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May 2008

Northeast National Petroleum Reserve-Alaska

FINAL Supplemental
Integrated Activity Plan/Environmental Impact Statement

Volume 4: Chapters 5 and 6



Alaska



The Bureau of Land Management Today

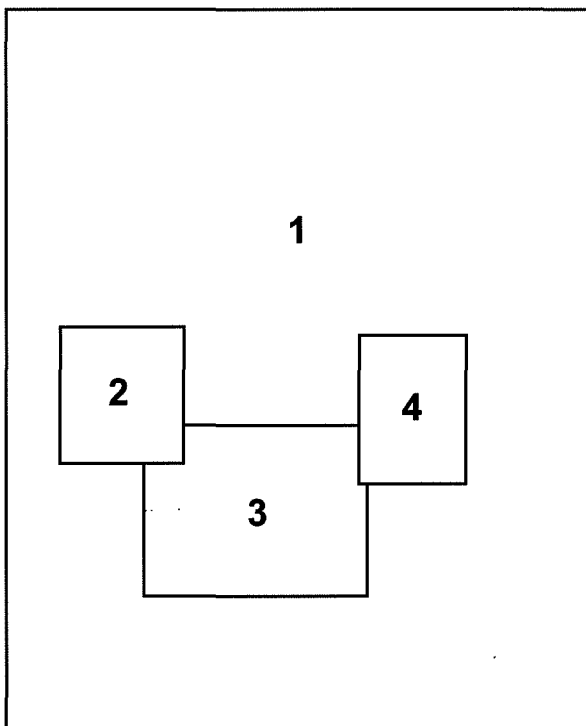
Our Vision

To enhance the quality of life for all citizens through the balanced stewardship of America's public lands and resources.

Our Mission

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/AK/PL-08/016+1610+930



BLM Cover Photos:

1. Teshekpuk Lake, Alaska. Photo by Richard Kemnitz.
2. Caribou, northern Alaska.
3. Drilling Rig at Hunter A well in the Northeast National Petroleum Reserve-Alaska.
Photo by BLM Branch of Energy
4. Canada Goose, northern Alaska.

Northeast National Petroleum
Reserve—Alaska

FINAL

Supplemental Integrated Activity Plan/
Environmental Impact Statement

VOLUME 4:
Chapters 5 and 6

Prepared by

U.S. Department of Interior
Bureau of Land Management
Anchorage, Alaska

In Cooperation with the North Slope Borough

May 2008

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Chapter 2 – Alternatives

Chapter 3 – Affected Environment

VOLUME 2

Chapter 4 – Environmental Consequences (sections 4.1 – 4.6)

VOLUME 3

Chapter 4 – Environmental Consequences (continued: sections 4.7 – 4.12)

VOLUME 5

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CHAPTER V: CONSULTATION AND COORDINATION

5.1 INTRODUCTION

This section summarizes the public and agency outreach BLM has engaged in as it has considered changes to the 1998 Northeast NPR-A ROD. This outreach occurred during both the Amended and Supplemental IAP/EIS processes. This outreach included keeping the public and agencies informed of the process and offered opportunities for the public and agencies to express their concerns and suggest how BLM should proceed. The section also identifies the individuals who prepared the Amended IAP/EIS and this supplement thereto.

5.2 AMENDED IAP/EIS

5.2.1 Formal Scoping

The BLM published a Notice of Intent to Plan (Notice), and a Call for Nominations and Comments (Call), in the *Federal Register* on June 23, 2003, initiating the Amended IAP/EIS process. The Notice and Call asked the public to help BLM identify issues and resources relevant to planning for potential oil and gas leasing. The BLM also asked oil companies to identify their areas of interest within the planning area. The Notice and Call stated that the period during which comments would be taken on the proposal would be from June 23 through September 30, 2003. On September 15, 2003, BLM published a Notice of Extension that extended the period for accepting scoping comments until October 31, 2003. Comments on the proposal could be submitted in writing to the BLM Project Manager or via an interactive website (<http://nenpra.ensr.com>).

Public notices announcing the scoping period were placed in newspapers in or near locations where public meetings were held. These newspapers included the Anchorage Daily News (October 5 and 7, 2003), the Fairbanks Daily News Miner (October 5 and 8, 2003), and the Arctic Sounder (October 9, 16, and 23, 2003).

Six public scoping meetings were held throughout Alaska between October 7 and November 13, 2003. Meetings (and dates) were as follows: Anchorage (October 7), Fairbanks (October 8), Nuiqsut (October 15), Barrow (October 16), Anaktuvuk Pass (October 28), and Atqasuk (November 13). The scoping meetings were conducted in an open-house style. Informational displays were set up, and a formal presentation was given to provide the public with additional information on program goals and objectives. The formal presentation was followed by a public comment session. Written and oral comments were accepted at these meetings, and a court reporter prepared a transcript of the oral comments. A translator was also provided for the public meetings in Atqasuk, Anaktuvuk Pass, Barrow, and Nuiqsut.

In addition, informal public meetings were held in 2004 in Nuiqsut (January 19) and Barrow (January 26) to describe the range of alternatives.

5.2.2 Agency and Organization Meetings

The BLM conducted a two-day workshop in Anchorage, on December 3-4, 2003, to describe and develop stipulations and Required Operating Procedures for use in the Northeast National Petroleum Reserve – Alaska (NPR-A). Attendees included representatives from Federal, state, and local agencies, and representatives from the village of Nuiqsut. In addition, BLM held ongoing discussions with numerous Federal, state, and local agencies and organizations.

5.2.3 Agencies and Organizations Contacted

The following agencies and organizations were contacted during the Amended IAP/EIS process:

- **Federal Agencies**
 - Minerals Management Service
 - National Oceanic and Atmospheric Administration Fisheries Service
 - National Park Service
 - U.S. Army Corps of Engineers
 - U.S. Department of Energy
 - U.S. Environmental Protection Agency
 - U.S. Fish and Wildlife Service
 - U.S. Geological Survey
- **State of Alaska Agencies**
 - Department of Fish and Game
 - Department of Natural Resources
- **Municipal Governments**
 - City of Anaktuvuk Pass
 - City of Anchorage
 - City of Atkasuk
 - City of Barrow
 - City of Bethel
 - City of Fairbanks
 - City of Kaktovik
 - City of Nuiqsut
 - City of Point Hope
 - City of Wainwright
 - Native Village of Point Lay
 - North Slope Borough

The following is a partial list of organizations and officials who were notified that the Final Amended IAP/EIS was available for review and comment:

- **Organizations**
 - Arctic Slope Regional Corporation
 - Alaska Center for the Environment
 - Alaska Coalition
 - Alaska Conservation Foundation
 - Alaska Eskimo Whaling Commission
 - Alaska Miners Association

Alaska Oil and Gas Association
Alaska Outdoor Council
Alaska Wildlife Alliance
Alyeska Pipeline Service Company
Anadarko Petroleum Corporation
ARCO Alaska
Arctic Research Commission
Arctic Slope Native Association
Arctic Slope Regional Corporation
Barrow Whaling Captains Association
BP Exploration (Alaska), Inc.
Bristol Bay Native Corporation
Center for Biological Diversity
Chevron USA
ConocoPhillips Alaska Inc.
Defenders of Wildlife
Ducks Unlimited Inc.
Evergreen Resources of Alaska
Exxon
Forest Oil Corporation
Japan National Oil Corporation
Kuukpik Corporation
Marathon Oil Company
National Audubon Society
Natural Resources Defense Council
Northern Alaska Environmental Center
Resource Development Council
Sierra Club
Sun-West Oil and Gas Incorporated
The Nature Conservancy
Total E&P USA, Inc.
Trading Bay Energy Corporation
Ukpeagvik Iñupiat Corporation
Unocal Oil and Gas Division
Union Texas Petroleum Company
Wilderness Society
Wildlife Management Institute
World Wildlife Fund

- **Elected Officials**

Governor of Alaska Frank Murkowski
U.S. Senator Ted Stevens
U.S. Senator Lisa Murkowski
U.S. Representative Don Young
Alaska State Senators
Alaska State Representatives

5.2.4 Government-to-Government Consultation

The BLM consulted with federally-recognized tribes, consistent with the Presidential Executive Memorandum dated April 29, 1994, on Government-to-Government Relations with Native American Tribal Governments; Executive Order 13175 dated November 6, 2000, on Consultation and Coordination with Indian Tribal Governments; and the January 18, 2001, Department of the Interior – Alaska Policy on Government-to-Government Relations with Alaska Native Tribes. The BLM formally consulted with federally-recognized tribes in Alaska before taking action or undertaking activities that may have a substantial, direct effect on federally-recognized tribes, or their assets, rights, services, or programs. To this end, formal Government-to-Government consultation with the following federally-recognized traditional governments was initiated by written correspondence on August 27, 2003, prior to scoping for the amendment:

- Native Village of Anaktuvuk Pass
- Native Village of Atkasuk
- Native Village of Barrow
- Native Village of Nuiqsut
- Iñupiat Community of the Arctic Slope

The letter sent to all of the tribal governments described the proposed action, and invited the tribes to call if they had questions or wanted to set up individual meetings with the Authorized Officer of the BLM Northern Field Office (currently BLM's Fairbanks District Office). The letter also invited the tribal councils to attend the scoping meeting scheduled for their community. All tribal governments were called approximately two weeks after the letters were sent, in order to solicit questions or potential concerns, and to make sure that the information in the letter was received and understood.

In addition, BLM participated in a number of meetings with federally-recognized tribes and state and local governments in which the topic of the amendment was on the agenda. These meetings, which are listed below, include BLM Subsistence Advisory Panel Meetings, where each panel member is a representative of either a tribal or local government, as well as meetings with the NSB and the local communities of Nuiqsut and Barrow.

- Native Village of Nuiqsut Tribal Council, October 15, 2003 in Nuiqsut, Alaska
- Subsistence Advisory Panel, November 3, 2003 in Atkasuk, Alaska
- Native Village of Atkasuk, November 4, 2003 in Atkasuk, Alaska
- Native Village of Nuiqsut Tribal Council, Kuukpik Subsistence Oversight Panel, and the City of Nuiqsut, December 3-4, 2003 in Anchorage, Alaska
- Subsistence Advisory Panel, December 11, 2003 in Barrow, Alaska
- Kuukpik Subsistence Oversight Panel, January 19, 2004 in Nuiqsut, Alaska
- Native Village of Nuiqsut Tribal Council, January 20, 2004 in Nuiqsut, Alaska
- North Slope Borough, City of Barrow, and Native Village of Barrow, January 26, 2004 in Barrow, Alaska
- Subsistence Advisory Panel, March 16, 2004 in Nuiqsut, Alaska
- Kuukpik Subsistence Oversight Panel, March 18, 2004 in Nuiqsut, Alaska
- Subsistence Advisory Panel, June 10, 2004 in Barrow, Alaska
- Subsistence Advisory Panel, November 9, 2004 in Nuiqsut, Alaska

Comments and issues brought forward through consultation with Native tribal governments focused on the following topics: 1) the purpose and need for amending the 1998 Northeast IAP/EIS; 2) protection of subsistence resources; 3) anticipated levels of oil and gas and related activities (including seismic exploration) as a result of leasing new areas; 4) development of roads to villages and bridges across rivers and streams; 5) retaining the stipulations as they currently exist in the 1998 Northeast IAP/EIS ROD; 6) use of traditional knowledge in making decisions; and 7) local employment opportunities.

