarity. References have been added to the "Cumulative Effects, Indirect Effects" section (SEIS Section 3.3.1, Vegetation and Wetlands) citing research documenting the long-term recovery of seismic disturbances to support the conclusion that while extensive seismic operations may have significant short-term visible impacts, they are likely minor except in cases where vegetation or surface organic layers are damaged. Cumulatively, the impacts are still limited to a relatively small proportion of the North Slope and will likely be resolved over time through directed rehabilitation and/or natural processes. References already cited in the SEIS include Jorgenson 2018 and Reynolds 2020.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	166	The analysis of the potential impacts of ice roads and related mitigation measures is insufficient. The draft SEIS states that ice roads have minimal effect on vegetation, which would recover to pre-construction conditions after approximately 20 years.(586) Ice roads can have major impacts that persist into other seasons and can severely alter hydrology, natural thermal regimes, and cause a wide variety of ecological impacts.(587) BLM and FWS recognize that recovery can take decades, which is inconsistent with its claim of a minimal impact. The draft SEIS emphasizes that more damage from ice roads occurs in well-drained areas, including moist tundra and shrub habitats. (588) The existing ice road study the agencies rely on underscores that damage is more likely to occur in well-drained areas. That study has limited applicability to the Coastal Plain because it looked at four ice roads in the western Arctic, and recommended that, "[b]ecause of the greater impacts associated with tussock tundra uplands, future ice roads planning should concentrate on locating roads in wetland areas."(589) The Coastal Plain is made up of 59% moist herbaceous meadow types, including herbaceous and tussock tundra. (590) Tussock tundra is the most common vegetation type in the Coastal Plain of the Arctic Refuge and is particularly susceptible to damage because of the considerable microtopographic relief in the tussocks, which can be up to ten-inches tall.(591) The agencies fail to recognize the prevalence of the exact vegetation type that is likely to be most vulnerable to damage from ice roads and pads. A one-size-fits all approach to these vegetation types is likely to result in damage to these vulnerable areas. (586) DSEIS at 3-121. (587) Sullender at 17. (588) DSEIS at 3-121. (589) SCOTT GUYER & BRUCE KEATING, THE IMPACT OF ICE ROADS AND ICE PADS ON TUNDRA ECOSYSTEMS, NATIONAL PETROLEUM RESERVE-ALASKA at vii (2005). (590) FEIS at 3-82. (591) Seismic White Paper at 32.	The ice road analysis in Draft SEIS is appropriate at the programmatic level. Individual proposals for exploration and development after an area is leased will be evaluated separately under their own project-specific NEPA analysis. The SEIS ROD will identify the final lease stipulations and required operating procedures any proposed projects will need to conform with.
Brisson	Brook	Trustees for Alaska	80131	167	The analysis of how the impacts will differ between alternatives focuses heavily on the no surface occupancy provisions to differentiate between the impacts under each alternative.(592) However, there are questions about whether the NSO provision will be effective. These provisions will only be effective to the extent that the agencies actually adopt and hold to those safeguards. As written, the draft SEIS still allows for waivers, exceptions, and modifications to these and other requirements, opening the door for operators to avoid ever complying with those requirements.(593) The agencies should remove these waivers, exceptions, and modifications. However, because they have included them, the agencies need to acknowledge and fully assess the ways in which waivers, exceptions, and modifications to these so-called protections could lead to far greater impacts and a much larger footprint of impacts than analyzed in the draft SEIS. (592) DSEIS at 3-124 to 3-127. (593) See, e.g., DSEIS at 2-5.	NSO stipulations were taken into account and would have no effect on the area of disturbance considered between alternatives because the RFD Scenario (Draft SEIS Appendix C) specifies that total impacts would not exceed 2,000 acres. It may have specific effects on the wetland and vegetation types impacted but this cannot be determined until after a specific project is proposed following a lease sale. Any proposed projects will be subject to their own environmental analysis (under NEPA).
Brisson	Brook	Trustees for Alaska	80131	168	Groups encourage the agencies to obtain additional information in order to make sound decisions regarding the potential impacts of the oil and gas program on tundra, vegetation, and wetland resources, including additional studies related to snow depths, wind patterns, and scour patterns on the Coastal Plain, as well as the impacts of damaging surface vegetation where there are high volumes of massive ground ice.	The Draft SEIS identifies areas where secondary literature is lacking and proposes additional baseline studies prior to development, specifically for rare and invasive plant species and to obtain high resolution mapping for accurately estimating impacts. In addition, a plant species inventory and a high resolution wetland map would be required for each individual proposed project under the U.S. Army Corps of Engineers Section 404 wetland permitting program. Additional baseline studies may be required to complete environmental analysis (i.e., NEPA) or other permitting requirements following the submission of specific project proposals.
Jorgenson	Janet	-	80336	12	The vegetation impacts paragraphs are much improved from previous versions. The SEIS lists many serious tundra impacts that could be caused by seismic exploration but doesn't present great solutions to avoid them. As with the earlier drafts, the SEIS lists things that could be done to reduce tundra damage even if those things won't be feasible. One example is doing the exploration only later in winter to get adequate snow cover. The seismic operators want to start as early in the winter as possible to have a long enough season. They won't want to start operations in March. Using low ground pressure vehicles is also recommended but some heavy equipment is still used during seismic exploration even on fiat areas of the North Slope. Heavy equipment such as Caterpillar tractors would certainly be needed to operate in the hilly and gullied terrain of the western 1002 area. I find no information on plans for supplying fuel to the seismic vehicles or impacts to tundra from heavily loaded fuel haulers. Fuel would travel to camps on prepacked snow roads but it also has to be delivered to the seismic vehicles where they are working and there won't likely be prepacked trails to every possible refueling place.	Disclosure of specific impacts and linking to individual lease stipulations and required operating procedures intended to mitigate their effects is appropriate for this programmatic level SEIS. Any proposals for exploration or development will receive their own environmental analysis (e.g., NEPA), when project-specific impacts can be identified. Proposals would be evaluated and additional baseline studies or project modification may be required at that time. SEIS Section 3.3.1, Vegetation and Wetlands (Impacts Common to All Action Alternatives) has been revised to include a more detailed description of the range of vehicles and equipment used in modern seismic operations, including fuel hauling and other support activity.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Jorgenson	Janet	-	80336	13	There should be some changes to the paragraph on page 3-120 about initial impacts from seismic exploration, by referring to table 3-31. It seems to me that the 40% in the last sentence should be higher, like about 65%. Moist sedge-willow and moist sedge-shrub with inclusions should be in the second sentence and add to the percentage in the last sentence. The paragraph says 'Moist and dry vegetation types including tussock tundra, shrub tundra, Dryas terraces, sedge-Dryas tundra, and moist sedge-willow tundra are susceptible to disturbance initially due to the presence of tussock-forming sedges and evergreen shrubs, both of which are easily damaged (Jorgenson 2018, Reynolds et al. 2020). These vegetation types correspond approximately to the following land cover classes as defined in this SEIS: ericaceous dwarf shrub, Dryas dwarf shrub, moist sedge-Dryas tundra, shrub-tussock tundra, and tussock tundra. Combined, these land cover classes account for approximately 40 percent of the program area. Note that the type moist sedge-shrub tundra with wet inclusions includes any tundra that is predominantly moist sedge-willow, moist sedge-dryas or tussock tundra but has inclusions of wet sedge, usually polygonized tundra with wet troughs caused by thawing ice wedges. So it does belong with the other moist sedge types.	The text has been revised as suggested.
Jorgenson	Janet	-	80336	14	The next paragraph on page 3-111 could be split in two. The first part is still discussing initial impacts and the last part is about long-term impacts.	The text has been revised as suggested.

U.3.50 Visual Resources

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Proescholdt	Kevin	Wilderness Watch	80104	14	Similarly, the impacts on visual resources of oil and gas development are immense. While there are some improvements in the analysis, the failure to conduct a viewshed analysis is glaring.	The proposed action is for a lease action only, which has potential indirect impacts on visual resources from post-lease activities. Subsequent post-lease activities would require NEPA analysis before occurring. At that time, a detailed list of structures and developments would be available for a proposed activity. The BLM would identify the contrast between existing landscape conditions and proposed changes to the landscape with the aid of simulations, viewshed analyses, and artificial light at night studies, as appropriate.
Brisson	Brook	Trustees for Alaska	80131	475	Many of the socio-economic benefits of the Coastal Plain - including those stemming from its unique, wilderness-dependent recreational values - are integrally connected to the scenic integrity of its natural and undisturbed visual resources. Indeed, two of the three original purposes for the Arctic National Wildlife Range were to preserve its unique wilderness and recreational values.(1291) People visit and value the Arctic Refuge and its Coastal Plain in large part because of its undeveloped character and aesthetics. Oil and gas development is simply incompatible with maintaining those visual resources - and the associated wilderness and recreational values of the Coastal Plain. The draft SEIS analysis of visual resource impacts includes some important improvements over the 2019 DEIS, including a qualitative effort at visual resource inventory, acknowledgment of the lasting adverse impacts of 2D seismic decades after exploration activities, and the conclusion that "development of oil and gas in the program area would initiate an irreversible loss of visual resource quality."(1292) Nevertheless, the analysis remains severely hamstrung by the agencies' ongoing failure to conduct a simple viewshed analysis. (1291) PLO 2214 at 1. (1292) DSEIS at 3-401 to 411.	The proposed action is for a lease action only, which has potential indirect impacts on visual resources from post-lease activities. Subsequent post-lease activities would require NEPA analysis before occurring. At that time, a detailed list of structures and developments would be available for a proposed activity. The BLM would identify the contrast between existing landscape conditions and proposed changes to the landscape with the aid of simulations, viewshed analyses, and artificial light at night studies, as appropriate.
Brisson	Brook	Trustees for Alaska	80131	476	As Groups' pointed out in response to the previous EIS and at scoping, the SEIS must include a thorough analysis of visual resource impacts associated with oil and gas development through a visibility or viewshed analysis that forecasts the extent and severity of impacts on visual resources based on the topography of the program area, locations of visitor use (or, as the draft SEIS now identifies, areas of public concern for scenic quality, including "known travel routes (especially rivers), areas of human habitation, areas of traditional use, and areas near Native allotments" (1293), and general characteristics of anticipated infrastructure.(1294) Such an analysis can readily be prepared using established and scientifically sound methodologies, even with limited information about the precise location of future infrastructure. Indeed, GIS specialist Stuart Smith of True North GIS, LLC prepared such an analysis for the Coastal Plain and submitted it as comments on the 2019 Leasing Program DEIS.(1295) As Mr. Smith's comments concluded: "BLM should fully consider the visibility analysis [he] prepared and ensure that the public and decision-makers are aware of the extensive and significant viewshed impacts associated with development." Without such analysis, the agencies cannot adequately analyze the extent and severity of anticipated visual impacts by alternative, and therefore cannot demonstrate compliance with Refuge recreation and wilderness purposes that are dependent on scenic integrity. Unfortunately, the agencies fail to conduct their own comparable visibility analysis or incorporate Mr. Smith's analysis in the draft SEIS, and then utilize that information to compare and formulate alternatives that avoid or minimize adverse impacts to visual resources - and therefore to the recreational settings and wilderness characteristics and purposes of the Arctic Refuge Coastal Plain. (1293) Id. at 3-403. (1294) 2019 DEIS Comment Letter at 354-58; 2021 Scoping Comment Letter at 196-97. (1295) Our DEIS comments incorporated that analysis by reference. See 2019 DEIS Comment Letter, App. D (Smith viewshed analysis).	The proposed action is for a lease action only, which has potential indirect impacts on visual resources from post-lease activities. Therefore, a detailed visual resource inventory is not that takes into account specific structures or activities is not possible. Subsequent post-lease activities would require NEPA analysis before occurring. At that time, a detailed list of structures and developments would be available for a proposed activity. The BLM would identify the contrast between existing landscape conditions and proposed changes to the landscape with the aid of simulations, viewshed analyses, and artificial light at night studies, as appropriate.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	477	Mr. Smith's analysis shows that visual resource impacts from surface disturbing oil and gas activities and infrastructure are likely to be extensive, regardless of where infrastructure is ultimately located. This is due to the area's topography and narrow geography between the Brooks Range and the Beaufort Sea, bisected by several major river corridors on which most recreational visitors depend. For instance, Mr. Smith's analysis shows that it would be virtually impossible to locate derricks and towers over 30 meters tall anywhere on the Coastal Plain without having them be visible from six major recreational river corridors.(1296) To avoid viewshed impacts from those six river corridors, infrastructure of 15 meters or less in height would need to be located within a small 12% of the Coastal Plain.(1297) When it comes to infrastructure visible from highpoints located within the Mollie Beattie Wilderness to the south, infrastructure of any height (or seismic gridlines and other ground-level disturbance of fragile tundra vegetation) would generally be visible no matter where it is located,(1298) thereby degrading wilderness character.(1299) The visibility analysis also shows that infrastructure of any height located across nearly one-third of the Coastal Plain would be visible from Kaktovik, thereby impacting the aesthetics and experience of residents and subsistence users, the growing number of tourists who visit Kaktovik to view polar bears, and others entering or exiting the Coastal Plain via that community and its airport.(1300) (1296) See id. (Smith viewshed analysis at Figure 11). (1297) See id. (Smith viewshed analysis at Figure 11). (1298) See id. (Smith viewshed analysis at Figure 12). (1299) See supra Section VI.S (1300) See 2019 DEIS Comment Letter, App. D (Smith viewshed analysis at Figure 13).	This proposed action is for a lease action only, which has potential indirect impacts on visual resources from post-lease activities, including seismic and drilling exploration, development, and transportation of oil and gas in and from the Coastal Plain. Subsequent post-lease activities would require NEPA analysis before occurring. At that time, a detailed list of structures and developments would be available for a proposed activity. The BLM would identify the contrast between existing landscape conditions and proposed changes to the landscape with the aid of simulations, viewshed analyses, and artificial light at night studies, as appropriate. Site specific mitigation measures would be identified at that time based on project specifics.