During consultation, tribal leaders made a few specific recommendations. These recommendations included making stipulations and ROPs more restrictive; protecting subsistence use areas and resources; limiting restrictions on access to subsistence areas near oil developments; making core calving areas and insect-relief areas for the Teshekpuk Lake caribou herd unavailable for leasing; protecting the primary migration route of the Teshekpuk Lake caribou herd, which is located between the eastern shore of Teshekpuk Lake and the coast; protecting goose molting areas; restricting shipping traffic in areas used by bowhead whales; protecting cabins and camps; seeking ways to increase employment opportunities with oil companies on the North Slope; and adequately addressing the health and social impacts of oil and gas leasing on the residents of the North Slope. All comments and recommendations were received verbally during meetings with individual tribal councils.

5.2.5 Public Review and Comment on the Draft Amended IAP/EIS

The Notice of Availability (NOA) of the Draft Amendment to the Northeast National Petroleum Reserve-Alaska Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) and the Announcement of Public Subsistence-Related Hearings Schedule was published in the Federal Register on June 9, 2004. The public comment period was originally scheduled from June 9, 2004, through August 8, 2004, however, it was extended through August 23, 2004. Public notices announcing the comment period were placed in newspapers with circulation in or near locations where public meetings were held. These newspapers included the Arctic Sounder (August 8 and 15, and October 28, 2004) and Tundra Drums (August 12 and November 11, 2004). Public service announcements were broadcasted on radio station KBRW from July 27 through August 17, and during late October through November 2004. The BLM issued a press release on June 9, 2004, notifying the public that the Draft Amended IAP/EIS was available for public review, and the schedule for public comment and ANILCA 810 subsistence hearings. Notices were posted at public gathering places in Nuiqsut, Barrow, Anaktuvuk Pass, and Atkasuk, all located on the North Slope of Alaska, and Bethel, Alaska, located on the Yukon Delta. Information on the Draft Amended IAP/EIS was also posted on the interactive website (<http://nenpra.ensr.com>). The public was able to access the website to download a copy of the Draft Amended IAP/EIS and provide their comments (including attachments). Comments and attachments posted to the website were incorporated into a database for later analysis by the core planning team.

Public and subsistence hearings were held in Anchorage on June 28, Fairbanks on June 29, Washington D.C. on July 1, Anaktuvuk Pass on August 3 and November 8, Nuiqsut on August 9 and December 1, Atkasuk on August 10 and November 4, Barrow on August 12 and November 5, and Bethel on August 17 and November 11, for the BLM to provide an overview of the alternatives and to take public comments and subsistence testimony. Over 214,660 comments were received on the Draft Amended IAP/EIS. These included letters, electronic mail, facsimiles, comments and attachments posted to the project website, and comments provided at the public hearings. A summary of the comments received and specific comments and responses

are presented in Volume II, Chapter 6, of the Final Amended IAP/EIS. All comment letters were reproduced on the CD located in the back pocket of Volume I of the Final Amended IAP/EIS.

5.2.6 Development of the Final Preferred Alternative

After completion of the public hearings and closure of the public comment period, the core planning team, resource staff, and management met to review the comments and alternative proposals and to develop the BLM's final Preferred Alternative for the Final Amended IAP/EIS. Several alternative proposals were received. These included proposals to close or open additional areas to leasing and development; place greater or lesser restrictions on the types of activities allowed under stipulations and ROPs; and combine elements of two or more alternatives (e.g., select Alternative A, but replace the 1998 stipulations with stipulations and ROPs developed for Alternative B).

During the comment period on the Draft Amended IAP/EIS, the USFWS submitted a proposal that would have left approximately 296,000 acres northeast of Teshekpuk Lake unavailable to oil and gas leasing. The full text of the agency's letter can be read on the CD included with the Final IAP/EIS (see Comment Number 197619; U.S. Fish and Wildlife Service at Anchorage). This is an increase of 83,000 and 85,000 acres that would have been made unavailable for leasing as compared to Alternative B (Preferred Alternative in Draft Amended IAP/EIS; 213,000 acres unavailable for leasing; Map 2-2), and the final Preferred Alternative (Alternative D; 211,000 acres in Teshekpuk Lake unavailable for leasing; Map 2-4), respectively. The USFWS believed their proposal would provide additional protection for molting brant and other wildlife.

An alternative proposal was also submitted by ConocoPhillips Alaska, Inc. The full text of the company's letter can be read on the CD included with the Final IAP/EIS (see Comment numbers 196557 and 197611; ConocoPhillips Alaska, Inc.). Their proposal would have allowed for oil and gas leasing, exploration, and development within portions of the area closed to leasing under Alternative B. ConocoPhillips believed that their proposal would provide adequate protection for caribou and molting geese, while providing additional lands for oil and gas development.

The BLM took these proposals and other public comments into consideration when reviewing the alternatives developed for the Draft Amended IAP/EIS. Based on these comments, BLM developed a final Preferred Alternative (Alternative D) for the Final Amended IAP/EIS. This alternative allowed for some oil and gas development in the 213,000-acre no-lease area identified under Alternative B (Map 2-4). However, this alternative also provided protection for geese, caribou, subsistence, and other resources found to the north and east of Teshekpuk Lake, by prohibiting permanent oil and gas facilities (excluding pipelines and roads in some areas) on 374,000 acres (Alternative B protects 213,000 acres), and limiting the amount of development (maximum of 300 acres) that could occur within each of seven lease tracts to the north of the lake (Map 2-4). This alternative also deferred leasing of Teshekpuk Lake (211,000 acres). With the development of the final Preferred Alternative, BLM had developed a range of alternatives that encompassed the range of alternatives submitted by the public and agencies.

5.2.7 Development of the Record of Decision

The BLM received approximately 500 comments from the public following the Notice of Availability (January 28, 2005) of the Final Amended IAP/EIS. Many of the comments objected to the contents of BLM's Preferred Alternative as presented in the Final Amended IAP/EIS and restated arguments that were made by various organizations and individuals during the comment period on the Draft Amended IAP/EIS. The majority of the comments did not contain any recommendations for technical improvements of the document. However, BLM considered all of the comments received, including those from the NSB, the Kuukpik Corporation representing the City of Nuiqsut, and the Ducks Unlimited Pacific Region, which all contained various recommendations for changes to the Final Amended IAP/EIS Preferred Alternative. The ROD adopted clarifications and minor modifications to the Preferred Alternative in response to these comments. All of the modifications made in the ROD provided additional mitigation of the impacts of oil and gas activities on surface resources, thereby increasing the protection provided for important surface values in the planning area, including Special Areas.

5.3 SUPPLEMENTAL IAP/EIS

5.3.1 Development of the Draft Supplemental IAP/EIS

In undertaking a Supplemental IAP/EIS, BLM is not required to conduct formal scoping (40 CFR 1502.9(c)(4)). Nevertheless, in issuing a Notice of Intent to prepare the supplement on December 4, 2006, BLM invited the public to comment on issues of interest, and particularly sought recommended mitigation measures. The comments received expressed general support or opposition to leasing additional areas of the planning area (particularly north and east of Teshekpuk Lake) and to changes in the 1998 stipulations. They also offered suggestions for public health-related mitigation measures, changes to the management alternatives presented in the Amended IAP/EIS, and perspectives on post-Amended IAP/EIS events that should be considered in the Supplemental IAP/EIS. Finally, some letters cited recent studies that have provided fresh information for this Supplemental IAP/EIS. The following organizations/agencies submitted comments:

State of Alaska

Alaska Center for the Environment, Alaska Coalition, Alaska Wilderness League, Audubon Alaska, Natural Resource Defense Council, Northern Alaska Environmental Center, Sierra Club, The Wilderness Society, Trustees for Alaska, Center for Biological Diversity, Earthjustice (joint letter)

Anadarko Petroleum

ConocoPhillips Alaska, Inc.

Ducks Unlimited

North Slope Borough

U.S. Environmental Protection Agency

U.S. Fish and Wildlife Service

Western Arctic Caribou Herd Working Group

Wildlife Conservation Society

Wildlife Society

The BLM has taken the comments into consideration, including presenting in this supplement potential public health-related mitigation measures, assuring that the alternatives remain

adequate, revising the analysis to address events that have occurred since the Amended IAP/EIS, and incorporating information from recent studies in the analysis.

The BLM has updated and benefited from the advice of the Alaska Resource Advisory Council, a fifteen-member group representing a broad spectrum of Alaskan government, industry, and Native and environmental organizations at public meetings in December 2006 and May 2007 in Anchorage and February 2007 in Barrow.

The BLM has especially benefited from the participation of the North Slope Borough as a cooperating agency in the Supplemental IAP/EIS. The BLM and the NSB entered into a Memorandum of Understanding on January 17, 2007 that defined their respective roles and responsibilities in the IAP/EIS. The NSB has reviewed sections of the IAP/EIS as they have been produced and offered helpful corrections and suggestions for improvement, including suggestions for mitigation measures. The Borough has made an important contribution by developing the discussion on public health, a subsection not previously incorporated in BLM's NPR-A plans. (Although this document has benefited from the input from the many NSB specialists with extensive knowledge of the people, resources, and uses of the planning area, BLM bears ultimate responsibility for the Supplemental IAP/EIS).

The BLM initiated tribal consultation through letters sent to six tribes in December 2006. The letters were sent to:

- Native Village of Anaktuvuk Pass
- Native Village of Atkasuk
- Native Village of Barrow
- Native Village of Nuiqsut
- Native Village of Wainwright
- Iñupiat Community of the Arctic Slope

The letters to the tribes initiated government-to-government consultation and requested input particularly on measures that could reduce impacts to resources and uses that could be impacted by oil and gas activities. The tribes were invited to provide input not only during the initial commenting period, but throughout the planning process.

In a letter dated February 1, 2007, BLM reinitiated consultation with the Alaska SHPO as part of Section 106 consultation under the NHPA to determine how proposed industrial activities could impact cultural resources listed on or eligible for inclusion in the NRHP. Consultation with the SHPO is ongoing and will be completed by the time of the signing of the ROD. Formal consultation with the SHPO also may be required during permitting and NEPA review of individual oil industry proposals.