Brisson	Brook	Trustees for Alaska	80131	478	By failing to conduct or incorporate such an analysis, the agencies remain unable to develop and consider alternatives and associated mitigation measures that would avoid or minimize viewshed impacts. At a minimum, the agencies' statement that they will conduct viewshed analyses and photo-simulations at the project level(1301) must be incorporated into a binding stipulation or required operating procedure that requires the lessee and agencies to prepare and then utilize the results of those analyses to prepare a visual resource management plan that avoids, to the maximum extent possible, and minimizes aesthetic impacts as conditions of approval. (1301) DSEIS at 3-404.	The proposed action is for a lease action only, which has potential indirect impacts on visual resources from post-lease activities. Subsequent post-lease activities would require NEPA analysis before occurring. At that time, a detailed list of structures and developments would be available for a proposed activity. The BLM would identify the contrast between existing landscape conditions and proposed changes to the landscape with the aid of simulations, viewshed analyses, and artificial light at night studies, as appropriate.

U.3.51 Water Resources

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Wald	Michael	-	20420	1	The most obvious deficiencies in the analysis of the impacts that I see are, as in previous EIS documents, in regards to fresh water resources. It is no wonder that these impacts are not amply considered here as neither USFWS nor BLM has not engaged in in-depth research on the freshwater systems on the Coastal Plain. Basic measurements from stream gauges have not been consistently collected or funded and the complex dynamics of ground water are unknown. Baseline data on surface water and ground water for the coastal plain is largely absent and this SEIS is making assumptions based on the hydrology of state and federal lands further west. Without baseline data on the hydrology of the coastal plain, based on current data collected in the 1002 area, the analysis of potential impacts can not be conducted. The hydrology of this area is unique and poorly understood. It is hard to imagine an EIS document anywhere else in the nation using natural resource information gathered hundreds of miles from the project area having credibility.	This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the USFWS and BLM will determine which baseline studies may be necessary. The USFWS and BLM recognize that the hydrologic characteristics of the program area differ from other areas of the coastal plain further west, most dramatically the relative lack of lakes and ponds and the presence of perennial freshwater springs, as discussed in Section 3.2.10 Affected Environment (Draft SEIS pages 3-88 to 3-91).
H.	Zach	-	24233	3	The lack of water in the 1002 and approaching the 1002 means temporary infrastructure (i.e., ice roads, ice pads) cannot be assumed to be constructed as readily as developments in Kuparuk, Alpine, or Willow. Impacts to water resources and aquatic resources between Deadhorse and the 1002 area need included in the SEIS analysis in the very least as these resources will be impacted by any exploration activity.	This level of specificity would be determined at the project-level authorization. Site-specific analyses, including those associated with infrastructure in support of oil and gas development, can more realistically be provided when the USFWS and BLM receive an application to permit such infrastructure. The SEIS makes no decisions on such infrastructure except to prohibit it in specified areas of particularly high-value surface resources under some alternatives. ROP 9 requires water withdrawals to be performed in a manner that "maintains natural hydrologic regimes." Potential lessors will be required to determine water needs for proposed development and compare data to see whether water available is suitable for proposed activities. The area between the program area and Deadhorse is outside of the jurisdiction of the USFWS and BLM; any on-the-ground activities outside the program area will require additional NEPA analysis, which typically would include an EIS specific to the proposed development, and will be reviewed by the appropriate management agency at that time.
Stewart	Sarah	-	29334	2	We strongly suggest that stronger protections are provided for the Canning River delta and the Camden Bay area.	Lease Stipulation 1 includes setbacks to protect rivers and streams, including the Canning River in order to "minimize disruption of natural flow patterns and changes to water quality." Setbacks along the Canning River floodplain vary between 1 mile and 3 miles based on alternatives. The Lease Stipulation 2 includes two alternatives in which the Canning River and delta and adjacent lakes are subject to NSO. Lease Stipulations 4 and 9 describe actions and areas of NSO to protect nearshore marine and lagoon waters and barrier islands.
Long	Becky	-	33606	1	How does this change the situation for BLM and USFWS management of an oil and gas program? Obviously those 152 areas were considered important for the protection of fish and wildlife habitat migration and propagation areas, and water quality purposes. How will these areas be protected from water withdrawals by oil and gas program activities? How will these specific areas now be protected with no seniority prior rights in consideration of water withdrawals? The ISF reservation program is under Alaska statute AS 46.15.145, the Alaska Water Use Act. It is: "to reserve sufficient water to maintain a specified point on a stream or a body of water, or in a specified part of a stream throughout a year or specified time." The purposes are: -Protection of fish and wildlife habitat, migration and propagation - Recreation and park purposes -Navigation and transportation purposes -Sanitary and water quality purposes	The USFWS has previously applied for 152 Instream Flow Reservations within the Refuge and program area to ensure the protection of aquatic habitats and wildlife; this has increased to 154 Instream Flow Reservations since the time of the Draft SEIS and has been revised in the text. These reservations have been pending ADNDR adjudication since 1994 and have seniority over any new application for water use. The authors acknowledge that ADNDR is considering changes to the Alaska water regulations. ADNDR has stated they will consult partner agencies during the process of drafting the regulatory changes, and that at this time, no changes to the water reservation regulations have been made. The SEIS is drafted under the current regulatory framework. ROP 9 provides protections at the leasing stage for water quantity and quality. Any future actions or activities are required to receive the appropriate authorizations for water withdrawals.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Long	Becky	-	33606	1	New Information Identified regarding 3.17.10-page 3-91 Water Resources. This information is in response to the following DSEIS statement: The USFWS has applied for 152 Instream Flow (ISF) Reservations in the Arctic Refuge and the project area to ensure the protection of aquatic habitats and wildlife. The applications include 140 lake water reservations, a total of 44,330,000 lake acres, and 12 stream reservations including 116.7 river miles. ISF reservations occur in several branches on the Tamayariak, Itkilyariak, Sadlerochit and Akukoktak Rivers as shown in map 3-20 in Appendix A. These reservations have been pending ADNR adjudication since 1994. The areas in the applications have seniority over any new application for water use (ADNR 2023). In September 2023, the State of Alaska Reservation of Water Program, Instream Flow Reservation, was suspended. The Alaska Reservation of Water Program, Water Resources Section, Division of Mining, Land and Water, the Department of Natural Resources is suspended. I am sure that the USFWS is aware of this. But I want to get this into the public record. I hope that the Final will deal with this new situation. The suspension applies to all the Alaska Department of Fish and Game and the US Fish and Wildlife Service pending applications. This applies to the 152 ISF pending reservation applications in the Arctic Refuge. The existing ISF reservations that have been granted statewide will still be valid in their permitted reservations. I do not believe that there are any granted applications in the Refuge. But pending applications are suspended. The mandated Ten-Year Review Process is suspended.	The USFWS has previously applied for 152 Instream Flow Reservations within the Refuge and program area to ensure the protection of aquatic habitats and wildlife; this has increased to 154 Instream Flow Reservations (adding Canning River and Hulahula River) since the time of the Draft SEIS and has been revised in the text. These reservations have been pending ADNR adjudication since 1994 and have seniority over any new application for water use. The authors acknowledge that ADNR is considering changes to the Alaska water regulations. ADNR has stated they will consult partner agencies during the process of drafting the regulatory changes, and that at this time, no changes to the water reservation regulations have been made. The SEIS is drafted under the current regulatory framework. ROP 9 provides protections at the leasing stage for water quantity and quality. Any future actions or activities are required to receive the appropriate authorizations for water withdrawals.
Long	Becky	-	33606	2	I realize that this is NOT the alternative that you feel you can accept legally. The parameters of the public law have mandated this leasing program. But the CEQ NEPA regulations require a no action alternative. The DSEIS states that this alternative is being carried forward for analyses to provide a baseline for comparing impacts under action alternatives. But it is the only alternative that I can accept. So here are my baseline data recommendations. The first baseline piece of data to inform future action is the subject of my new information in number one. Since 1994, these 152 waterbody areas have been deemed important to reserve adequate water under Alaskan statutes. Now they have no protection. Protection would be important under the action alternatives. The Arctic Refuge Coastal Plain (ARCP) area does NOT have adequate water resources to support oil and gas industrial activities. The area does not have the water resources to fulfill all 5 legislative purposes for the Refuge. An oil and gas program fulfills the Public Law which created the 5th Refuge goal. But fulfilling the fifth goal is at the expense of the other four goals by causing significant negative impacts. The ARCP does not have readily available nor accessible water in high quantities. This differs greatly from the state lands to the west and the NPR-A coastal plain. The ARCP along with those areas make up the North Slope Coastal Plain. The differences in hydrology are important. And even with the more extensive water resources relating to volume in the west, there is a study showing that the amount of withdrawals from the tundra lakes in the National Petroleum Reserve to the west of ARCP, are being regulated and managed without considering the detriment of the waterbody. And that area has more water resources than ARCP.	The USFWS has consulted and will continue to consult with ADNR regarding potential regulatory changes. ROP 9 provides protections at the leasing stage for water quantity and quality. This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the USFWS and BLM will determine which baseline studies may be necessary.