The BLM reinitiated consultation with the USFWS and NOAA Fisheries Service as required under Section 7 of the ESA with letters of March 20, 2007. The letters included a description of the supplement's contemplated actions, notified the agencies that BLM intends to prepare new Biological Assessments (BAs), and identified the threatened, endangered, and proposed species that the BAs would address. The BLM will prepare the BAs; the ROD will not be signed until the BAs are completed and consultation is concluded.

The BLM is consulting with the State of Alaska to ensure that the mandates of the CZMA are met. The required compliance documentation will be included in the Supplemental IAP/EIS ROD.

5.3.2 Development of the Final Supplemental IAP/EIS

The NOA for the Draft Supplemental IAP/EIS and the EPA's notice of the IAP/EIS's availability for comment were both published in the Federal Register on August 24, 2007, beginning the comment period. The original notice required that comments be received within 60 days, but the comment period was subsequently extended to November 6, 2007. Notice of the extension was published in the Federal Register on October 12, 2007. The BLM published a news release on August 20 announcing the issuance of the Draft Supplemental IAP/EIS and a newsletter, which described the IAP/EIS and provided information on public meetings and other means to submit comments. Public notices announcing the comment period were placed in newspapers with circulation in or near locations where public meetings were to be held. These newspapers included the Anchorage Daily News, Arctic Sounder, Fairbanks News-Miner, and Tundra Drums. Public service announcements were submitted to radio stations in Anchorage, Barrow, Bethel, and Fairbanks, and announcements were also made over shortwave radio in most, if not all, of the smaller North Slope communities. Flyers were provided in each North Slope community and in Bethel to notify residents of the meetings and the North Slope Borough provided additional notice and held meetings in the smaller communities within the Borough to help prepare residents for the meetings BLM held. The BLM also provided access to the Draft Supplemental IAP/EIS, other relevant documents, a schedule of the public meetings, and information on how to comment on its website.

Comments were able to be communicated by mail, hand delivery, fax, through a website form provided at BLM's website dedicated to the Supplemental IAP/EIS, and through public meetings. Public meetings were held in the following communities:

- Barrow, September 24
- Atkasuk, September 25
- Wainwright, September 26
- Anchorage, October 1
- Bethel, October 2
- Washington, D.C., October 4
- Anaktuvuk Pass, October 9
- Fairbanks, October 10
- Nuiqsut, October 11

The meetings in Barrow, Atkasuk, Wainwright, Anaktuvuk Pass, and Nuiqsut also served as hearings on subsistence pursuant to ANILCA Section 810. Approximately 146,400 communications were provided to BLM on the Supplemental IAP/EIS. For more extensive discussion of the nature of the comments as well as responses to the comments, see Chapter 6.

After closure of the comment period, the BLM considered the comments. Comments relevant to the alternatives, including the stipulations and ROPs, and the impacts of the alternatives were considered in developing a Preferred Alternative. Multidiscipline meetings of members of the planning team and management and, in some cases, representatives of the NSB discussed potential components of the Preferred Alternative. These discussions helped to shape a modified Alternative D that has been designated as the Preferred Alternative. Although the NSB participated in discussions regarding formulation of the Preferred Alternative, the final determination of the elements of the Preferred Alternative are the responsibility of the BLM and the Borough's participation does not indicate its implicit or explicit support for the Preferred Alternative.

5.4 LIST OF PREPARERS

5.4.1 List of Preparers of the Amended IAP/EIS

The following individuals participated in preparing the Amended IAP/EIS. The list of individuals includes the individuals' company/agency and role in the Amended IAP/EIS. Companies included ENSR International (ENSR); Booz, Allen, and Hamilton (BAH); LGL Alaska Research Associates, Inc. (LGL); Northern Economics, Inc. (NEI); Planera, Inc. (Planera), and Stephen R. Braund and Associates, Inc. (SRBA). Bureau of Land Management offices included the Alaska State Office (ASO) and the Northern Field Office (NFO; currently the Fairbanks District Office). MMS specialists were located in Anchorage.

- Anderson, Kimberly (ENSR; Technical Writer)
- Armstrong, Gary (BAH; Alternatives Development Specialist)
- Baldvieso, Alan (SRBA; GIS Specialist)
- Banet, Art (BLM-ASO; Coal Resources and Seismic)
- Berg, William (ENSR; Geology and Oil and Gas Exploration and Development)
- Berry, Robert (ENSR; Water Resources)
- Bibles, Dean (BAH; IAP/NEPA Advisor)
- Bisson, Henri (ASO; BLM State Director)
- Braund, Stephen (SRBA; Cultural Resources and Subsistence)
- Brelsford, Taylor (BLM-ASO; Sociocultural Economist)
- Brumbaugh, Rob (BLM-ASO; Physiography)
- Burden, Patrick (NEI; Economics)
- Childs, Susan (BLM-ASO; BLM Project Manager)
- Craig, Jim (MMS; Petroleum Geology, Oil and Gas Assessment, and Oil and Gas Exploration and Development Activities)
- Cuyno, Leah (NEI; Economics)
- Delaney, Roger (BLM-NFO; Recreation and Wilderness Resources)
- Dougherty, Sean (BAH; GIS Specialist)
- Ellsworth, Steven (ENSR; Assistant Project Manager)
- Erickson, Ara (ENSR; Editor and Document Production)
- Fechhelm, Robert (LGL; Fisheries)
- Flaming, Barry (ENSR; Soil, Sand, and Gravel)
- Flora, Susan (BLM-NFO; Hazardous Materials)
- Funk, Dale (LGL; Vegetation and Wetlands and Floodplains)
- Gilders, Michelle (LGL; Terrestrial Mammals)
- Goodwin, Randy (BLM-NFO; Off Highway Vehicles and Recreation)
- Grover, Elizabeth (SRBA; Section 106 Consultation and Subsistence)
- Hammond, Tim (BLM-NFO; GIS Specialist)
- Haskell, Sean (LGL; Caribou Biology)
- Hilsinger, Erik (SRBA; Traditional Knowledge and Subsistence)
- Huebner, Darek (BLM-NFO; Soils, Gravel, and Physiography)
- Kasterin, Mike (BLM-ASO; Socioeconomics)
- Kemnitz, Richard (BLM-NFO; Water Resources)
- Kelly, Lon (BLM-ASO; Recreation)
- King, Robert (BLM-NFO; Cultural Resources and Paleontological Resources)
- Kirschbaum, Sara (BAH; GIS Specialist)
- Kleven, Mike (BLM-NFO; Northern Field Office Environmental Planning Coordinator)
- Kosnik, Kristine (BLM-NFO; GIS Specialist)

- Koss, Lee (BLM-ASO; Air Quality and Soils)
- Kunz, Michael (BLM-NFO; Cultural Resources and Paleontological Resources)
- Long, Alissa (ENSR; Wetlands)
- McCaa, Craig (BLM-NFO; Public Affairs Specialist)
- McClain, Holli (BLM-NFO; Visual Resources)
- McIntosh, Stacie (BLM-NFO; Cultural Resources, Subsistence, and ANILCA 810 Analysis)
- Meares, Don (BLM-NFO; Physiography, Sand and Gravel, Oil and Gas Exploration-Environmental Status)
- Mundy, Nancy (NEI; Economics)
- Munson, Kim (ENSR; Paleontology)
- Nigro, Debbie (BLM-NFO; Avian Species and Threatened and Endangered Species)
- Nordmann, Jerry (BLM-NFO; Lands/Realty)
- Paulson, Merlyn (ENSR; Visual Resources)
- Paulus, Stuart (ENSR; Project Manager)
- Payne, John (BLM-ASO; Threatened and Endangered Species)
- Randall, Valerie (ENSR; NEPA Specialist)
- Rodrigues, Robert (LGL; Avian Biology Specialist)
- Scheetz, Vince (ENSR; Air Quality)
- Schneider, Robert (BLM-NFO; NFO Director)
- Servoss, Shawn (BLM-NFO; GIS Specialist)
- Sharpe, Margaret (ENSR; Editor)
- Strom, Bernhard (Planera; Realty, Land Use, Transportation, and Recreation)
- Thomas, Jane (ENSR; Petroleum Engineering and Spills and Hazardous Materials)
- Tol, Dennis (BLM-ASO; Fisheries)
- Whitman, Mathew (BLM-NFO; Fisheries)
- Williams, Michael (LGL; Marine Mammals)
- Wilson, Curt (BLM-ASO; Chief Planner/Environmental Coordinator)
- Wolf, Janet (ENSR; Public Participation)
- Worley, Mike (BLM-NFO; Lands/Realty)
- Worthey, Marshall (BAH; GIS Specialist Public Lands)
- Yokel, Dave (BLM-NFO; Terrestrial Mammals and Vegetation)

5.4.2 List of Preparers of the Supplemental IAP/EIS

The following individuals have participated in preparing the Supplemental IAP/EIS. The list of individuals includes the individuals' institutional affiliation and role in the Supplemental IAP/EIS. The institutions include the Bureau of Land Management (BLM), primarily its Alaska State Office (AKSO) and Fairbanks District Office (FDO), and the North Slope Borough (NSB).

- Archer, Scott (BLM-Denver Service Center; Meteorology and Climate, Air Quality)
- Ardizzone, Chuck (BLM-AKSO; Subsistence, Sociocultural Systems, Environmental Justice, ANILCA 810)
- Ashley, Noah T., Ph.D. (NSB; Wildlife Biologist)
- Bacon, Joshua (NSB; Biologist)
- Brumbaugh, Robert (BLM-AKSO; Petroleum Resources, Sand and Gravel Resources, Oil and Gas scenario)
- Capps, Julie (BLM-AKSO; Mapping)