Long	Becky	-	33606	3	The Water and Environmental Research Center at the University of Alaska Fairbanks' 2022 study conclusions are important to consider in respect to the ARCP. The referenced study is Modeling Stream Flow Response to Scenarios of Tundra Lake withdrawal and Seasonal Climate Extremes, Arctic Coastal Plain" research article 10.1029(2022). The Key Points of the Water Resources Research are: -The winter Lake Water Withdrawal (LWW) reduces summer low and average stream flow with the recovery time of up to 3 years. -The winter LWW is not counterbalanced by same year snowmelt recharge as is currently assumed in the land management regulations. -Low rainfall (21% of normal) combined with winter LWW lead to intermittently dry streams in the following 3 summers. Effective land management must consider the combined impact of climate change and the yearly pumped tundra lake water for oil and gas development. Their study occurred in the northeast corner of the NPR-A which has abundant and widely distributed lakes (unlike the ARCP). Most of the water for the ice roads comes from the lakes. Field and modeling efforts demonstrate that LWW is not reliably offset by same year snowmelt. Current land management regulations naturally assume that they are offset. Simulations show 3 years of annual LWW in the same waters results in new hydrologic equilibriums in low flow and runoff that produce several weeks of impassable stream conditions for fish during their migrations. The recovery time for multiple years of LWW is 2-5 years. One year is not enough to replenish surface water deficits. The current state regulations on water withdrawals could cause irreversible system changes for aquatic habitat processes. These study conclusions could be applied to the ARCP. It means that in the ARCP the regulations for water withdrawal must not be based on an assumption that the lakes and other waterways are fully rechargeable yearly. We do not even know whether the snow melt is sufficient to replace water withdrawals. This is my suggestion for improving the implementation of leasing in regard to water withdrawals for the leasing program.	This document was referenced in the Draft SEIS, "Hydrologic modeling suggests that snowmelt may be insufficient to replenish water withdrawal volumes depending on development scenarios and further study is needed (Gadeke et al 2022)." Further site-specific analyses, including those associated with infrastructure in support of oil and gas development, can more realistically be provided when the USFWS and BLM receive an application to permit such infrastructure. The SEIS makes no decisions on such infrastructure except to prohibit it in specified areas of particularly high-value surface resources under some alternatives. Additionally, ROP 9 requires water withdrawals to be performed in a manner that "maintains natural hydrologic regimes".

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Long	Becky	-	33606	4	Water is particularly scarce in the ARCP. There are few open lakes and rivers especially in the winter. These lakes for the most part are shallow. Very little free water is available then. Where will the leasing and operations get their water? I do not think the DSEIS has answered the question of availability of water resources for oil and gas leasing including infrastructure and transportation networks. There is a dearth of data. Page 3-90 has an estimate for volume for about 119 lakes. By the end of winter, there is a 94% reduction in volume. And this is just the known data. These volumes do not account for all lakes. The total available quantity is unknown. It is also an unknown about the available quantity for suitable uses such as for ice road construction or potable uses. The Draft EIS estimated that 1 well uses 420,000 to 1.9 million gallons of water. Each action alternative has satellite pads and 1 anchor pad. Thirty wells can fan out from the average pad. Every mile of an ice road needs 1 million gallons of water. An ice pad takes 500,000 gallons. The daily production of 50,000 barrels of oil would require 2 million gallons daily. US Fish and Wildlife Service has concerns about cumulative impacts of all stages of oil and gas development. Water withdrawals from streams, rivers and springs could have significant detrimental implications to populations and habitat of fish and wildlife. The BLM/USFWS may not have the data to determine the extent of the water resources to be used for the leasing program. The federal agency scientists concluded March 12, 2019, that there were significant information gaps with more studies needed. An example is the seasonality in water quantity and quality. Did those studies happen? Page 3-91 of the Water Quantity Section states that the volume estimates are incomplete. The data there does not account for all lakes and does not represent total available quantity.	This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the USFWS and BLM will determine which baseline studies may be necessary. Additional data and studies since the 2013 EIS have been incorporated, some of which pertain to water quality and water quantity, including a Water Resource Inventory and Assessment (Burnkart et al. 2022).
Long	Becky	-	33606	5	Water is fundamental to oil and gas development fracking. The complexity and size of the fracked wells along with a well length that can go 10,000 feet sideways requires large volumes of water. The two- fold problem of fracking activities pulling water out of the ground and the treatment and disposal of millions of gallons of contaminants removes the water from the natural water cycle. It affects the hydrology of the whole area. In the lower 48 Permian Basin, the surging water use is heavily reliant on aquifers. There is only 15% recycling of water. The ARCP does not have readily available or accessible water in high quantity. Strict stipulations for water use recycling must be included in the Final. Mega fracking projects are "monster fracks".	Oil formations in the Coastal Plains are historically conventional sandstone formations and do not require continuous hydraulic fracturing, like unconventional shale formations in the lower 48. Hydraulic stimulation regulations are codified at 20 AAC 25.283. It is challenging to "pull water out of the ground" due to discontinuous permafrost. Operators on the North Slope use both seawater and water recycling. This SEIS pertains to leasing and site-specific analyses, including those associated with infrastructure in support of oil and gas development, can more realistically be provided when the USFWS and BLM receive an application to permit such infrastructure. The SEIS makes no decisions on such infrastructure except to prohibit it in specified areas of particularly high-value surface resources under some alternatives. ROP 9 requires water withdrawals to be performed in a manner that "maintains natural hydrologic regimes".
Brisson	Brook	Trustees for Alaska	80131	151	The proposed mitigation measures in the required operating procedures and lease stipulations are still insufficient to address impacts to permafrost and soils. Outside of the very limited provisions that relate to off-road travel, it is unclear what measures the agencies will implement to prevent or mitigate against the full range of potential impacts to soil and permafrost resources. The significance and meaning of the changes to ROP 11 in the SEIS with regard to ground operations need to be better explained. ROP 11a for Alternative B indicates ground operations would be allowed when soil temperatures at 12 inches below the tundra surface reach 23 degrees Fahrenheit and snow depths are an average of 9 inches or 3 inches over the highest tussocks.(551) Alternative C now indicates ground operations will be allowed when soil temperatures at 12 inches below the tundra surface reach 23 degrees Fahrenheit and "snow depth and density amounts to no less than a snow water equivalent of 3 inches over the highest tussocks."(552) Alternative D provides that ground operations ground operations will be allowed when soil temperatures at 12 inches below the tundra surface reach 23 degrees Fahrenheit and there is "3 inches measured snow water equivalent."(553) But there is no explanation for why there are these subtle differences between the alternatives, what those differences might mean, or any analysis of the effectiveness of such measures. (551) DSEIS at 2-44. (552) Id. (553) Id.	Each of the action alternatives contain different wording for snow depth and/or SWE requirements to analyze a range of options and resulting potential impacts on resources.
Brisson	Brook	Trustees for Alaska	80131	152	It is also unclear how BLM and FWS anticipate calculating when the snow water equivalent is met and over what area they anticipate making such a determination. Table 3-27 appears to rely on a weighted average snow depth in examining the snow depth in different parts of the Coastal Plain. However, relying on average snow depth could lead to serious problems.	Snow depth varies spatially and temporarily and statistical measures were needed to provide a meaningful dataset for evaluation. This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the USFWS and BLM will determine if additional ROP and monitoring plans are necessary to protect soils and permafrost. ROP 11 has specific timing and snow depth requirements that would provide protection to sensitive areas that may naturally have low snow cover throughout the winter.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	186	The draft SEIS still lacks complete information regarding the water resources of the Coastal Plain. BLM and FWS largely did not obtain any new information to inform its SEIS. While there is some newer air and precipitation data,(662) the data on the major rivers and drainages in the Coastal Plain is still very old and limited to three months of the year (June, July, and August).(663) Without more updated data for stream network hydrography, watershed area, and stream habitat classification, it is unclear how the agency can accurately analyze the impacts of an oil and gas program combined with climate change. Additionally, data on precipitation is not tied to information on water resources. This means that the agencies cannot tie these two pieces together to draw conclusions about recharge rates. It is critically important to understand the impact to recharge rates given the limited freshwater resources on the Coastal Plain overall and the specific Refuge purpose of protecting water quantity. Groups encourage the agencies to obtain this information now. If that is not possible, Groups ask that the agencies include a requirement to obtain all necessary information and conduct necessary studies to obtain baseline information as part of any applicable stipulation or ROP prior to submitting an application to conduct activities on the Coastal Plain. (662) DSEIS App. H at H-1 to H-8. (663) DSEIS App. H at H-9 to H-21.	This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the USFWS and BLM will determine which baseline studies may be necessary. Additional data and studies since the 2013 EIS have been incorporated some of which pertain to water quality and water quantity, including a Water Resource Inventory and Assessment (Burnkart et al. 2022).
Brisson	Brook	Trustees for Alaska	80131	187	Due to the resolution of the current USGS National Hydrography Dataset (NHD), which uses a 20?30 m resolution digital elevation model as the input data source, and limited physiographic relief within sections of the Coastal Plain, the data used to estimate hydrography channel network is inaccurate. The current NHD delineated hydrography network does not provide an accurate assessment of active channel width and floodplain extent for streams (Benda et al. 2015) within the Coastal Plain. It is particularly inaccurate throughout the Coastal Plain in areas with wide braided floodplains and low gradient streams, which are both very common landscape features. High-resolution IfSAR data (resolution 2.5?5 m) is currently available for the entire CP (https://www.usgs.gov/news/technical-announcement/alaska-mapping-update) and the current NHD hydrography needs to be updated with this best available DEM data and verified using high resolution satellite imagery and field techniques in order to accurately quantify the affected environment. An example of an improved Arctic stream channel network that incorporates high resolution IfSAR DEM data can be seen at https://netmap-portal.squarespace.com/dataSEIS . Section 3.2.10 of the draft SEIS uses inaccurate DEM and hydrography data, resulting in an inaccurate and incomplete discussion of the affected environment. This should be revised in the final SEIS.	This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the site-specific hydrology will be updated. Additional data will be incorporated if the NHD dataset is updated prior to publication of the Final SEIS.
Brisson	Brook	Trustees for Alaska	80131	188	Information provided in the draft SEIS is vague, outdated, and inadequate to accurately describe seasonal hydrologic flow processes of Arctic rivers and streams within the Coastal Plain. Hydrological processes within lentic and lotic ecosystems are complex and vary spatially and temporally across the Coastal Plain. Information provided within the draft SEIS is too generalized to accurately and sufficiently describe baseline seasonal streamflow processes. A description of hydrological processes, ideally using empirical hydrological data from the Coastal Plain, should be completed based on hydrologic classification groups following best available methods (see Olden et al. 2012 for overview and appropriate methodology). Much of the information is drawn from areas outside the Coastal Plain, which makes the description of the seasonal hydrologic processes (e.g., streamflow, flooding, snowmelt) inaccurate. Major differences in physiography, geology, and geomorphology for watersheds outside the Coastal Plain inhibit this information from being applicable. For example, information on spring flood dynamics provided within Bowling et al. 2003, which is collected in the Putuligayuk River watershed, cannot be applied broadly for all rivers and streams within the Coastal Plain, which are different ecological landscapes.	There are more than 50,000 miles of streams and rivers in the project area. Additional information on some of the streams described in the SEIS can be found in Water Resource Inventory and Assessment (Burnkart et al. 2022). This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the site-specific hydrology will be updated.
Brisson	Brook	Trustees for Alaska	80131	189	Information provided in the draft SEIS does not adequately describe permafrost hydrology within the Coastal Plain. Arctic hydrology (surface and groundwater flow paths) is significantly influenced by permafrost features and dynamics, which vary heterogenously across the Arctic (Woo et al. 2008; Walvoord et al. 2012). Due to documented change in the Arctic permafrost and associated impacts on hydrology (Liljedahl et al. 2016; Walvoord and Kurylyk 2016), recent permafrost thaw impacts on hydrology need to be adequately described within the draft SEIS for all Coastal Plain watersheds. Additional considerations should be focused on providing a detailed description of various aquifers (i.e., supra-permafrost aquifer, sub-permafrost aquifer, sub-talik aquifer) and flow pathways (i.e., surface runoff, groundwater, taliks, conductivity) across the Coastal Plain in order the adequately describe the baseline ? information that is essential for describing impacts of projected water extraction outlined within the draft SEIS (Appendix B, B-17).	Most of the Arctic Refuge falls in the zone of continuous permafrost. Additional information can be found in Water Resource Inventory and Assessment (Burnkart et al. 2022) and by accessing permafrost monitoring sites at http://www.gwu.edu/~calm . Permafrost thaw is described in sections 3.2.1 and 3.2.8 and 3.2.10. This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the site-specific hydrology will be updated.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	190	Information provided in the draft SEIS does not adequately describe streamflow regimes within the Coastal Plain. The natural flow regime is a critical element that maintains biodiversity and ecosystem integrity in lotic systems and altering the historical flow regime will have negative impacts to aquatic species in rivers and streams. (Poff et al. 1997; Bunn and Arthington 2002) New data on seasonal streamflow regimes that quantifies critical components of flow regimes (i.e., magnitude, frequency, duration, timing, rate of change) needs to be collected and new methods should be used to quantify streamflow metrics (see Olden and Poff 2003; Richter et al. 1996) in order the adequately describe the baseline. Historical information on surface water discharge is sufficient for instream flow water reservations but does not provide enough detailed baseline information to describe critical components of flow regimes, which is essential to understand projected water extraction impacts outlined within the draft SEIS (Appendix B, B-17).	There are more than 50,000 miles of streams and rivers in the project area. Additional information on some of the streams described in the SEIS can be found in Water Resource Inventory and Assessment (Burnkart et al. 2022) This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the site-specific hydrology will be updated.
Brisson	Brook	Trustees for Alaska	80131	191	Information provided in the draft SEIS does not adequately describe stream temperature regimes within the Coastal Plain. Thermal regimes are another critical element that regulates metabolism in fish and invertebrates, influencing growth, phenology and survival, which in turn influences food webs and aquatic species communities (Caissie 2006; Webb et al. 2008; Steel et al. 2017). No information is provided on stream thermal regimes, which is essential and necessary baseline information to quantify impacts of habitat alteration, outlined within the draft SEIS, on aquatic species.	This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the site-specific information will be updated.
Brisson	Brook	Trustees for Alaska	80131	192	Information provided in the draft SEIS does not adequately describe water biogeochemistry within the Coastal Plain. Biogeochemical processes in aquatic ecosystems influence nutrient availability, biofilms, invertebrate abundance, which in turn influence Arctic food webs (Huryn et al. 2005). No significant information is provided on water biogeochemistry in lentic and lotic habitats, which is essential and necessary baseline information to quantify impacts of habitat alteration on water quality.	This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the site-specific information will be updated.
Brisson	Brook	Trustees for Alaska	80131	193	Information provided in the draft SEIS does not adequately describe climate change impacts on water resources within the Coastal Plain. Current and future high-resolution climate data is currently available for the Coastal Plain including upstream areas within each watershed (see Cai et al. 2018) but is not provided in the draft SEIS. Baseline long-term and spatially explicit information on hydrology (e.g., streamflow, water temperature, water quantity, surficial, and groundwater permafrost flow dynamics) is not shown in the draft SEIS and therefore it is impossible to describe or assess the current and future effects of climate change. Due to major differences in physiography, geology, fluvial geomorphology, and climate it is inaccurate to suggest that the information provided in BLM (2018a), which describes lands west of Nuiqsut, is sufficient to describe climate change in the Coastal Plain.	Reference and discussion pertaining to the referenced source (Cai et al. 2018) have been added to the discussion on climate change. This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the site-specific hydrology will be updated.
Brisson	Brook	Trustees for Alaska	80131	194	The agencies continue to rely on analysis from the Reserve to outline the impacts on water resources.(664) For example, BLM and FWS point to the GMT2 Final SEIS and Willow Master Development Plan Final SEIS to explain the climate change impacts on water resources.(665) Similarly, the draft SEIS relies on 2012 and 2004 analysis for the Reserve without explaining why those documents accurately describe the impacts to water resources on the Coastal Plain.(666) Reliance on documents explaining impacts in the western Arctic must be better explained, particularly in light of the fact that the agencies otherwise recognize that the areas are very different in ways that impact water resources.(667) (664) DSEIS App. F at F-23. (665) DSEIS at 3-94. (666) DSEIS at 3-94 to 3-95. (667) See, e.g., DSEIS at 3-88 (noting that lake distribution is very different in the two regions), 3-90 (noting that snow accumulation and distribution is different) & 3-100 (noting that lakes in the Coastal Plain are hydrologically isolated as compared to lakes in the Western Arctic and that its unclear if snowmelt is, therefore, adequate for recharge).	This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the USFWS and BLM will determine which baseline studies may be necessary. The USFWS and BLM recognize that the hydrologic characteristics of the program area differ from other areas of the coastal plain further west, most dramatically the relative lack of lakes and ponds and the presence of perennial freshwater springs, as discussed in Section 3.2.10 Affected Environment (pages 3-88 to 3-91).
Brisson	Brook	Trustees for Alaska	80131	195	There is also a lack of sufficient analysis about the impacts of climate change on water resources. The draft SEIS notes that aufeis are melting at a significantly faster rate from 2010 to 2021 than from 1985 to 2009.(668) There is also a general discussion of the ways that earlier snow melt, increased summer precipitation, and other changes may impact water resources.(669) But the analysis is wholly lacking. It is not enough to simply say "[t]he effect of climate change . . . could influence the rate or degree of direct and indirect impacts."(670) The agencies must actually analyze what those impacts will be in light of the proposed leasing program and its potential impacts on water resources. (668) DSEIS at 3-90. (669) DSEIS at 3-93 to 3-94. (670) DSEIS at 3-95.	This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the site-specific information will be updated.
Brisson	Brook	Trustees for Alaska	80131	196	Regarding the duration of impacts and reclamation, the draft SEIS indicates that the impacts to hydrology and water resources from gravel roads, pads, and airstrips may be limited to the life of the project, but then goes on to note that reclamation is not proven for gravel removal in the Arctic.(671) The agencies should, therefore, expressly state that the impacts to hydrology from the placement of gravel fill will be permanent. The permanence of impacts to water resources from ice roads, ice pads, and seismic activities should also be recognized as potentially permanent, as demonstrated by the fact that seismic exploration from mid-1980s has had permanent impacts on hydrologic patterns.(672) (671) DSEIS at 3-97. (672) DSEIS at 3-98.	Technologies have changed since the 1980s and knowledge on the impact of roads on tundra is more understood and adaptively managed. Roads are prepacked with snow, rollogons have wide low pressure tires, ice chips thicken the road bed, and ROPS are employed to minimize damage to the tundra. See "Ice roads through lake-rich Arctic watersheds: Integrating climate uncertainty and freshwater habitat responses into adaptive management," (Arp 2019) for more information.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	197	Additionally, the list of future development activities that could affect water resources is incomplete, as it does not include use of snow for snow road, ice chipping for ice road and ice pad construction. These must be added and analyzed as well.	Ice road construction is discussed in Section 3.2.10 (pages 3-98 to 3-99) and mitigated by ROP 11 which establishes criteria for ice road construction. Additional discussion on development activities noted (snow roads, ice chipping, and ice pads) has been added. Specific details and impacts related to these activities will be evaluated when a request is submitted to USFWS. This SEIS will not result in the authorization of any on-the-ground activities. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the site-specific information will be updated.
Brisson	Brook	Trustees for Alaska	80131	199	It is hard to discern how much water would be used under each alternative because the agencies do not include that clear. BLM should add a chart to the final SEIS that clearly depicts how much water would be used for all phases of oil and gas under each alternative, based on its development scenarios for each alternative. Regardless, it would be an extraordinary amount of water. It is unlikely that there is even that quantity of water available for use on the Coastal Plain. For example, BLM estimates that there are only 1.1 billion gallons of water available by the end of the winter season, with 80% of that volume coming from seven lakes in the Canning River Delta. (673) FWS has previously found that there is only enough available water in the winter to construct a few miles of ice roads.(674) (673) DSEIS at 3-89. (674) See U.S. Fish & Wildlife Serv., Potential Impacts of Proposed Oil and Gas Development on the Arctic Refuge's Coastal Plain: Historical Overview and Issues of Concern (Jan. 17, 2001) [hereafter "FWS 2001 Report"] (noting that the amount of water available in the winter in the Coastal Plain is only enough to maintain ten miles of ice roads); NRC Report at 210 (noting that "exploration will be hampered by the reduced availability of water during the winter" and that use of ice roads may not be feasible to access all areas).	This level of specificity would be determined at the project-level authorization. Site-specific analyses, including those associated with infrastructure in support of oil and gas development, can more realistically be provided when the USFWS and BLM receive an application to permit such infrastructure. The SEIS makes no decisions on such infrastructure, except to prohibit it in specified areas of particularly high value surface resources under some alternatives. ROP 9 provides protections at the leasing stage for water quantity and quality. Any future actions or activities are required to receive the appropriate authorizations for water withdrawals. A determination of specific water withdrawals and impacts on water quantity cannot be made until site-specific development activities are proposed.
Brisson	Brook	Trustees for Alaska	80131	200	Relatedly, it is unclear how BLM and FWS evaluated the "Outer limit of ice road from source lake" depicted on Map 3-13 and the Potential Ice Road extent on Table 3-26. Is this based on using all of the unfrozen water in lakes, is it based on application of stipulations or ROPs, etc.? This should be clarified in the final SEIS. Groups encourage the agencies to develop maps that would show the available water not only for ice road construction but for all operations by alternative.	Text has been added to clarify how Table 3-26 values and Map 3-13 were developed.
Brisson	Brook	Trustees for Alaska	80131	201	The draft SEIS identifies that modeling shows that snowmelt may not replenish water volume under the development scenario and that additional information is needed.(675) BLM and FWS should evaluate whether they can proceed to adopt a leasing program, including developing stipulations and ROPs that regulate water withdrawals, without this information. This is critical information to have because it informs protections that BLM and FWS may adopt in the ROD and also ensures that the agencies have the information necessary to determine if the Leasing Program protects all of the Coastal Plain's purposes, one of which includes protecting water quality and quantity.(676) To the extent that the agencies cannot gather this information, the agencies should engage in additional modeling, including using climate models, to determine replenishment rates and whether stronger protections are needed to protect the water resources prior to issuing any leases. (675) DSEIS at 3-100. (676) See supra Section IV.C.2.	This level of specificity would be determined at the project-level authorization. Site-specific analyses, including those associated with infrastructure in support of oil and gas development, can more realistically be provided when the USFWS and BLM receive an application to permit such infrastructure.
Brisson	Brook	Trustees for Alaska	80131	202	The cumulative impacts analysis is also incorrect. It states that "[n]o other past, present, and reasonably foreseeable future actions that could affect water resources have occurred or would occur in the program area."(677) One of the reasonable foreseeable future actions that FWS is considering is an annual snow road from the western Coastal Plain boundary to the community of Kaktovik.(678) The use of snow to build this proposed road would impact water recharge, sheet flow, changes in microtopography, and other changes to the hydrologic regime. Additionally, the application identified that the Kaktovik Inupiat Corp. may seek to build a gravel road to the community, which would cause considerable impacts to the water resources of the Coastal Plain. The cumulative impacts analysis needs to be revised to account for this project. (677) DSEIS at 3-106. (678) DSEIS App. F at F-10.	Appendix C, the RFD, was revised to include the potential construction of the annual snow road to Kaktovik. Additionally, cumulative impacts analysis have been revised in the Final SEIS.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	203	There are many instream flow reservation water right applications pending before the Alaska Department of Natural Resources for waterbodies on the Coastal Plain.(679) During the late 1980's and 1990's, the US Fish & Wildlife Service quantified water resources in the 1002 area with stream gauging and lake elevation and bathymetric studies. Based on these investigations, water rights applications were filed for at least 140 lakes and 12 river and stream segments to protect the habitat, migration and propagation of fish and wildlife. The purpose of these water-right reservations is for conservation and they identify the specific water flow necessary to achieve that goal. These reservation applications help meet Refuge purposes including protecting water quantity necessary to support conservation, wildlife populations and habitat. These water rights applications take precedence over other uses of water from these sources.(680) (679) DSEIS at 3-92. (680) AS 46.15.050. Unfortunately, BLM and FWS have still not analyzed the impacts of an oil and gas program on FWS's water rights applications in any detail and no stipulations or ROPs have been proposed that would protect the requested water. Protecting these instream flows further reduces the already limited available freshwater resources on the Coastal Plain but is not considered by in the SEIS. A number of the applications cover the same waters that the agencies identify as unfrozen in the winter and potentially available for water withdrawals to support oil and gas activities.(681) BLM and FWS must analyze the applications, clearly identifying the waters that they are for, the fish, wildlife, and habitat resources that they support, and the impact that they have on potential water withdrawals and usage for oil and gas activities. (681) DSEIS at Maps 3-31 & 3-20.	The USFWS has previously applied for 152 Instream Flow Reservations within the Refuge and program area to ensure the protection of aquatic habitats and wildlife; this has increased to 154 Instream Flow Reservations (adding Canning River and Hulahula River) since the time of the Draft SEIS and has been revised in the text. These reservations have been pending ADNR adjudication since 1994 and have seniority over any new application for water use. The authors acknowledge that ADNR is considering changes to the Alaska water regulations. ADNR has stated they will consult partner agencies during the process of drafting the regulatory changes, and that at this time, no changes to the water reservation regulations have been made. The SEIS is drafted under the current regulatory framework. Site-specific ROPs and Stipulations can more realistically be provided when the USFWS and BLM receive an application to permit such infrastructure. ROP 9 requires water withdrawals to be performed in a manner that "maintains natural hydrologic regimes" and pertains to water quality and quantity. Any future actions or activities are required to receive the appropriate authorizations for water withdrawals. This SEIS will not result in the authorization of any on-the-ground activities. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the USFWS and BLM will determine whether adding reservations of water should occur as a lease stipulation.