- Diel, Bill (BLM-AKSO; Oil and Gas scenario)
- Delaney, Roger (BLM-FDO; Recreational and Wilderness Resources)
- Ducker, James, Ph.D. (BLM-AKSO; IAP/EIS Planning Leader, Special Areas)
- Flora, Susan (BLM-FDO; Hazardous Materials)
- George, Craig (NSB; Wildlife Biologist)
- Gibson, Caron (BLM-AKSO, Technical Editor)
- Hamfler, Cindy (BLM-FDO; Mapping)
- Hanns, Cyd (NSB; Wildlife Research Specialist)
- Harvey, Susan (NSB; Consultant)
- Hollen, Bruce (BLM-AKSO; Birds, Mammals, BLM Special Status Species)
- Hughes, Layla (NSB; Assistant Borough Attorney)
- Kasterin, Mike (BLM-AKSO; Economy)
- Kelly, Lon (BLM-FDO; Arctic Field Office Manager)
- Kemnitz, Richard (BLM-FDO; Water Resources, Wetlands and Floodplains)
- King, Robert, Ph.D. (BLM-AKSO; Paleontological Resources, Cultural Resources)
- Kleven, Mike (BLM-FDO; Fairbanks IAP/EIS Planning Coordinator)
- Kosnik, Kristine (BLM-FDO; Mapping)
- Koss, Lee (BLM-AKSO; Soils Resources)
- Kunz, Mike, Ph.D. (BLM-FDO; Paleontological Resources, Cultural Resources)
- Lavin, Susan (BLM-AKSO; Land Ownership, Land Uses)
- Lohman, Tom (NSB; Environmental Resource Specialist)
- Lonnie, Thomas R. (BLM-AKSO; State Director)
- Holli McClain (BLM-FDO; Outdoor Recreation Planner)
- McIntosh, Stacie (BLM-FDO; Subsistence, Sociocultural Systems, Environmental Justice, ANILCA 810)
- Nigro, Debbie (BLM-FDO; Birds)
- Overbaugh, Bill (BLM-AKSO; Recreational and Wilderness Resources)
- Pederson, Michael (NSB; Subsistence Research Coordinator)
- Person, Brian, Ph.D. (NSB; Wildlife Biologist)
- Rosa, Cheryl, Ph.D., DVM (NSB; Research Veterinarian)
- Schneider, Robert (BLM-FDO; District Manager)
- Standley, Jeanne (BLM-AKSO; Vegetation)
- Standley, Larry (BLM-AKSO; Physiography, Soils Resources, Water Resources, Wetlands and Floodplains, Coastal Zone Management)
- Suydam, Robert (NSB; Wildlife Biologist)
- Svejnoha, Wayne (BLM-AKSO; Hazardous Materials)
- Taylor, Carol (BLM-AKSO; Coastal Zone Management)
- Theisen, Skip (BLM-FDO; Wildland Fire)
- Tol, Dennis (BLM-AKSO; Fish)
- Wernham, Aaron, M.D. (NSB; Consultant\Physician)
- Whitman, Matthew (BLM-FDO; Fish)
- Worley, Mike (BLM-FDO; Land Ownership, Land Uses)
- Yokel, Dave, Ph.D. (BLM-FDO; Vegetation, Terrestrial Mammals)

CHAPTER 6: COMMENTS AND RESPONSES

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6.3	SUBSTANTIVE RELEVANT COMMENTS.	6-13

CHAPTER 6: COMMENTS AND RESPONSES

6.1 INTRODUCTION

This chapter presents comments BLM received on the Northeast National Petroleum Reserve-Alaska Draft Supplemental Integrated Activity Plan/Environmental Impact Statement, a description of how all comments were considered, and responses to all substantive relevant comments. The comment period was from August 24 through November 6, 2007, during which time comments were transmitted to BLM via mail, fax, website form, hand-delivery, and public meeting.

Approximately 146,400 communications were received. Of these, approximately 145,500 reflected the views of, and closely mirrored language suggested by, advocacy groups, including Alaska Wilderness League (approximately 900 electronically; approximately 400 postcards with shorter message; and approximately 200 postcards with savetlake.org as source, but mailed from Alaska Wilderness League), Audubon Alaska (6,000), Campaign for America's Wilderness (3,100), Earthjustice (11,600), Natural Resources Defense Council (42,600), and The Wilderness Society (80,800). Most communications were written statements delivered on electronic medium through the mail or hand-delivered (all or nearly all of the communications received reflecting the views of the Audubon Society, Earthjustice, and The Wilderness Society were received on electronic medium) or received through the website form developed for this project (42,800 messages). Much smaller numbers of comments were received by fax, by mail, or by hand-delivery. Some commenters used multiple means to provide the same communication, e.g., mailing and faxing a letter. In addition to the written comments, 79 people spoke at public meetings in Anaktuvuk Pass, Anchorage, Atkasuk, Barrow, Bethel, Fairbanks, Nuiqsut, Wainwright, and Washington, D.C. Each speaker's statement is counted as one communication.

All communications were reviewed and entered into the comment analysis database and the Administrative Record. Consistent with Federal regulations and BLM's NEPA Handbook, BLM has drafted responses to substantive relevant comments, i.e., to comments that were substantive and:

- 1) identified new impacts or recommended reasonable new alternatives or mitigation measures,
- 2) related to inadequacies or inaccuracies in the analysis or methodologies used, and/or
- 3) involved disagreements on interpretation of significance.

Substantive relevant comments were directed to members of the IAP/EIS's team for consideration in the drafting of this Final Supplemental IAP/EIS. Responses were drafted to all such comments and reviewed by the IAP/EIS team. Where appropriate, the team made changes in the analysis in the Final Supplemental IAP/EIS.

Definitions

Communication: a letter or postcard, fax, webform submission, or statement by a single individual at a public meeting submitted to BLM during the comment period for consideration in development of the Final Supplemental IAP/EIS. A communication can contain one or more comments.

Comment: a distinct statement regarding an aspect of the Draft Supplemental IAP/EIS

Substantive Relevant Comment: a comment that a) relates to inadequacies or inaccuracies in the analysis or methodologies used in the Draft Supplemental IAP/EIS, or b) identifies new impacts or recommends reasonable new alternatives or mitigation measures to be considered in development of the Final Supplemental IAP/EIS, or c) involves disagreements on interpretations of significance with those presented in the Draft Supplemental IAP/EIS *and* provides enough information to identify the specific perceived short-coming of the Draft Supplemental IAP/EIS or the process by which it was developed; the new potential impacts, alternatives, or mitigation measures; or the basis for disagreements on interpretations of impacts.

6.2 COMMUNICATIONS FOR WHICH NO RESPONSE IS PROVIDED

The vast majority of communications received have not received specific responses. Many of these were expressions of personal preference. They expressed the writers' views on what management actions BLM should take. While these communications may have indicated why the writers advocated a certain course of action, they did not propose a new substantive alternative or mitigation measure. Nearly all of such comments advocated protection of NPR-A's surface resources, particularly those near Teshekpuk Lake, and opposed oil and gas development at least in areas near (or north of) Teshekpuk Lake. Many of these comments endorsed Alternative A, the No Action Alternative. Communications generated by commenting campaigns conducted by Alaska Wilderness League, Audubon Alaska, Earthjustice, the Natural Resources Defense Council, and The Wilderness Society generally reflected these views, though in many cases they also urged that additional areas be protected.

The following are a few examples of comments which need no response and reflect personal preference. While they may have been stimulated by advocacy by an environmental organization, they seem to be an individual's unique statement. **Section 6.2.2** includes examples of communications that more closely mirrored messages suggested by environmental organization advocacy campaigns.

Elizabeth Pomper of Washington, D.C., September 19, 2007

I oppose the proposed lease sale in the Teshekpuk Lake Special Area. This area is too valuable to wildlife to be threatened by human activity. While oil development can occur in much of the NPRA, some places are too sensitive and significant for drilling. Teshekpuk Lake is one of those places.

Glenn Helkenn of Alaska, September 12, 2007

I do not support development in the ecologically sensitive wetlands of Teshekpuk Lake. We need to be looking for alternatives to oil gas, not tearing up more of Alaska's sensitive habitats.

Florence Monnier of Michigan, September 28, 2007

In formulating plans for energy development, please consider the area around lake Teshekpuk which is extremely valuable to wild life, particularly the numerous species of birds that depends on this lake in their life cycle. It would be a shame for our nation to disregard the devastating impact that petroleum extraction would have on wild life. Leave the area around Lake Teshekpuk untouched by our greedy dependence on petroleum.

Matthew Smith of Wyoming, October 11, 2007

I fully support oil exploration and development in all areas of the NPR-A where oil is most concentrated and commercially recoverable.

Some communications stated that the Draft IAP/EIS or the process by which it was developed was inadequate or inaccurate, but did not provide substantive support for the assertions. For example, Dr. Michael Sinclair of Pennsylvania wrote on September 7, 2007, "the environmental concerns are not sufficiently addressed," Kathleen Hembree of Illinois wrote on September 8, 2007, "I believe there need to be more indepth studies completed or update and reevaluate the studies already done on the environmental impact," and several comments were received stating, "the SEIS does not sufficiently address the concerns that the courts acknowledged last summer." (e.g., Michael Norden of Ohio, September 7, 2007) While this Final IAP/EIS has addressed some flaws identified by other commenters, without adequate information about the perceived inadequacies of the Draft IAP/EIS, BLM is not able or required to specifically address the concern raised in more general comments such as these.

Similarly, some communications advocated that additional measures be taken to protect surface resources. When specific recommendations were made, the Final IAP/EIS provides responses in Section 6.3. However, without recommendations that provide some specificity regarding the additional protection or the relaxed approach for a stipulation or ROP advocated, BLM is not able to introduce a responsive new or modified protective measure (40 CFR 1503.3(a)). For example, comments that only state that BLM should provide maximum protection for wildlife, subsistence, or some other resource or use of the land provide too little information about what sort of additional protection is requested.

Finally, communications that were either not related to the Northeast NPR-A planning effort or unclear as to their meaning have not received a response. Under the first category are communications that opposed oil and gas development in the Arctic National Wildlife Refuge. The Refuge lies more than 100 miles east of NPR-A and is not within the scope of BLM's planning decision in this IAP/EIS. An example of an unclear communication was one that read in its entirety: "No."

6.2.1 Alaska Officials and Governments

The Wainwright Tri-Lateral Partnership Committee composed of the City of Wainwright, the Native Village of Wainwright, and Olgoonik Corporation sent a resolution expressing its views on future management of Northeast NPR-A. We reproduce it below. Note that the State of Alaska and the North Slope Borough also commented on the Draft IAP/EIS. The latter

communications raised numerous relevant substantive concerns and are reproduced in **section 6.3**.