Brisson	Brook	Trustees for Alaska	80131	204	BLM and FWS should also include an unwaiveable stipulation that water cannot be removed from these waterbodies in amounts that would reduce the water below the quantities sought in the instream flow reservation application. That quantity is the amount of water that FWS identified as necessary to protect fish and wildlife, and protecting water quantity is a purpose of the Arctic Refuge. BLM and FWS must, therefore, protect the applied-for water quantities.	ROP 9 requires water withdrawals to be performed in a manner that "maintains natural hydrologic regimes" and pertains to water quality and quantity. Any future actions or activities are required to receive the appropriate authorizations for water withdrawals. For the Final SEIS, the USFWS and BLM have reviewed whether lease stipulations can be placed based on instream flow reservation applications since the applications have not been adjudicated by ADNR.
Brisson	Brook	Trustees for Alaska	80131	221	Due to the resolution of the current USGS National Hydrography Dataset (NHD), which uses a 20-30 m resolution digital elevation model as the input data source, and limited physiographic relief within sections of the Coastal Plain, the data used to estimate hydrography channel network is inaccurate. The current NHD delineated hydrography network does not provide an accurate assessment of active channel width and floodplain extent for streams (Benda at al. 2015) within the Coastal Plain or correctly represent proposed stream buffers. It is particularly inaccurate throughout the Coastal Plain in areas with wide braided floodplains and low gradient streams, which are very common landscape features. High-resolution InSAR data (resolution 2.5-5 m) is currently available for the entire Coastal Plain (https://www.usgs.gov/news/alaska-mapping-update) and needs to be updated and verified using high-resolution satellite imagery and field verification techniques in order to accurately quantify the affected environment. An example of an improved Arctic stream channel networks from using high resolution IfSAR DEM data can be seen here at https://netmap-portal.squarespace.com/dataSEIS . At a minimum, this should be required for any project-level approvals.	This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the site-specific hydrology will be updated. Additional data will be incorporated if the NHD dataset is updated prior to publication of the Final SEIS.
Killo	Harrison	-	80166	2	The Arctic's water faces extreme long-term effects from the oil and gas production that will interfere with the quality and life within. We believe that an in-depth analysis of the risks of drilling encroaches on the sanctity of Arctic water and has not been thoroughly considered. We fear something as common as an oil spill could take multiple days to weeks to begin cleaning due to the remoteness of the location. A lack of consistent sunshine and warmer temperatures leave ecosystems recovering for decades. (Borshchevskaia, et al 2022) The EIS explains that in 8 months of the year, this region is "characterized by low precipitation and below-freezing average temperatures during 8 months of the year." This gives limited time for this ecosystem and its water to heal itself with any potential spills or pipe leaks that could potentially take place during warmer months. This water quality goes further than the sanctity of the water itself and its potential accessibility for future usage; multiple specimens of aquatic life are at risk from this project. "During construction of docking sites, short-term water quality changes, such as increased turbidity, could alter habitat for fish and aquatic species and disturb and displace fish. Use of culverts could directly alter aquatic habitats by replacing substrates, banks, or both with metal pipe." (Borshchevskaia, et al. 2022)	This level of specificity would be determined at the project-level authorization. Site-specific analyses, including those associated with infrastructure in support of oil and gas development, can more realistically be provided when the USFWS and BLM receive an application to permit such infrastructure. The SEIS makes no decisions on such infrastructure, except to prohibit it in specified areas of particularly high value surface resources under some alternatives. ROP 9 provides protections at the leasing stage for water quantity and quality. Any future actions or activities are required to receive the appropriate authorizations for water withdrawals. A determination of specific water withdrawals and impacts on water quantity cannot be made until site-specific development activities are proposed.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Killo	Harrison	-	80166	3	Potential long-term, adverse impacts on the surface water quality of freshwater systems, would result if permitted withdrawals exceed available recharge. As mentioned in the EIS, hydrologic modeling suggests that snowmelt may be insufficient to replenish water withdrawal volumes depending on development scenarios, and further study is needed. (U.S. Department of the Interior) We argue that more research be conducted before authorizing permits for water withdrawal. According to data collected by the Alaska Division of Mining, Law and Water ConocoPhillips constructed 1 mile of ice road, which consumed 1 million gallons. (Burnett2018) Additionally, a study conducted by Christopher Arp of the University of Alaska Fairbanks states that "After a single dry summer, according to the study, lakes will need three successive years of snowmelt to be replenished if water is withdrawn in volumes allowed in current regulations."(Gädeke et al. 2022) We would like to see further explanation of water monitoring conducted and ensure that the drought conditions during the summer season, when most water withdrawal occurs, are taken into consideration before allowing diversions.	This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an EIS specific to the proposed development. At that time, the site-specific monitoring plans will be updated. Gadeke et al 2022 was referenced in the Draft SEIS, "Hydrologic modeling suggests that snowmelt may be insufficient to replenish water withdrawal volumes depending on development scenarios and further study is needed (Gadeke et al 2022)."
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	170	NEPA requires the agencies to take a hard look at the direct, indirect, and cumulative impacts of a Coastal Plain oil and gas leasing program on water resources. The Coastal Plain contains a variety of permafrost dominated lentic and lotic ecosystems including large rivers, small, beaded streams and both shallow and deep thermokarst lakes that are sensitive to oil and gas development. Compared to the rest of the North Slope Coastal Plain, the area within the Refuge lacks widespread deep lakes to provide water sources for ice roads.(317) Areas that do contain deep lakes will need to be carefully managed for impacts to surface water connectivity, seasonal flow regime patterns, and processes within aquatic ecosystems. Impacts from improper water withdrawals could include loss of overwintering habitat, degraded water quality, loss of littoral habitat and freezing of fish eggs or benthos.(318) (317) Trawicki et al. (1991); Lyons and Trawicki (1994). (318) Gaboury & Patalas (1984); Turner et al. (2005); Cott et al. (2008). While historically considered as a potential water source for ice roads, lotic environments should be avoided due to the high potential for detrimental aquatic impacts.(319) Due to the lack of available water during the winter months for ice roads, development likely will require construction, maintenance, and use of numerous permanent gravel roads, which in turn have a number of significant impacts.(320) Both short and long-term impacts from roads, stream crossings and development within the riverine floodplain may occur and could include increased sediment transport and deposition, increased frequency of mass wasting and slump events, and degraded water quality and habitat. (321) Associated negative impacts to Arctic fish populations from degraded water quality and habitats are likely to include minor to severe impacts to critical habitat (i.e., spawning, rearing, and overwintering) quality and quantity and to Arctic fish fitness.(322) (319) Bendock (1976). (320) E.g., DFO (2000). (321) E.g., Newcombe & Macdonald (1991); Robertson et al. (2006) (322) E.g., Goldes et al. (1988); Berg and Northcote (1985); Reynolds et al. (1989).	Disruption of flow patterns and impacts to water quality are minimized by lease stipulations 1, 2, and 4. Stipulation 1 describes gravel road setbacks in relation to streams . ROP 9 strives to "maintain natural hydrologic regimes" by restricting the lakes from which water can be withdrawn. ROP 17 minimizes surface impacts. Under Alternative D, construction of gravel roads would be prohibited for exploratory drilling. ROP 18 states that all roads must be designed, constructed, maintained, and operated to create minimal environmental impacts and to avoid or minimize impacts. Alternative D outlines conditions in which roads will be considered for approval. ROP 21 minimizes the impact of development by harvesting tundra within the project footprint, sharing resources among users, and using gravel-reduction technologies.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	171	The draft SEIS fails to fully analyze all the reasonably foreseeable direct, indirect, and cumulative impacts to water resources and hydrology of the Coastal Plain associated with all phases of development. Particularly, as the Tribes detailed in their scoping comments and reiterate here, the agencies must: 1. Identify water withdrawal amounts under each alternative and fully analyze associated impacts to Arctic fish; 2. Identify and analyze a full suite of protective measures to avoid, minimize, and mitigate adverse impacts to fish and hydrology associated with water withdrawals; 3. Ensure adequate information on the spatial and temporal variability of water and dissolved oxygen concentrations in lakes within the study area; 4. Identify and analyze a full suite of protective measures for designation, construction, and maintenance of stream crossings to minimize impacts to water quality, natural flow regimes and ecological processes; 5. Ensure that river and stream setbacks minimize impacts to riparian and floodplain processes; and 6. Fully analyze physiological and behavioral impacts on Arctic fish from impacts to water resources associated with all phases of oil and gas development.	This level of specificity would be determined at the project-level authorization. Site-specific analyses, including those associated with infrastructure in support of oil and gas development, can more realistically be provided when the USFWS and BLM receive an application to permit such infrastructure. The SEIS makes no decisions on such infrastructure, except to prohibit it in specified areas of particularly high value surface resources under some alternatives. ROP 9 provides protections at the leasing stage for water quantity and quality. Any future actions or activities are required to receive the appropriate authorizations for water withdrawals. A determination of specific water withdrawals and impacts on water quantity cannot be made until site-specific development activities are proposed.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	172	Moreover, the agencies must utilize traditional Gwich'in Knowledge about the existing water resources as well as about the threats posed by an oil and gas leasing program to those resources.	The Final SEIS has been updated to incorporate additional Indigenous Knowledge from existing data sources as well as new information provided during the public comment period.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	173	The draft SEIS currently fails to adequately analyze the direct, indirect, and cumulative impacts of water withdrawals on subsistence resources; caribou; migratory waterfowl; vegetation, tundra, and wetlands; and soils and permafrost. Moreover, the draft SEIS currently fails to utilize Traditional Knowledge to describe water resources and impacts to water resources. To comply with NEPA, these deficiencies must be addressed in the final SEIS.	The USFWS BLM is continuing consultation with ANCSA Corporations and has reached out to consult directly with opportunities for participation by local communities, governments, Tribes, co-management organizations, Alaska Native relevant Alaska Native organizations. ROP 9 provides protections at the leasing stage for water quantity and quality. Any future actions or activities are required to receive the appropriate authorizations for water withdrawals. A determination of specific water withdrawals and impacts on water quantity cannot be made until site-specific development activities are proposed.
Newman	Matthew	Native Village of Venetie Tribal Government, Arctic Village Council Venetie Village Council	80190	174	Finally, the Tribes thank the agencies for acknowledging the significant differences between the western Arctic and the Arctic Refuge when it comes to water quantity.(325) Water quantity is a purpose of the Arctic Refuge, and thus its role in the Coastal Plain ecosystem cannot be subservient to oil and gas activities. Adequate information is known at this time both as to necessary instream flows and, in general, how much industry would use for various activities. The tension between these two data points is known now. While it is true, as the draft SEIS notes, that NEPA done at a project-specific stage should address this issue, it is critical now that the program SEIS state clearly the limitations on such projects that may come from lack of available water on the Coastal Plain. Such a clear statement would ensure that industry is well aware of the water quantity limitations on the Refuge Coastal Plain and thus ensure they are able to take this into account as they decide whether, how and where to participate in the program. From a broader perspective, this example illustrates the importance of being specific about whether and how tensions may exist between and among Refuge purposes, and how they will be resolved in such a way as one purpose is not superseded by another. (325) Draft SEIS at 3-90 ("The perennial freshwater springs in the ARCP are unique to the eastern Arctic and don't occur in the Prudhoe Bay oilfields or the NPRA.").	ROP 9 provides protections at the leasing stage for water quantity and quality. Any future actions or activities are required to receive the appropriate authorizations for water withdrawals. A determination of specific water withdrawals and impacts on water quantity cannot be made until site-specific development activities are proposed.