WAINWRIGHT TRI-LATERAL PARTNERSHIP COMMITTEE
(Wainwright City/Native Village of Wainwright/Olgoonik Corporation)

RESOLUTION NO. 2007-01

**A RESOLUTION STRONGLY SUPPORTING THE PROTECTION OF THE
TESHEKPUK LAKE CARIBOU HERD AND WATERFOWL AND SUBSISTENCE USE
OF THESE RESOURCES BY KEEPING TESHEKPUK LAKE AND THE AREA
NORTH OF IT CLOSED TO OIL AND GAS LEASING**

WHEREAS, the City of Wainwright, the Native Village of Wainwright, and the Olgoonik Corporation (“the Wainwright Tri-lateral Partnership Committee”) are responsible and concerned for the well-being of the its citizens, members, and shareholders; and

WHEREAS, the network of coastal lagoons, deepwater lakes, wetlands, and river deltas in the Teshekpuk Lake are provides some of the most important habitat for calving caribou and is visited annually by tens of thousands of molting geese; and

WHEREAS, the mammals, birds, and fish migrate to and from, through our oceans and land; and

WHEREAS, residents of Wainwright rely strongly on their continued ability to utilize the Teshekpuk Lake caribou for subsistence; and

WHEREAS, there is a strong probability that development of the wintering grounds, insect relief, and calving grounds will carry negative impacts to the herd and its habitat; and

WHEREAS, the Bureau of Land Management (“BLM”) is currently considering opening up more area for oil and gas leasing in the Northeast National Petroleum Reserve-Alaska; and

WHEREAS, the BLM and Department of Interior should administer federal lands in a way that protects subsistence use; and

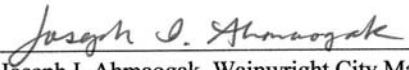
WHEREAS, the BLM and Interior Department’s current management plan makes 87% of the Northeast NPR-A available for leasing and protects the Teshekpuk Lake resources by keeping this area closed to leasing; and

WHEREAS, all indigenous peoples and communities are concerned about their continued sustenance from land and sea and the continuance of traditional hunting, fishing, and practices, and that these are supportive of each other and the Inupiat people’s rights to self-determination;

NOW, THEREFORE, BE IT RESOLVED that the Wainwright Tri-lateral Partnership Committee strongly supports the adoption of “Alternate A” in the Draft Supplemental Environmental Impact Statement (the “no action” alternative); and

BE IT FURTHER RESOLVED that lands currently closed to leasing in the NE NPR-A be kept closed to leasing to protect waterfowl, fish, and the critical calving, insect relief, and wintering grounds of the Teshekpuk Lake caribou.

PASSED AND APPROVED by a duly constituted quorum of the Wainwright Tri-lateral Partnership Committee this 27th day of September, 2007.


Joseph I. Ahmaogak, Wainwright City Mayor


June Childress, Wainwright Village Council President


Roy D. Ahmoagak, Olgoonik Corporation

ATTEST:


Sonya N. Panik, Secretary

6.2.2 Non-Government Organizations

A number of environmental organizations conducted campaigns encouraging members and others to comment on the Northeast NPR-A Draft Supplemental IAP/EIS and provided suggested text or talking points. Individual commenters were commonly encouraged to personalize their comments. In instances in which the additional text provided by individual respondents included substantive relevant comments, their communications have been addressed in **section 6.3**.

Below is a reproduction of the standard text suggested by some environmental organizations or a typical communication reflecting the points raised by such organizations commenting on the Draft IAP/EIS.

Alaska Wilderness League

(approximately 900 communications appear to have been generated as part of this campaign); Note: The third sentence of the second paragraph does suggest additional, though non-specific mitigation. This suggestion is addressed in **Chapter 2** under ***Alternatives Considered but Eliminated from Detailed Analysis***.

I am writing to comment on the Draft Supplemental Integrated Activity Plan/Environmental Impact Statement (SEIS) for Northeast portion of the National Petroleum Reserve-Alaska (NPR-A), which poses a threat to the currently protected and biologically important Teshekpuk Lake region.

At a minimum I urge the Bureau of Land Management (BLM) not to take any action that will remove current protections for this incredibly important area. I urge BLM adopt Alternative A, the “No Action,” alternative. Furthermore I urge the agency to increase protections by making additional areas of the Teshekpuk Lake Special Area that are important to wildlife and subsistence off limits to any oil and gas development.

The Teshekpuk Lake area is one of the most important wetland complexes in the entire circumpolar Arctic. The area contains vital habitat for migratory shorebirds and waterfowl, and other wildlife, including the 45,000-head Teshekpuk Lake Caribou herd.

Because of its abundance of wildlife the area is also critically important to the maintaining the subsistence-based culture of the Alaska Natives of Alaska’s North Slope.

The Teshekpuk Lake area has been protected for thirty years from oil and gas development through four administrations by Secretaries of Interior from Cecil Andrus to James Watt. There is no viable reason for the current administration to remove these long-standing protections.

At a time in our history when our country must combat global warming and overcome its addiction to oil, it makes no sense to damage this biologically valuable habitat with oil and gas development that will contribute greenhouse gas emissions.

I thank you for considering my comments and urge BLM to maintain the current protections for vitally important habitat in the Teshekpuk Lake region and indeed extend these protections to include additional areas.

In addition, two sets of postcards (approximately 400 and 200, respectively) were mailed to BLM from the Alaska Wilderness League (street and e-mail addresses are withheld).

Dear Secretary Kempthorne:

America's Teshekpuk Lake and its surrounding pristine wetlands in northern Alaska contain some of the most important bird and animal habitats in America's Arctic. I urge you **NOT** to give away this previously protected area to Big Oil.

Drilling in the Teshekpuk Lake Special Area will not solve America's energy problems. Instead it would replace culturally and ecologically imperative public land with a network of drilling platforms, gravel roads, airstrips and pipelines.

Some places are so special they should be permanently off-limits to oil drilling, and the Teshekpuk Lake Special Area is one such area. **Again, I urge you NOT to open the Teshekpuk Lake Special Area to oil and gas development, but instead protect it for future generations.**

ATTENTION:

SECRETARY DIRK KEMPTHORNE
U.S. Department of the Interior
1849 C Street, N.W.
Washington DC 20240

Name: Rachel Wakefield

Address: _____

City: Farmington State: NH Zip: 03835

E-mail: _____

www.AlaskaWild.org

Dear Secretary of the Interior:

America's Teshekpuk Lake in northern Alaska and its surrounding pristine wetlands are some of the most important bird and animal habitats in the entire Arctic. I urge you **NOT** to give away this previously protected area to giant profit-hungry oil companies, such as ConocoPhillips, in this September's lease sale.

Drilling in the Teshekpuk Lake Special Area won't solve America's energy problems and would replace culturally and ecologically significant public land with a network of drilling platforms, gravel roads, airstrips and pipelines.

Some places are so special they should be permanently off-limits to oil drilling, and the Teshekpuk Lake Special Area is one such area. **Again, I urge you to cancel the lease sale scheduled for September and to protect Teshekpuk Lake for future generations.**

ATTENTION:

SECRETARY DIRK KEMPTHORNE
U.S. Department of the Interior
1849 C Street, N.W.
Washington DC 20240

Name: KURT HOLM

Address: _____

City: Appleton State: WI Zip: 54914

E-mail: NONE



www.SaveTLake.org

Audubon Alaska

(approximately 6,000 communications appear to have been generated as part of this campaign):

As a citizen concerned with wildlife conservation, I appreciate this opportunity to comment on the draft SEIS for the Northeast NPR-A. I urge BLM to select Alternative A, the No Action Alternative, and not lease any land north or east of Teshekpuk Lake for oil and gas development.

Development near Teshekpuk Lake would disturb tens of thousands of vulnerable molting geese, pregnant caribou cows, and newborn caribou calves. It could impact threatened Spectacled Eiders and rare Yellow-billed Loons. Some places are too special for oil and gas drilling. Teshekpuk Lake is one of those places.

In the face of a rapidly changing climate in the Arctic, the prudent approach is to protect the Teshekpuk area and give wildlife the time and space they will surely need to adapt to changing conditions. Drilling near Teshekpuk will not solve America's energy problems and will only add to emissions of the greenhouse gases that cause global warming.

Alaska Native communities on the North Slope depend on the caribou and other fish and wildlife at Teshekpuk Lake for their subsistence way of life, and oil and gas development across the North Slope has resulted in documented human health impacts.

I strongly urge the BLM not to lease any land north or east of Teshekpuk Lake. Thank you for considering my comments.

Campaign for America's Wilderness

(approximately 3,100 communications appear to have been generated as part of this campaign):

Dear Secretary Kempthorne,

I am writing to comment on the Bureau of Land Management's plan for the Teshekpuk Lake area, located in the 4.6 million-acres Northeast Planning Area of the National Petroleum Reserve, Alaska (Reserve). I vigorously oppose the BLM's plan to open the entire area north and east of Teshekpuk Lake to oil and gas leasing. Despite continued bipartisan opposition from scientists, sportsmen, Native communities, Members of Congress, and conservation groups, the BLM's newly-released plan again proposes much of the same without offering an alternative to opening the crucial wildlife habitat around Teshekpuk Lake to oil and gas drilling.

The Teshekpuk Lake area provides habitat for a 45,000-strong caribou herd, 60,000 geese, and hundreds of migratory bird species from six continents. With so many other viable energy extraction areas in the vicinity, risking the health of this sensitive, fragile ecosystem is irresponsible. The hundreds of leaks in Alaska's North Slope demonstrate the inevitability of oil spills, and remind us how risky energy development can be. Given the proximity of the proposed lease sales to Teshekpuk Lake's vital habitat, the risk is unjustifiable.

Teshekpuk Lake is a national treasure, and I urge you to cancel the planned sale of leases in the Teshekpuk Lake Surface Protection Area.

Earthjustice

(approximately 11,600 communications appear to have been generated as part of this campaign); Note: The third sentence of the third paragraph does suggest additional, though non-specific mitigation. This suggestion is addressed in **Chapter 2** under ***Alternatives Considered but Eliminated from Detailed Analysis***.

The Teshekpuk Lake area is one of the most important wetlands in the Arctic. The lake and its surrounding area contain vital habitat for wildlife and is critically important to maintaining the subsistence-based culture of the Alaska Natives.

I am writing to comment on the Draft Supplemental Integrated Activity Plan/Environmental Impact Statement for the northeast portion of the National Petroleum Reserve-Alaska, which poses a threat to the currently protected and biologically important Teshekpuk Lake region.

I urge the Bureau of Land Management not to take any action that will remove current protections for this incredibly important area. I urge BLM to adopt Alternative A, the "No Action," alternative. Furthermore, I urge the agency to increase protections by making additional areas of the Teshekpuk Lake Special Area that are important to wildlife and subsistence off limits to any oil and gas development.

At a time when our nation is deciding how to combat global warming and overcome our addiction to oil, it makes no sense to damage this biologically valuable habitat with oil and gas activities that will compound greenhouse gas pollution.

I thank you for considering my comments and urge BLM to maintain the current protections for vitally important habitat in the Teshekpuk Lake region. BLM should expand the existing protections to include additional areas.

Natural Resources Defense Council

(approximately 42,600 communications appear to have been generated as part of this campaign):

Dear BLM Project Leader,

I urge the BLM to keep all of the lands to the north and east of Teshekpuk Lake in the National Petroleum Reserve-Alaska (also known as the Western Arctic Reserve) closed to oil and gas leasing. Eighty-seven percent of the reserve's Northeast Planning Area is already open for leasing and more than 1.3 million acres of it are already being actively explored. The unspoiled wildlife habitat surrounding Teshekpuk Lake must be kept off-limits to industrialization.

While the Western Arctic Reserve has been widely explored for its oil and gas potential off and on for decades, a small part of the Northeast Planning Area around Teshekpuk Lake has long been protected because of its extraordinary importance to wildlife. Secretaries of the Interior -- from Cecil Andrus under President Carter to James Watt under President Reagan to Bruce Babbitt under President Clinton -- have recognized the necessity of balancing development and conservation in the Western Arctic and have prohibited oil and gas leasing in this most critical habitat.

Oil and gas development near Teshekpuk Lake would disturb tens of thousands of vulnerable molting geese, pregnant caribou cows and newborn caribou calves. It could harm threatened spectacled and steller's eiders, as well as rare yellow-billed loons.

In the face of a rapidly changing climate in the Arctic, the prudent approach is to protect the Teshekpuk Lake area and give wildlife the time and space it will surely need to adapt to changing conditions. Drilling in the Teshekpuk area will not solve America's energy problems and would only increase dangerous global warming pollution.

Seven Alaskan native communities on the North Slope depend on the caribou and other fish and wildlife at Teshekpuk Lake for their subsistence way of life, and oil and gas development across the North Slope has resulted in documented human health impacts.

I strongly urge the BLM not to lease any land north and east of Teshekpuk Lake. Thank you for considering my comments.

The Wilderness Society

(approximately 80,800 communications appear to have been generated as part of this campaign):

To Whom It May Concern:

I am strongly opposed to oil and gas drilling in Teshekpuk Lake area of the National Petroleum Reserve-Alaska (NPR-A). One of the most important wetlands in the Arctic, the Teshekpuk Lake region provides habitat for a million birds, including threatened species like the Spectacled Eider, as well as the 45,000-member Teshekpuk Lake Caribou Herd.

The draft Supplemental Environmental Impact Statement issued by the Bureau of Land Management (BLM) could lead to the opening of this ecologically important wetland habitat to lease sales. The region's Native residents have expressed strong opposition to the plan. So have sportsmen's groups, scientists, conservationists and the public at large.

The area around Teshekpuk Lake should remain what it is today: an irreplaceable, unbroken, core wildlife habitat for caribou, molting geese and thousands of other birds and mammals and a place where generations of Alaska residents have hunted, fished and pursued their subsistence ways of life.

I ask you to not open the Teshekpuk Lake area to drilling for oil and gas. I also ask that the BLM protect the full range of the area's values, from subsistence to recreation to the health of fish and wildlife populations. The BLM should ensure strict adherence to environmental standards during every phase of nearby oil and gas operations.

Such a decision is the only appropriate one for this globally important wetland habitat. Thank you for your consideration.

6.3 SUBSTANTIVE RELEVANT COMMENTS

Consistent with BLM's NEPA Handbook, the Final Supplemental IAP/EIS responds to comments that are both relevant and substantive. To be relevant, a comment must: a) relate to inadequacies or inaccuracies in the analysis or methodologies used in the Draft Supplemental IAP/EIS, or b) identify new impacts or recommend reasonable new alternatives or mitigation measures to be considered in development of the Final Supplemental IAP/EIS, or c) involve disagreements on interpretations of significance with those presented in the Draft Supplemental IAP/EIS. To be substantive a comment must have enough information to identify: a) the specific perceived short-comings of the Draft Supplemental IAP/EIS or the process by which it was developed, or b) the new potential impacts, alternatives, or mitigation measures, or c) the basis for disagreements on interpretations of impacts.

There were 903 unique substantive relevant comments. All of the substantive relevant comments appear in at least one of the communications printed below. Tables 6-1 and 6-2 list all of the communications printed and the pages upon which they and their responses appear. Table 6-1 lists them in alphabetical order of the commenter; Table 6-2 lists them in order of the communications number. (Note: In the course of processing communications received in many different media, some formatting has been lost from the comments. In several instances, excerpts containing the substantive relevant comments, rather than entire oral statements, are provided).

Table 6-1. Printed Communications Listed by Commenter

Commenter	Communication #	Page Communication Begins	Page Response Begins
Agnasagga, George	068	6-481	6-481
Ahmaogak, Joseph	069	6-482	6-483
Ahtuanguaruak, Rosemary	060, 065	6-458, 6-475	6-461, 6-476
Alaska, State of	005	6-59	6-76
Alaska Eskimo Whaling Commission	012	6-111	6-117
Alaska Oil and Gas Association	041	6-316	6-320
Alaska Shorebird Group	023	6-254	6-259
Alaska Wilderness League: Betsy Beardsley at Nuiqsut public meeting	024	6-261	6-262
Anadarko Petroleum Corporation	043	6-327	6-333
Arctic Slope Regional Corporation at Barrow public meeting	013	6-119	6-120
Armanasco, John Deltogno	077	6-501	6-501

Commenter	Communication #	Page Communication Begins	Page Response Begins
Audobon Alaska: Stan Senner at Anchorage public meeting	022	6-252	6-253
Ausprey, Ian	075	6-485	6-486
Brower, Carl	067	6-480	6-480
Carroll, Geoff	055	6-444	6-446
Carroll, Marie	059	6-456	6-457
Center for Biological Diversity	025	6-263	6-284
Climate Change Center, et al.	026	6-290	6-291
ConocoPhillips Alaska, Inc.	044	6-338	6-390
Coutsoubos et al., Nathan	076	6-487	6-495
Ducks Unlimited	027	6-293	6-295
Edwardson, Robert	056	6-448	6-449
FEX	045	6-418	6-433
George, Craig	062	6-464	6-465
Hibbard-Rode et al., Karen	063	6-466	6-469
Hugo, Charles	051	6-437	6-438
Hugo, Paul	053	6-440	6-440
Iñupiat Community of the Arctic Slope at Barrow public meeting	011	6-109	6-110
Kagliak, Bernice	066	6-477	6-478
Klongvik, Earl	061	6-462	6-463
Kuukpik Corporation, et al.	014	6-121	6-144
Kuukpik Corporation: Isaac Nukapigak at Nuiqsut public meeting	015	6-150	6-154
Long, Meredith	078	6-502	6-502
Lowe, Whitney	088	6-527	6-528
McComb, John	070	6-484	6-484
Miller, Pamela	079	6-503	6-505
The Nature Conservancy	028	6-296	6-300
North Slope Borough	001	6-19	6-45
North Slope Borough: Mayor Itta at Barrow public meeting	002	6-57	6-58

Commenter	Communication #	Page Communication Begins	Page Response Begins
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Northern Alaska Environmental Center	030	6-303	6-303
Oppel, et al., Steffen	080	6-507	6-514
Paneak, Raymond	052	6-439	6-439
Pepper, James	081	6-517	6-518
Person, Brian	054	6-441	6-442
Phillips, Patricia	082	6-519	6-520
Redacted #1	083	6-521	6-521
Redacted #2	084	6-522	6-522
Redacted #3	085	6-523	6-523
Resource Development Council	042	6-324	6-326
Sachau, B.	086	6-524	6-525
Suydam, Robert	058	6-452	6-454
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Ukpeagvik Iñupiat Corporation	016	6-157	6-160
U.S. Environmental Protection Agency	008	6-98	6-107
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U.S. Geological Survey	007	6-97	6-97
The Wilderness Society et al.	021	6-161	6-221
Wildlife Conservation Society	031	6-304	6-308
Wildlife Research and Management	087	6-526	6-526
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Table 6-2. Printed Communications Listed by Communication Number

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006	U.S. Fish and Wildlife Service	6-84	6-95
007	U.S. Geological Survey	6-97	6-97
008	U.S. Environmental Protection Agency	6-98	6-107
011	Iñupiat Community of the Arctic Slope at Barrow public meeting	6-109	6-110
012	Alaska Eskimo Whaling Commission	6-111	6-117
013	Arctic Slope Regional Corporation at Barrow public meeting	6-119	6-120
014	Kuukpik Corporation, et al.	6-121	6-144
015	Kuukpik Corporation: Isaac Nukapigak at Nuiqsut public meeting	6-150	6-154
016	Ukpeagvik Iñupiat Corporation	6-157	6-160
021	The Wilderness Society et al.	6-161	6-221
022	Audubon Alaska: Stan Senner at Anchorage public meeting	6-252	6-253
023	Alaska Shorebird Group	6-254	6-259
024	Alaska Wilderness League: Betsy Beardsley at Nuiqsut public meeting	6-261	6-262
025	Center for Biological Diversity	6-263	6-284
026	Climate Change Center et al.	6-290	6-291
027	Ducks Unlimited	6-293	6-295
028	The Nature Conservancy	6-296	6-300
029	Northern Alaska Environmental Center: Pamela Miller at Fairbanks public meeting	6-301	6-302
030	Northern Alaska Environmental Center	6-303	6-303
031	Wildlife Conservation Society	6-304	6-308
032	The Wildlife Society	6-310	6-314
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043	Anadarko Petroleum Corporation	6-327	6-333
044	ConocoPhillips Alaska, Inc.	6-338	6-390
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<i>Comments given at public meetings by government, tribal, Native corporation, environmental organization, and industry representatives are listed above</i>			
Anaktuvuk Pass, October 9, 2007 public meeting			
051	Charles Hugo	6-437	6-438
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054	Brian Person	6-441	6-442
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064	Edward Wukanigulk	6-473	6-474
065	Rosemary Ahtuanguaruak	6-475	6-476
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068	George Agnasagga	6-481	6-481
069	Joseph Ahmaogak	6-482	6-483
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070	John McComb	6-484	6-484
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075	Ian Ausprey	6-485	6-486
076	Nathan Coutsobos et al.	6-487	6-495
077	John Deltogno Armanasco	6-501	6-501
078	Meredith Long	6-502	6-502
079	Pamela Miller	6-503	6-5-5
080	Steffen Oppel et al.	6-507	6-514
081	James Pepper	6-517	6-518
082	Patricia Phillips	6-519	6-520
083	Redacted #1	6-521	6-521
084	Redacted #2	6-523	6-522
085	Redacted #3	6-523	6-523

Communication #	Commenter	Page Communication Begins	Page Response Begins
086	B. Sachau	6-524	6-525
87	Wildlife Research and Management	6-526	6-526
88	Elise Wolf and Whitney Lowe	6-527	6-527

COMMUNICATION NUMBER 1
From North Slope Borough
Edward Itta, Mayor

November 6, 2007

Mr. Thomas Lonnie
State Director
Bureau of Land Management
Northeast NPR-A Supplemental IAP/EIS Comments
ENSR Project Office
1835 South Bragaw Street, Suite 490
Anchorage, AK 99508
Via Fax @ 888-907-3677

Via Webform @ <http://www.blm.gov/ak/nprane/comment.php>

Re: Northeast NPR-A Draft Supplemental IAP/EIS Comments

Dear Mr. Lonnie:

The North Slope Borough (Borough) appreciates this opportunity to comment on the Bureau of Land Management (BLM) Northeast NPR-A Draft Supplemental IAP/EIS (DSEIS). Our comments below will be in several parts, beginning with process issues.