Jorgenson	Karen	-	80272	2	On page 3-99, comparing changes to surface water to ADEC's water quality standards is not a useful way to assess water quality. Using standards that are not region specific is not relevant to the unique ecosystem of this area. The natural levels of solutes are much lower than these standards, and impacts should be assessed in relation to undisturbed levels.	ADEC is the regulatory authority for water quality. For this reason, ADEC water quality standards are used to assess water quality.
Jorgenson	Karen	-	80272	3	The water quality sections barely mention changes to nutrient levels. The thawing of permafrost is well documented to influence aquatic concentrations of carbon and nutrients such as phosphate and ammonium. Small changes can have large impacts on biota in these nutrient poor environments.	Changes in nutrients and potential impacts on fish and aquatic species are discussed in Section 3.3.2.
Jorgenson	Karen	-	80272	4	On page 3-100 it says "nitrates and sulfates levels". There is only one nitrate and one sulfate.	Text modified as requested.
Jorgenson	Karen	-	80272	6	We know very little about the location, depth, and residence time of groundwater on the Costal Plain. This should be stated somewhere.	Section 3.2.10 acknowledges that groundwater is limited. Additional information of groundwater can be found in Water Resource Inventory and Assessment (Burnkart et al. 2022) This level of specificity would be determined at the project-level authorization. Site-specific analyses can more realistically be provided when the USFWS and BLM receive an application to permit such infrastructure. This SEIS utilizes the best available information and will not result in the authorization of any on-the-ground activities. Accordingly, the environmental baseline will be preserved throughout the lease sale process. Any on-the-ground activities will require additional NEPA analysis, which typically would include an SEIS specific to the proposed development. At that time, the site-specific groundwater analysis will be updated.
Jorgenson	Karen	-	80272	7	On page 3-100 you cite Michael Baker Jr. Inc. 2002, which appears to not be peer reviewed nor included in the reference section, as what seems to be the only evidence that water temperature will be unaffected by development. This is not sufficient evidence, and it should be stated that it is unknown what the influence on water temperature will be. As noted elsewhere, removal or compaction of snow that increases the depth of freezing on lakes is clearly a temperature change. Recent work has found that lower permafrost extent in watersheds results in warmer stream temperatures due to increased flow from deeper, cooler water sources (Sjöberg et al. 2021). Other literature on the impacts of development and other controls on arctic water temperatures in permafrost catchments includes Cozzetto et al. 2006, Fabris et al. 2020, King et al. 2016, and Yang et al. 2005. Water temperature is a primary control on ecosystem and organismal processes and should be listed in the main list of potential impacts on page 3-95.	The references have been updated to include all citations.
Jorgenson	Karen	-	80272	11	At the top of page 3-100 the consequences of dust leading to accelerated melting are discussed. It should also be mentioned that accelerated melting leads to flashier river discharge, which impacts erosion among many other things.	The impact of accelerated melting on flashier discharge is discussed in Appendix B, Section B.2.10, "Climate Change" which can cause accelerated erosion. This was clarified in the text.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Long	Becky	-	80452	1	I just hope that you got on in the public record about the fact that the State of Alaska Reservation of Water Program for the in-stream flow reservation is suspended. So, the 152 U.S. Fish and Wildlife Service applications for ISRs that have been pending state adjudication since 1994 are suspended, they will be impending status for who knows how long. This is a political football in the State. There's a lot of politics involved. So the so there are 140 lakes, 12 streams, and 116.7 river miles. The ISRs for them will be suspended. I don't know how this is going to affect the supplemental EIS, and because in the supplemental EIS they say that those pending ISRs were given priority rights.	The USFWS has previously applied for 152 Instream Flow Reservations within the Refuge and program area to ensure the protection of aquatic habitats and wildlife; this has increased to 154 Instream Flow Reservations since the time of the Draft SEIS and has been revised in the text. These reservations have been pending ADNR adjudication since 1994 and have seniority over any new application for water use. The authors acknowledge that ADNR is considering changes to the Alaska water regulations. ADNR has stated they will consult partner agencies during the process of drafting the regulatory changes, and that at this time, no changes to the water reservation regulations have been made. The SEIS is drafted under the current regulatory framework. ROP 9 provides protections at the leasing stage for water quantity and quality. Any future actions or activities are required to receive the appropriate authorizations for water withdrawals.

U.3.52 Wild and Scenic Rivers

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Strassenburgh	John	-	80071	4	The Hulahula, Jago, and Okpilak Rivers (see Map 3-64 Vol. 2) are designated either "eligible" or "suitable" for Wild and Scenic River Status. The draft SEIS should provide for absolute protection of the entire watershed of these three rivers. It should prohibit any oil and gas related activity or development in these watersheds. It should also recommend that the USFWS begin the process of formally granting these three rivers Wild and Scenic River status.	Designation of WSRs is not within the scope of this SEIS.
Proescholdt	Kevin	Wilderness Watch	80104	13	There are four eligible rivers that the agencies are required to protect-- the Canning River, the Hulahula River, the Jago River, and the Okpilak river. However, the DSEIS fails to adequately protect the outstanding remarkable values (ORVs) for the rivers. For example, while the DSEIS suggests mitigation of narrow buffer zones, that fails to protect view sheds from these rivers.	No change made. BLM and USFWS have diligently followed the mandates outlined in the Wild and Scenic Rivers Act.
Brisson	Brook	Trustees for Alaska	80131	464	BLM and FWS's draft SEIS fails to adequately consider the impacts of oil and gas activities on available for addition to the National Wild and Scenic Rivers System or to protect these rivers. Congress passed the Wild and Scenic Rivers Act of 1968 to "protect[] for the benefit and enjoyment of present and future generations" selected Wild rivers that "possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values."(1249) To qualify for inclusion in the Wild and Scenic Rivers system, a river must first be a "free-flowing stream" and the adjacent land must possess at least one outstandingly remarkable value (ORV).(1250) BLM and FWS were required to consider for recommendation all suitable rivers located within the Arctic Refuge in the Wild and Scenic Rivers System in the leasing EIS and to ensure that the proposed project would protect their values. Groups raised BLM and FWS's insufficient protections of the Coastal Plain's eligible rivers ORVs during the prior EIS process.(1251) Unfortunately, the agencies' efforts do not meet Wild and Scenic Rivers Act requirements and fail to adequately protect the Coastal Plain rivers' ORVs. (1249) 16 U.S.C. § 1271. (1250) 16 U.S.C. §§ 1273(b), 1271. (1251) 2019 DEIS Comment Letter at 344-47.	No change made. BLM and USFWS have diligently followed the mandates outlined in the Wild and Scenic Rivers Act.
Brisson	Brook	Trustees for Alaska	80131	465	The Wild and Scenic Rivers Act requires management of eligible rivers to protect and maintain their current values.(1252) The Wild and Scenic Rivers Act mandates that agencies protect the characteristics of rivers that were found to be eligible by utilizing existing management authorities.(1253) Such characteristics include a river's free-flowing condition, water quality, and ORVs.(1254) Agencies must ensure that their actions meet the non-degradation and enhancement standards as set forth in Section 10(a) of the Wild and Scenic Rivers Act.(1255) (1252) 16 U.S.C. §§ 1273(b); CCP EIS App. I at 1. (1253) CCP EIS App. I at 7. (1254) Id. at 25. (1255) Id. at 28-29; 16 U.S.C. § 1281(a) ("Each component of the national wild and scenic rivers system shall be administered in such manner as to protect and enhance the values which caused it to be included in said system.").	No change made. BLM and USFWS have diligently followed the mandates outlined in the Wild and Scenic Rivers Act.
Brisson	Brook	Trustees for Alaska	80131	468	There are four rivers that BLM and FWS were required to protect as eligible rivers, but failed to do so: the Canning River, the Hulahula River, the Jago River, and the Okpilak river.	The BLM and USFWS have followed the mandates outlined in the Wild and Scenic Rivers Act.
Brisson	Brook	Trustees for Alaska	80131	470	BLM does not explain or confront the CCP's findings that there would be negative impacts to ORVs from allowing infrastructure near rivers. If allowing oil and gas development on the Coastal Plain, BLM and FWS must consider impacts to ORVs in light of FWS's management of these rivers and values as set out in the CCP.	No change made. The CCP has been thoroughly considered and integrated by reference throughout the document, addressing concerns about potential negative impacts on ORVs near rivers within the context of oil and gas development.
Brisson	Brook	Trustees for Alaska	80131	471	All four of the rivers discussed above are eligible for "Wild" river classification, denoting minimal access and development and "represent[ing] vestiges of primitive America."(1275) The draft SEIS only lists the above ORV categories, providing no substantive or individual consideration for how to properly sustain the Canning, Hulahula, Jago, and Okpilak rivers' important ORVs.(1276) The substance of the agencies' analysis of an oil and gas program on the rivers is encapsulated in these two sentences: (1275) Id. § 1273(b)(1); CCP EIS App. I at 2. (1276) Id. at 3-391. General impacts resulting from oil and gas development in the program area could include potential soil erosion and habitat fragmentation, which could affect cultural, fish, geologic, recreation, scenic, and wildlife ORVs. The degree of impacts on eligible and suitable WSRs would depend on the proximity of development to the river. (1277) (1277) DSEIS at 3-395. The draft SEIS fails to protect the Coastal Plain's eligible rivers ORVs. The agencies' cursory analysis provides different suggested buffer zones around the high-water marks of each river but does not explain how those buffers protect the specific ORVs for the relevant rivers.(1278) For example, without a visual resources analysis for the eligible rivers, it is unclear how buffers can protect scenery- and recreation-dependent ORVs.(1279) BLM and FWS merely asserted compliance with state water quality standards and "[m]anagement actions that prohibit surface-disturbing activities, including [no surface occupancy], [controlled surface use], and [timing limitations] near the WSRs would provide varying protections for ORVs."(1280) (1278) Id. at 3-396 to -397. (1279) See infra Section V.U. (1280) Id. (internal citation omitted).	No change made. The Affected Environment section establishes the foundation by detailing the current environmental conditions. This furnishes the baseline overview, complemented by references for a more comprehensive and nuanced understanding of the rivers and ORVs. This baseline has effectively set the stage for the Environmental Consequences section, which has taken a hard look in analyzing the anticipated impacts of the alternatives on that environment.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	472	Contrary to maintaining the Wild classification, the draft SEIS acknowledges infrastructure could degrade values.(1281) The draft SEIS states "[i]nfrastructure that is installed within 0.5 mile of any eligible or suitable river, such as bridges, has the potential to downgrade a river's wild classification to that of a recreational classification, which allows some development."(1282) Degrading a river's classification, as BLM and FWS recognize could occur from nearby infrastructure, is not consistent with maintaining ORVs.(1283) While each alternative contains setbacks, there is no further analysis of the level of protections provided by each. The final SEIS should more thoroughly analyze the impacts of an oil and gas program on the individual rivers and their ORVs, and whether stronger and additional protections need to be adopted to protect them. (1281) Id. (1282) Id. (1283) 16 U.S.C. §§ 1273(b).	No change made. While the SEIS has indeed taken a comprehensive look at the analysis of impacts from an oil and gas program on individual rivers and their ORVs, it is crucial to clarify that the SEIS serves as an assessment of impact rather than a determination of the need for stronger and additional protections. Regarding your suggestion for a more thorough analysis of impacts and the consideration of stronger protections in the final SEIS, it's essential to note that the SEIS is designed to assess environmental impacts, and decisions about protective measures fall within the broader decision-making process.
Miller	Pamela A	Arctic Audubon Society	80339	2	We also recommend better evaluation of oil and gas leasing effects on all of the outstandingly remarkable qualities of the Hulahula River as a Recommended Wild and Scenic Rivers which traverses the Coastal Plain. As well, 3 other recommended WSR on the North side of the Brooks Range - Kongakut, Marsh Fork of Canning, and Atigun -- also could be dramatically affected by myriad oil and gas related activities and related petroleum resource and fish and wildlife surveys e.g. overflights, noise, take offs and landings, fuel spills at all phases of oil leasing program. The EIS should evaluate altered patterns of river visitor use as a result of oil activities and infrastructure including pipelines and roads from oil industrialization away from the Hulahula WSR to the 3 other Recommended WSR, as well as from other rivers traversing the Coastal Plain and are commonly boated (increasingly by packrafts).	No changes made. The three other recommended WSR on the North side of the Brooks Range are not within the scope of this SEIS.

U.3.53 Wilderness Characteristics, Qualities, and Values

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Bove	Cliff and Pearl	-	40841	3	In addition, we urge the BLM and the Fish and Wildlife Service to recommend this area for wilderness designation as per the Wilderness Act of 1964.	Wilderness designation is not within the scope of this SEIS. In the Arctic Refuge CCP (USFWS 2015a), the USFWS recommended the lands in the program area for wilderness designation. However, Congress did not act on these wilderness recommendations, and subsequently, the minimal management standard for the Coastal Plain must now be adjusted to account for the oil and gas leasing program required by PL 115-97. The USFWS 2015 CCP ROD recommended wilderness designation by Congress and that USFWS has been managing the Coastal Plain to maintain wilderness characteristics. An act of Congress is needed to formally designate a wilderness area and is outside the scope of this plan.
Grannemann	Ken	-	62117	6	6) Lack of treatment of potential Wilderness designation: Neither the original EIS nor the supplemental discuss the potential for designating the coastal plain of Arctic National Wildlife Refuge as federal Wilderness. After a lengthy scientific review that incorporated much public input, the U.S. Fish and Wildlife Service in releasing a draft Comprehensive Conservation Plan for the Arctic National Wildlife Refuge in 2015 recommended that most of the non-designated wilderness lands in the Arctic Refuge (including the coastal plain) be designated Wilderness. The agency received nearly a million public comments in support of this action, including from scientists, biologists and researchers. Although the Wilderness proposal was withdrawn in the final Comprehensive Conservation plan; the prospect of federal Wilderness designation for the coastal plain still merits full treatment in ongoing deliberations about the future of the area.	Wilderness designation is not within the scope of this SEIS. In the Arctic Refuge CCP (USFWS 2015a), the USFWS recommended the lands in the program area for wilderness designation. However, Congress did not act on these wilderness recommendations, and subsequently, the minimal management standard for the Coastal Plain must now be adjusted to account for the oil and gas leasing program required by PL 115-97. The USFWS 2015 CCP ROD recommended wilderness designation by Congress and that USFWS has been managing the Coastal Plain to maintain wilderness characteristics. An act of Congress is needed to formally designate a wilderness area and is outside the scope of this plan.
Proescholdt	Kevin	Wilderness Watch	80104	2	The SEIS should accurately describe the exceptional wilderness characteristics of the Coastal Plain. The draft SEIS does very little to attempt to protect the Coastal Plain's wilderness characteristic or the designated Wilderness within the Arctic Refuge. To begin, BLM and FWS still fail to account for the wilderness purpose of the Coastal Plain. As explained above, the three purposes from PLO 2214 apply equally to the Coastal Plain, and PLO 2214 specifically includes preserving wilderness values as a purpose. The agencies must acknowledge this purpose, and also acknowledge that it is a priority purpose for the Coastal Plain. Doing so is an important piece in describing the impacts and magnitude of impacts of an oil and gas program on the wilderness characteristics of the Arctic Refuge and Coastal Plain and considering whether protective measures are sufficient. The draft SEIS provides a scant three paragraphs on the wilderness characteristics, qualities, and values of the Coastal Plain, the longest of which is a discussion on the law. This must be revised, and the final SEIS should include a discussion of the findings of all relevant parts of the CCP and the CCP ROD about the wilderness characteristics of the Coastal Plain. BLM and FWS still do not appear to cite to the prior studies that were done on the wilderness values of the Coastal Plain, including the baseline studies in the early 1980s. This information must be included, as it provides support for the enduring wilderness values of the Coastal Plain. Additionally, the area of the Arctic Refuge to the immediate east and south of the Coastal Plain is designated Wilderness: the Mollie Beattie Wilderness Area.	No changes made. The SEIS references and integrates the CCP for an in-depth understanding of wilderness characteristics. The detailed description of the Coastal Plain and Arctic Refuge is encompassed in Chapter 1 of the document.

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Proescholdt	Kevin	Wilderness Watch	80104	3	The final SEIS must accurately analyze the impacts of oil and gas on the wilderness characteristics of the Coastal Plain and the Mollie Beattie Wilderness. The Mollie Beattie Wilderness is "the largest, wildest, and most diverse Wilderness in the National Wildlife Refuge System." It supports a number of uses, such as recreation, subsistence hunting and fishing, and scientific research. BLM and FWS still fail to describe this area and its values. Accurately describing this area is necessary because the agencies must ensure that no oil and gas activities will harm its wilderness characteristics or otherwise run afoul of its management as Wilderness. BLM and FWS continue to summarily state that under all alternatives, oil and gas and related activities "would potentially affect an area's naturalness and opportunities for solitude in the program area." This understates the significant impacts that an oil and gas program would have under any alternative selected, as industrial development is wholly incompatible with wilderness character. The agencies must not downplay these impacts. The 1987 Report found that full or even limited leasing would have major impacts on recreation, wilderness, and esthetics. The agencies now recognize that there will be impacts to the Mollie Beattie Wilderness but include only the simple statement that "[v]iewing oil and gas development in the Coastal Plain from the wilderness would affect the wilderness experience associated with visiting an area where the imprint of human's work is unnoticeable." This is far too simplistic of a statement to capture the impact of an oil and gas program to designated Wilderness. Oil and gas activities will have impacts on the Mollie Beattie Wilderness, including sound, light, visual, and natural systems (including but not limited to hydrology, migration, and permafrost). BLM and FWS must analyze the impacts of the proposed oil and gas program on designated Wilderness and be sure that any program that they propose does not degrade the qualities of the Molly Beattie Wilderness Area and its management under ANILCA and the Wilderness Act. The agencies continue to assert that the impacts to wilderness characteristics will be site-specific. This is incorrect. As the National Research Council (NRC) explained, "[t]he effects of industrial activities are not limited to the footprint of a structure or to its immediate vicinity; a variety of influences can extend some distance from the actual footprint." The NRC also stated: [t]he common practice of describing the effects of particular projects in terms of the area directly disturbed by roads, pads, pipelines, and other facilities ignores the spreading character of oil development on the North Slope and the consequences of this to wildland values. All of these effects result in the erosion of wildland values over an area far exceeding the area directly affected. It the final SEIS, the agencies should recognize that the impacts to wilderness characteristics will occur far beyond specific areas where activities may occur. Regarding BLM's and FWS's analysis of the alternatives, the agencies generally state that there will be the most impacts for Alternative B, fewer impacts for Alternative C, and the fewest impacts for Alternative D. The agencies' basic recognition that there will be greater impacts from one alternative versus another, and that all will have greater impacts than the no action alternative is not an analysis. The agencies must meaningfully engage in an analysis based on the RFD scenario for that alternative and the ability to grant waivers, exceptions, and modifications to stipulations and ROPs. BLM and FWS cannot punt the analysis of the degree and intensity of impacts to wilderness characteristics to the APD phase of development; the agencies must do that analysis now. BLM and FWS's cumulative impacts analysis is also lacking. It makes no mention of the proposed snow road from the western boundary of the Arctic Refuge to the community of Kaktovik, but that project in conjunction with the oil and gas program would have major impacts to wilderness characteristics. This must be thoroughly analyzed in the final SEIS.	No change made. Aside from detailing the potential impact on the wilderness experience from viewing oil and gas development, the issuance of oil and gas leases under Section 20001(c)(1) of PL 115-97 has no direct environmental impacts, as a lease alone does not authorize on-the-ground activities. The potential indirect impacts of future exploration and development activities resulting from lease issuance are considered in the assessment.
Brisson	Brook	Trustees for Alaska	80131	451	The 2020 Leasing Program did very little to attempt to protect the Coastal Plain's wilderness characteristic or the designated Wilderness within the Arctic Refuge. The draft SEIS, unfortunately, does not remedy those shortfalls. To begin, BLM and FWS still fail to account for the wilderness purpose of the Coastal Plain.(1231) As explained above, the three purposes from PLO 2214 apply equally to the Coastal Plain, and PLO 2214 specifically includes preserving wilderness values as a purpose. The agencies must acknowledge this purpose, and also acknowledge that it is a priority purpose for the Coastal Plain. Doing so is an important piece in describing the impacts and magnitude of impacts of an oil and gas program on the wilderness characteristics of the Arctic Refuge and Coastal Plain and considering whether protective measures are sufficient. (1231) See supra Section II.A	No changes made. Regarding wilderness characteristics, the document outlines the significance of Public Land Order 2214 (1960) and delves further into detailing ANILCA Section 101(b) as part of the general statement of intent. The USFWS (2015a, Section 4.1.3.5) describes wilderness characteristics in the Arctic Refuge. The agencies acknowledge this purpose and also recognize it as a priority for the Coastal Plain. This section tiers to and incorporates by reference relevant information while emphasizing the program area location. In the Arctic Refuge CCP (USFWS 2015a), the USFWS recommended the lands in the program area for wilderness designation. However, Congress did not act on these wilderness recommendations, and subsequently, the minimal management standard for the Coastal Plain must now be adjusted to account for the oil and gas leasing program required by PL 115-97.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	452	The draft SEIS provides a scant three paragraphs on the wilderness characteristics, qualities, and values of the Coastal Plain, the longest of which is a discussion on the law. This does a massive disservice to the public, who will not be informed of the exceptional wilderness characteristics of the area. BLM and FWS should fully and accurately describe the wilderness characteristics in the SEIS. While it is true that the draft SEIS cites to the CCP for its description of wilderness characteristics,(1232) there is no summary or discussion of that document, and no independent description of the wilderness characteristics of the Coastal Plain and Arctic Refuge. This must be revised, and the final SEIS should include a discussion of the findings of all relevant parts of the CCP and the CCP ROD about the wilderness characteristics of the Coastal Plain. BLM and FWS still do not appear to cite to the prior studies that were done on the wilderness values of the Coastal Plain, including the baseline studies in the early 1980s. This information must be included, as it provides support for the enduring wilderness values of the Coastal Plain. (1232) DSEIS at 3-391 to 3-392.	No changes made. The SEIS references and integrates the CCP for an in-depth portrayal of wilderness characteristics. The detailed description of the Coastal Plain and Arctic Refuge is encompassed in Chapter 1 of the document.
Brisson	Brook	Trustees for Alaska	80131	453	Additionally, the area of the Arctic Refuge to the immediate east and south of the Coastal Plain is designated Wilderness: the Mollie Beattie Wilderness Area.(1233) The Mollie Beattie Wilderness is "the largest, wildest, and most diverse Wilderness in the National Wildlife Refuge System."(1234) It supports a number of uses, such as recreation, subsistence hunting and fishing, and scientific research.(1235) BLM and FWS still fail to describe this area and its values. (1233) ANILCA § 702(3). (1234) CCP EIS at 4-15. (1235) CCP EIS at 4-16.	No change made. Aside from detailing the potential impact on the wilderness experience from viewing oil and gas development, the issuance of oil and gas leases under Section 20001(c)(1) of PL 115-97 has no direct environmental impacts, as a lease alone does not authorize on-the-ground activities. The potential indirect impacts of future exploration and development activities resulting from lease issuance are considered in the assessment.