Process Issues and Borough's Cooperating Agency Status

As you know, the Borough is the only agency that through formal agreement chose to accept the status of a cooperating agency in this planning effort. While we have greatly appreciated the efforts of the BLM project manager to keep us as fully involved as he has been able throughout the process, our participation has not been entirely satisfying. We often were rushed in being asked to provide a review of internally drafted sections of the document within extremely tight timeframes. We felt entirely outside the process while the release of this DSEIS was delayed for more than two months without any explanation. Of considerable concern and misleading to some of our North Slope constituents has been a perceived overstatement of the Borough's role and influence in this effort. While we have done our best to fulfill the terms of the cooperating agency agreement we signed with BLM, with the exception of text dealing with potential human health impacts, it cannot be said that we authored any section of the document.

Also, because of the reference to our cooperation on the cover of the document, many of our residents are under the impression that the Borough played a significant role not only in the drafting of the document, but also in the crafting of the analyzed alternatives and the conclusions presented with respect to potential impacts. We want to make it clear to our North Slope residents and others that our decision to act in a cooperating agency role as BLM develops this Supplement in no way binds us to any final position regarding appropriate leasing and management of the Northeast NPR-A. The right to formulate an independent Borough position and disagree with BLM if we feel it is called for is an explicit part of our cooperating agency agreement. We intend to work with BLM to ensure that the Final IAP/EIS more accurately explains what our role has been.

[1.001] It was particularly disturbing that despite our cooperating agency status BLM declined to grant our request, made at the outset of the planning process and reiterated throughout, to provide a minimum 90-day public comment period upon the release of this DSEIS. There simply

is no good reason why a longer comment period was not provided, especially given as mentioned above that some internal and unexplained Department of the Interior issues led to a substantial delay in the document's release.

The DSEIS itself is an improvement over the version produced in early 2005. We are especially pleased that BLM has acknowledged its responsibility to provide a meaningful analysis of the potential impacts of its actions on human health, and has incorporated such analysis and associated proposed mitigation measures in the DSEIS. We commend BLM for its leadership on this issue that is of such central importance to the Borough and our residents. With respect to other issues, we do expect to discuss further with BLM our suggestions and other input offered as a cooperating agency during the drafting phase of this document that have not been incorporated or addressed in the DSEIS. We recognize that a drawback of being a cooperating agency is that input offered the lead agency outside the public process ends up not being treated in the same manner in the record as comments offered directly during this current phase of the planning process. Ideally, we could go back, compare all of our input with the text of the DSEIS, and offer anew any material that has not been fully adopted. While we have attempted to do so, some points have certainly been missed, and will require additional discussion. In addition, we will be informed and educated by the written comments and hearing testimony offered by North Slope organizations and individuals, as well as other stakeholders possessing knowledge and expertise beyond our own. One of the great benefits of being a cooperating agency will be our ability to discuss with BLM this public input and appropriate responses to it following the close of the comment period.

Borough Position on Leasing of New Areas Within NE NPR-A

The position of the Borough regarding the appropriate management of the Northeast Planning Area of the NPR-A remains unchanged since the Final Amended IAP/EIS was published almost three years ago and the associated Record of Decision was issued in January 2006. Despite additional analysis being contained in the DSEIS, and in fact in some cases because of it, we still do not believe that BLM has sufficiently made its case that any area closed to leasing under the 1998 management plan should now be opened. The fundamental question for the Borough has been whether, given all of their possible interpretations, any assemblage of identified mitigation measures as they may be implemented by BLM can effectively and assuredly protect the critical wildlife resources and subsistence harvests that occur within those portions of the planning area closed to leasing under the 1998 management plan. Regrettably, given that the economic well being of the Borough depends on new oil and gas leasing, exploration, and development, we do not think that any combination of measures that have been analyzed can provide adequate protection. Maps that have been developed showing the extent of infrastructure that could be developed within sensitive areas given the mitigation measures incorporated in the alternatives presented in the DSEIS are troubling.

The Borough has always argued that responsible land, wildlife, and resource management must be driven by sound science. In defense of our traditional subsistence whaling rights, we have been held to the most rigorous standards of scientific study design, reporting, and peer review. We believe that no less should be required of agencies and industry operators active in our waters and on our land. Given the enormous environmental, sociocultural, and health risks involved, we strongly believe BLM ought to adopt a highly cautious approach in its management of this extremely sensitive region.

We must all recognize that the complex ecosystem of the North Slope and the arctic marine environment are changing because of forces we are only now beginning to understand to an extent and in ways that were not predicted even just a few years ago. With numbing frequency,

new reports chronicle the impacts observed so far. Any attempt to suggest with certainty the potential future consequences for the intricately balanced wildlife resources and human inhabitants of our region has to be questioned. Even without any added influence that would come from expanded oil and gas exploration and development, vast areas of habitat will continue to be altered by climate change. The numbers and distribution of our region's wildlife resources are certain to change as well. As subsistence users, we will have to adapt.

In 1998, there were sound reasons for placing certain areas off-limits to leasing. If anything, given the pace and uncertainty of change in the region today, there is more reason to protect those areas from additional stresses. The habitats in question are simply too critical to sensitive caribou, waterfowl, fish, and other wildlife populations that are highly valued by North Slope and other subsistence communities. Leasing in the areas now closed would represent a gamble that is too risky, and in which our residents stand to lose most.

[1.002, 003, 004, 005, 006, 007, 008] General Comments

[1.002 cont'd] 1. Need for quantitative analysis of environmental sensitivity

If the goal is to encourage energy development while conducting activities to "assure the maximum protection of surface values" within special areas, then it would be helpful to identify on a quantitative level where these sensitive areas of high ecological value exist within the planning area on a composite level. The Council on Environmental Quality regulations require that a cumulative effects analysis be a quantitative analysis of the impacts to resources, ecosystems and human communities, and not simply a list of actions and receptors. The DSEIS fails to clearly articulate, analyze, and model the relative probability of the cumulative effects of each of the alternatives and fails to complete the required ecosystem-level approach to quantifying cumulative impacts. The DSEIS' qualitative discussion does not constitute an analysis and is inadequate for evaluating this significant action. Quantifying where sensitive areas of high ecological value exist within the planning would complement the recent habitat fragmentation analysis by Loya and Schoen. (See Caribou Calving Habitat Analysis for Teshekpuk Lake: A Conceptual Approach: 2007) For example, BLM acknowledges that areas north and east of the lake are important for caribou, molting geese, and therefore, subsistence. However, a composite weighted analysis of these resource values would further assist the BLM in identifying which areas contain multiple surface resources of significant value, and how development scenarios might impact specific areas through direct displacement or via habitat fragmentation.

This could be accomplished by conducting an environmental sensitivity analysis. Individual GIS layers of surface resources (which are already presented by BLM in various figures in this DSEIS) could be overlain to create a composite layer that depicts acreage of varying biological importance/sensitivity. This type of sensitivity analysis could also help identify source-sink populations, where fish and wildlife inhabiting high-quality habitat (the source) effectively supply the excess population that disperses across the larger area (the sink). If the source area of high biological importance is impacted, this could result in significant effects to populations even though the total habitat area impacted is modest (See NRC 2003).

[1.003 cont'd] 2. Need for specific analysis of impacts from non-hydrocarbon spills

The recent BP methanol spill has brought to the forefront the need for BLM to consider impacts of non-petroleum based spills, such as methanol, when assessing potential environmental consequences of oil and gas development on North Slope vegetation, water quality, soil, and wetlands in the NEPA analysis. As some of these chemicals are toxic, birds, mammals, fish, and

even humans, could be potentially affected depending upon the location, timing, and size of a spill.

[1.004 cont'd] 3. ANILCA analysis is flawed (from village handout for NE NPRA pre-meetings)

This DSEIS fails to conclude that opening more areas for leasing will have significant impacts on subsistence despite the conclusions that industrial activity north of the Teshekpuk Lake will affect caribou by displacing or reducing the herd, that a large part of the overall regional subsistence harvest comes from caribou, and that caribou are a crucial resource to North Slope residents.

The DSEIS does conclude that cumulative impacts to subsistence use will be significant for the villages of Atkasuk, Anaktuvuk Pass, Barrow, and Nuiqsut. Interestingly, Wainwright is not included in this conclusion. Why this is the case must be explained.

[1.005 cont'd] 4. Impacts from winter seismic activities across alternatives should not be equal

In the beginning of Chapter 4, BLM assumes that impacts from winter seismic activities will be the same across all alternatives (Table 4.2-F). However, on page 4-53, it is stated that "under Alternatives A and D it is unlikely that seismic surveys would occur on Teshekpuk Lake." This suggests that for Alternatives B and C (where Teshekpuk Lake is available for oil and gas leasing), the impacts from seismic activities could be greater than those from other alternatives. This is a departure from the ensuing analysis of environmental consequences for the remainder of Chapter 4 that essentially treats the impacts of winter seismic activities as equal across all alternatives.

[1.006 cont'd] 5. New raptor mitigation measure needs clarification

The new potential mitigation measure offered by BLM to prevent or minimize the loss of raptors from electrocution by powerlines should be elaborated upon. The specific regulations should be spelled out rather than merely incorporated by reference to the publication: Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Specific requirements/standards could include design requirements specific to raptor size as well as the development of an avian protection plan that involves monitoring and reporting of avian mortality from electrocution events and procedures for management of nests built on utility structures.

[1.007 cont'd] 6. Assessment of resource development potential too simplistic

BLM could do a better job in depicting the geography of resource development potential within the planning area. Fig. 4-5 is overly simplistic and could be further refined in scale and accuracy where specific oil and gas plays are located within the planning area. Maps should include the Endicott, Lisburne, Sadlerochit, Beaufort, Brookian play groups within the planning area, as similarly depicted in Maps 99-104 of the 2003 Northwest NPRA Final IAP/EIS. The relative success rates of identifying prospects within these plays should be included in resource potential estimates that could further refine Fig. 4-5 and BLM's conclusions about high vs. low oil and gas potential within the NE planning area.

[1.008 cont'd] 7. Need for cumulative impact analysis of potential impacts from tundra fires as a result of global warming

There is no analysis of the cumulative impacts of tundra fires relative to resource development within the NE & NW NPR-A. Global warming is projected to increase the intensity and

frequency of tundra fires on the North Slope. Fire directly damages vegetation, with some species, such as lichen, taking decades to recover. Lichen is a critical food source for caribou during the winter. It is suspected that the recent 2007 Anaktuvuk River fire (the largest tundra fire ever recorded on the North Slope at approximately 220,000 acres) will have long-term impacts on the winter distribution of the Teshekpuk Lake Caribou Herd (TLCH). This possibility must be analyzed in the Final SEIS.