Brisson	Brook	Trustees for Alaska	80131	454	Accurately describing this area is necessary because the agencies must ensure that no oil and gas activities will harm its wilderness characteristics or otherwise run afoul of its management as Wilderness. Finally, it is entirely unclear what the purpose is of the discussion on ANCSA conveyances in the wilderness characteristics section.(1236) This should be removed in the final SEIS. (1236) DSEIS at 3-391 to 3-392.	No change made. Aside from detailing the potential impact on the wilderness experience from viewing oil and gas development, the issuance of oil and gas leases under Section 20001(c)(1) of PL 115-97 has no direct environmental impacts, as a lease alone does not authorize on-the-ground activities. The potential indirect impacts of future exploration and development activities resulting from lease issuance are considered in the assessment Additionally, Section 17(b) of ANCSA is provided in this section because ADFG reviews proposed conveyances to Native corporations and recommends that the BLM reserve 17(b) easements to provide public access across Native land to public lands and waters.
Brisson	Brook	Trustees for Alaska	80131	455	BLM and FWS continue to assert that analysis of potential impacts on wilderness characteristics are qualitative. As Groups explained previously, there are ways to quantify and represent impacts to wilderness.(1237) Groups encourage BLM and FWS to apply such techniques and use them in concert with a visual resources analysis to fully analyze the impacts of the proposed oil and gas program alternatives on wilderness character. (1237) 2019 Draft EIS Comment Letter at 341-42.	No change made. Aside from detailing the potential impact on the wilderness experience from viewing oil and gas development, the issuance of oil and gas leases under Section 20001(c)(1) of PL 115-97 has no direct environmental impacts, as a lease alone does not authorize on-the-ground activities. The potential indirect impacts of future exploration and development activities resulting from lease issuance are considered in the assessment.
Brisson	Brook	Trustees for Alaska	80131	456	BLM and FWS continue to summarily state that under all alternatives, oil and gas and related activities "would potentially affect an area's naturalness and opportunities for solitude in the program area."(1238) This understates the significant impacts that an oil and gas program would have under any alternative selected, as industrial development is wholly incompatible with wilderness character. The agencies must not downplay these impacts. The 1987 Report found that full or even limited leasing would have major impacts on recreation, wilderness, and esthetics. (1239) (1238) DSEIS at 3-399.	No change made. Aside from detailing the potential impact on the wilderness experience from viewing oil and gas development, the issuance of oil and gas leases under Section 20001(c)(1) of PL 115-97 has no direct environmental impacts, as a lease alone does not authorize on-the-ground activities. The potential indirect impacts of future exploration and development activities resulting from lease issuance are considered in the assessment.
Brisson	Brook	Trustees for Alaska	80131	457	The agencies now recognize that there will be impacts to the Mollie Beattie Wilderness Area but include only the simple statement that "[v]iewing oil and gas development in the Coastal Plain from the wilderness would affect the wilderness experience associated with visiting an area where the imprint of human's work is unnoticeable."(1240) This is far too simplistic of a statement to capture the impact of an oil and gas program to designated Wilderness. Oil and gas activities will have impacts on the Mollie Beattie Wilderness, including sound, light, visual, and natural systems (including but not limited to hydrology, migration, and permafrost). BLM and FWS must analyze the impacts of the proposed oil and gas program on designated Wilderness and be sure that any program that they propose does not degrade the qualities of the Molly Beattie Wilderness Area and its management under ANILCA and the Wilderness Act. (1239) LEIS at 166. (1240) DSEIS at 3-399.	No change made. Aside from detailing the potential impact on the wilderness experience from viewing oil and gas development, the issuance of oil and gas leases under Section 20001(c)(1) of PL 115-97 has no direct environmental impacts, as a lease alone does not authorize on-the-ground activities. The potential indirect impacts of future exploration and development activities resulting from lease issuance are considered in the assessment

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Brisson	Brook	Trustees for Alaska	80131	458	The agencies continue to assert that the impacts to wilderness characteristics will be site-specific. This is incorrect. As the National Research Council (NRC) explained, "[t]he effects of industrial activities are not limited to the footprint of a structure or to its immediate vicinity; a variety of influences can extend some distance from the actual footprint."(1241) The NRC also stated: (1241) NRS Report 9-11 ("The effects of North Slope industrial development on the physical and biotic environments and on the human societies that live there have accumulated, despite considerable efforts by the petroleum industry and regulatory agencies to minimize them... Continued expansion is certain to exacerbate some existing effects and to generate new ones."). [t]he common practice of describing the effects of particular projects in terms of the area directly disturbed by roads, pads, pipelines, and other facilities ignores the spreading character of oil development on the North Slope and the consequences of this to wildland values. All of these effects result in the erosion of wildland values over an area far exceeding the area directly affected.(1242) (1242) Id. at 148.	No change made. Aside from detailing the potential impact on the wilderness experience from viewing oil and gas development, the issuance of oil and gas leases under Section 20001(c)(1) of PL 115-97 has no direct environmental impacts, as a lease alone does not authorize on-the-ground activities. The potential indirect impacts of future exploration and development activities resulting from lease issuance are considered in the assessment
Brisson	Brook	Trustees for Alaska	80131	459	It the final SEIS, the agencies should recognize that the impacts to wilderness characteristics will occur far beyond specific areas where activities may occur.	No change made. Aside from detailing the potential impact on the wilderness experience from viewing oil and gas development, the issuance of oil and gas leases under Section 20001(c)(1) of PL 115-97 has no direct environmental impacts, as a lease alone does not authorize on-the-ground activities. The potential indirect impacts of future exploration and development activities resulting from lease issuance are considered in the assessment
Brisson	Brook	Trustees for Alaska	80131	460	It is incredibly problematic that the agencies continue to rely on NSO, CSU, or TLs to reduce impacts to wilderness characteristics, and as a way to describe the impacts as different between the alternatives. This is a faulty premise. As described above, the NSO limitation is questionable in terms of its ability to protect areas given the potential waivers, exceptions, and modifications that may be allowed, whether the ROW provision would mandate access in all NSO areas, and the fact that activities like seismic exploration and exploratory drilling may still be allowed in NSO areas. BLM and FWS simply cannot rely on NSO stipulations to protect wilderness characteristics. Reliance on CSUs is problematic because those do not prevent all infrastructure or activities.(1243) Reliance on timing limitations to protect wilderness characteristics is even more off base. Timing limitations do not prevent the development of an area nor on use during a specific time of year; at most they limit use of infrastructure at certain times while still allowing the areas to be fully developed. BLM and FWS must accurately describe the impacts to wilderness characteristics given the likely development that will occur under each alternative and cannot simply point to NSO, CSU, or TLs as reducing impacts. (1243) See, e.g., DSEIS at 2-16 (not allowing CPFs but allowing well pads, roads, airstrips, and pipelines in CSU areas).	No changes made. Aside from outlining the potential impact on the wilderness experience from viewing oil and gas development, the issuance of oil and gas leases under Section 20001(c)(1) of PL 115-97 has no direct environmental impacts, as a lease alone does not authorize on-the-ground activities. The potential indirect impacts of future exploration and development activities resulting from lease issuance are carefully considered in the assessment. NSO, CSU, and TLs are the mechanisms employed when a lease grants the lessee certain rights to drill for and extract oil and gas, subject to further environmental review and reasonable regulation, including applicable laws, terms, conditions, and stipulations of the lease.
Brisson	Brook	Trustees for Alaska	80131	461	Regarding BLM and FWS's analysis of the alternatives, the agencies generally state that there will be the most impacts for Alternative B, fewer impacts for Alternative C, and the fewest impacts for Alternative D.(1244) The agencies' basic recognition that there will be greater impacts from one alternative versus another, and that all will have greater impacts than the no action alternative is not an analysis. The agencies must meaningfully engage in an analysis based on the RFD scenario for that alternative and the ability to grant waivers, exceptions, and modifications to stipulations and ROPs. BLM and FWS cannot punt the analysis of the degree and intensity of impacts to wilderness characteristics to the APD phase of development; the agencies must do that analysis now.(1245) (1244) DSEIS at 3-399 to 3-400. (1245) DSEIS at 3-399; see supra Section V.	No change made. The issuance of oil and gas leases under Section 20001(c)(1) of PL 115-97 has no direct environmental impacts, as a lease alone does not authorize on-the-ground activities. The potential indirect impacts of future exploration and development activities resulting from lease issuance are considered in the assessment.
Brisson	Brook	Trustees for Alaska	80131	462	BLM and FWS's cumulative impacts analysis is also lacking. It makes no mention of the proposed snow road from the western boundary of the Arctic Refuge to the community of Kaktovik, but that project in conjunction with the oil and gas program would have major impacts to wilderness characteristics. This must be thoroughly analyzed in the final SEIS.	Changes made: The proposed snow road is considered in the SEIS as an RFFA and is analyzed in the cumulative impacts section for Special Designations.
Brisson	Brook	Trustees for Alaska	80131	463	Finally, the agencies propose one stipulation to protect the Mollie Beattie Wilderness, which requires an NSO buffer of three miles from the Wilderness boundary and flights to remain above 2,000 feet within 3 miles of the boundary for Alternative C, and additionally no leasing within 3 miles of the Wilderness boundary under Alternative D.(1246) As Groups previously explained, a 3-mile buffer is insufficient to protect wilderness values in the Mollie Beattie Wilderness under any alternatives and regardless of where development is located.(1247) For instance, a simple viewshed analysis demonstrates that infrastructure of any height (or seismic exploration grid lines on the tundra) located across a significant majority of the Coastal Plain would be visible from highpoints within the Mollie Beattie Wilderness.(1248) More stringent protections must be put in place to ensure that the oil and gas program does not degrade the qualities of the Wilderness and or run afoul of management under ANILCA and the Wilderness Act. (1246) DSEIS at 2-22. (1247) 2019 DEIS Comment Letter at 344. (1248) See infra Section VI.U & viewshed analysis submitted with 2019 DEIS Comment Letter.	No change made. ANILCA emphasizes the need to minimize adverse impacts on wilderness values while accommodating traditional uses like aircraft access. A stipulation that effectively balances wilderness protection and reasonable aircraft use could be considered, as Lease stipulation 10 incorporates the phrase "To the extent practicable," indicating a commitment to planning aircraft operations to minimize flights below 2,000 feet within 3 miles of the Mollie Beattie Wilderness Area boundary.

Last Name	First Name	Organization Name	Letter #	Comment Number	Comment Text	Response
Adoko	Ashlee	State Of Alaska	80221	58	Document Reference Universal, Pages 2-22; 3-48; 3-49; 3-185; 3-186; 3- 188; 3-189; 3- 217; 3-388; 3400; 3-409; 3410 Reviewer MD Agency DNR- ANILCA Resource/Topic Comment: Requiring aircraft operations to minimize flights below 2,000 feet within 3 miles of the Mollie Beattie Wilderness Area Boundary (Lease Stipulation 10) is not supported by ANILCA or other authority of the BLM or USFWS. Relatedly, ANILCA modified the Wilderness Act to protect the use of airplanes in conservation system units (including designated wilderness). Visitors accessing the Wilderness area (or adjacent areas) via aircraft will necessarily need to fly lower than 2,000 feet. Additionally, Lease Stipulation 10 creates a buffer zone that is not allowed under ANILCA or other law.	No change made. ANILCA underscores the importance of minimizing adverse impacts on wilderness values while accommodating traditional uses such as aircraft access. If a stipulation strikes a balance between safeguarding the wilderness and allowing reasonable aircraft use, it could find a place. In this case, Lease stipulation 10 incorporates the phrase "To the extent practicable," indicating that aircraft operations should be planned to minimize flights below 2,000 feet within 3 miles of the Mollie Beattie Wilderness Area boundary. Additionally, while ANILCA safeguards aircraft use in wilderness areas, the BLM and USFWS hold authority to regulate flights for specific purposes such as noise reduction, wildlife protection, or public safety.