[1.009, 010, 011, 012, 013] Air Quality Subsections - General Comments

The DSEIS air quality analysis is deficient in several respects:

[1.009 cont'd] 1) BLM's conclusion that the planning area meets NAAQS Standards is not justified based on the available evidence. The Clean Air Act requires that BLM must either (a) undertake at least 1 year of baseline monitoring of the airshed; or (b) utilize a conservative estimate of baseline pollution. BLM has not obtained one-year of monitoring data, nor has BLM completed modeling using the largest potential NPR-A facility to verify that NAAQS is not violated. BLM does refer to modeling conducted for the offshore Liberty Project, which is cited as "somewhat smaller" than the typical field that could be developed in the planning area, and therefore this does not represent a maximum case.

[1.010 cont'd] 2) No effort is made to distinguish between PM_{2.5} and PM₁₀.

[1.011 cont'd] 3) The discussion of HAP is so limited as to be completely uninformative; it fails to utilize the best available data to make a more rigorous, detailed estimate of potential HAP impacts.

[1.012 cont'd] 4) BLM repeatedly asserts that based on modeling for the Liberty Project, emissions from facilities located in the planning area are likely to remain below PSD Class II increments, while at the same time acknowledging that Liberty would have been somewhat smaller than the typical potential Northeast NPR-A field, and that the model indicated that Liberty would nearly have exceeded PSD II increments.

[1.013 cont'd] 5) BLM does not acknowledge the significance of air quality impacts at the fence-line of development, but rather focuses on region-wide impacts. The planning area is one of the most important subsistence areas on the North Slope, and is used heavily by many families from surrounding villages. Decreases in local air quality near facilities may thus have very significant impacts.

[1.014] Overall, we are disappointed that despite the National Research Council's 2003 finding that data are insufficient to understand the impact of local air emissions on air quality and on the health of our residents, BLM continues to rely on the same inadequate data for this analysis, nearly 5 years later. **[1.015]** Furthermore, BLM does not propose any substantive new monitoring requirements for any future exploration or development in the region. Particularly in the context of the preexisting health disparities in our population with regard to pulmonary diseases (see chapter 3.4.10), this analysis appears to show a stark disregard for our health and well-being.

[1.016, 017] Section 3.2.2 Air Quality

[1.016 cont'd] BLM states that the planning area is in attainment of current National Ambient Air Quality Standards (NAAQS) and Alaska Ambient Air Quality Standards (AAAQS). There is no data given to support this assertion, and there has been no air quality monitoring within the

areas now closed to leasing under the 1998 management plan.[S1] Any modeling methodology used should be well validated in Arctic conditions.

[1.017 cont'd] BLM states that "trace amounts of air pollutants including heavy metals, have been detected in vegetation at very low levels, and arctic haze is periodically observed on the North Slope, due primarily to air pollutant emissions originating in northern Europe and Asia..." This is a somewhat confusing sentence. We request that BLM change the text by adding clarification on the following points. (1) Is BLM asserting that the trace amounts of air pollutants found in vegetation are from arctic haze? (2) What other air pollutants are found in trace levels in vegetation? This is particularly important to the human inhabitants of the region because, as BLM is undoubtedly aware, some air pollutants bioconcentrate in subsistence animals, such that even low levels of contaminants in vegetation could pose a substantial health risk to the human population given the very heavy use of the planning area for subsistence. (3) On what basis does BLM conclude that arctic haze is due primarily to emissions sources in other countries?

We agree with the NRC 2003 quote included in this chapter: "Little research has been done to quantify the effects of air pollution on the North Slope or to determine how local and regional air masses interact. Air pollution monitoring has been limited to priority pollutants from 1986 through 2002 at a few sites. Not enough information is available to provide a quantitative baseline of spatial and temporal trends in air quality over long periods across the North Slope." This congressionally-commissioned panel of scientists from the National Academy of Sciences concluded that there is a very clear deficit in the information needed to truly understand the role of regional and local air pollution in human health. Deaths from chronic lung disease on the North Slope are the highest in the state, at nearly 3 times the U.S. rate, and have increased 192% since 1979.

It is shocking to us that despite the very clear deficit in research noted in the NRC 2003 report, five years later there has been no substantive effort to study these issues. The elimination of health disparities between ethnic and economic sub-populations in the U.S. is the federal government's top priority, as indicated in the Healthy People 2010 objectives. Viewed from this perspective, the BLM's willingness to proceed with this planning effort with no requirements for a better program of data collection is irresponsible.

[1.018] Section 4.3.1.2 Air Quality and Climate

[1.018 cont'd] Air Pollutant Emissions Sources: In the first paragraph, BLM fails to enumerate HAP - a major byproduct of hydrocarbon combustion - among the pollutants that will be produced by exploration and development. This should be corrected in the text, and a substantive analysis included as to the types and amounts of HAP that will be produced, and their impact on air quality. The remaining paragraphs of this section contain numerous inaccuracies based on this omission, such as the statement in paragraph 5: "venting and flaring could be an intermittent source of NO_x, VOC and SO₂". Flaring is a source of HAP as well. This section should be re-written to detail the effects of this alternative on HAP emissions for each source discussed.

In the final paragraph, BLM simply states that HAP cannot be estimated at this stage because of lack of information about particular site-specific development activities and pollution controls. We disagree. BLM can certainly undertake such estimation based on the projected activities, spill analysis, and production estimates in section 4.2. Given the extraordinarily high incidence and prevalence of cancer on the North Slope, and the high use of natural resources in the planning area, it would be irresponsible for BLM not to use the best available methods at

this stage of the planning process to ensure that the potential impacts to our people are well understood.

[1.019, 020] Air Pollutant Emissions:

[1.019 cont'd] On page 4-72, BLM references the Liberty Project site-specific air quality analysis. Even though the Liberty Project would have been somewhat smaller than a typical field in the planning area, ambient air quality levels would have been close to applicable PSD II increments. Given that BLM acknowledges that the Liberty Project is smaller than the typical field anticipated under this alternative, and that the Liberty Project approached PSD Class II maximums, the only reasonable and responsible conclusion that BLM can reach here is that emissions could exceed PSD increments under this alternative. Perhaps BLM disagrees, but at the very least, given that BLM acknowledges that emissions may be very close to PSD Class II limits, BLM should require either that lessees undertake at least 1 year of baseline monitoring of the airshed, or that a conservative estimate of pollution be utilized in determining the baseline.

[1.020 cont'd] Table 4.3A groups particulate matter together. EPA standards are separate for PM_{2.5} and PM₁₀, and this table should include estimates for both independently. HAP must be included in this table as well.

[1.021] 4.3.1.4 Alternative A Conclusion

On page 4-73, BLM states that the air quality impacts from alternative A are likely to remain below applicable AAQS and PSD increments. For the reasons outlined above, this conclusion is not warranted, and BLM must either make the revisions discussed above, or conclude that PSD increments could be exceeded.

[1.022] Section 4.4.1 Air Quality

This section repeats many of the problems in Section 4.3.1. Our comments on section 4.3 apply here as well, although as described below the assertion that the air quality impacts from Alternative B would likely remain below applicable PSD increments appears almost certain to be incorrect. BLM acknowledges that emissions are likely to be 17-19% greater under Alternative B than under Alternative A, and yet still reaches the same conclusion regarding PSD II increments. Again, this is based on the Liberty model, already acknowledged to represent smaller fields than typical under Alternative A, and certainly substantially smaller than fields under this alternative as well.

Section 4.5.1 Air Quality

This section repeats many of the problems in 4.3.1. Our comments on section 4.3.1 apply here as well. In particular, BLM acknowledges that emissions are likely to be 30-40% greater under this alternative, and yet inexplicably reaches the same conclusion in its comparison to Liberty regarding PSD class II increments.

Section 4.6.1 Air Quality

This section repeats many of the problems in 4.3.1. Our comments on section 4.3.1 apply here as well. In particular, BLM acknowledges that emissions are likely to be 23-26% greater under this alternative, and yet inexplicably reaches the same conclusion in its comparison to Liberty regarding PSD class II increments.

Cumulative Impacts

[1.023] 4.7.7.1 Air Quality and Climate

Pg 4-684. Again, this section is unclear in its discussion of particulates. PM is divided into PM 10 (dust), and PM2.5 (generally from combustion sources). Paragraph 1 should reflect that combustion produces PM2.5. Hazardous air pollutants (HAP) produced must be identified, including lesser compounds such as dioxin, with known severe human health effects.

[1.024] Section 4.7.7.1.1

The basis for the statement that ambient air quality on the North Slope is generally good, must be explained, or the conclusion changed. The NRC 2003 finding that "little research has been done to quantify the effects of air pollution on the North Slope or to determine how local and regional air masses interact. Air pollution monitoring has been limited to priority pollutants from 1986 through 2002 at a few sites. Not enough information is available to provide a quantitative baseline of spatial and temporal trends in air quality over long periods across the North Slope," must be included to clarify that in fact, there is little information available with which to make your assessment.

[1.025] Section 4.7.7.1.2

The conclusion that overall, decreasing production and technology advances will result in reduced air quality impacts is erroneous. Emissions sources in the planning area will be in the heart of one of the most actively used subsistence regions on the North Slope, close to hunting areas, camp sites, and cabins, and closer to major population centers such as Barrow than previous development. This section should discuss not only region-wide trends from decreasing production, but also the effects on local air quality both in the planning area and at the fence-line of development from local emissions sources within the planning area. This is an extremely important distinction, given that the planning area is a high-use subsistence area with many traditional hunting sites, camps, and cabins, and that fish and game taken outside the region utilize this region extensively, and may bioaccumulate locally produced air pollutants through respiration and through consuming vegetation near emissions sources. Air quality effects for the subsistence users and families that inhabit the planning area during parts of the year will most certainly be increased by local sources.

Mitigation:

[1.026] Page 4-259: In Alternative A, section 4.3.19.5 and related subsections for the other alternatives, BLM suggests a new stipulation: "Air Quality Monitoring and Management."

This measure is inadequate, and actually appears to relax some of the standards required under the Clean Air Act (CAA). This measure should include these following key requirements:

- * Compliance with the CAA including one year of baseline monitoring prior to construction, and post construction monitoring;
- * Compliance with the Alaska Department of Environmental Conservation air quality regulations;
- * Use of clean fuels;
- * Use of best available emission control technology;

- * Analysis of health impacts;

- * Analysis of hazardous air pollutants and their cumulative impacts; and

- * Selection of mobile sources that are low in emissions (mobile sources and drilling rigs).

[1.027] Air Quality Impacts - Previously Submitted Chapter 3 Edits

As a cooperating agency, the Borough provided the following edits to air quality sections that appear not to have been adopted by BLM.

1. Arctic Haze: The DSEIS contains insufficient technical data to support the conclusion that "air pollutants associated with industrial activities in Europe and Asia are primarily responsible for causing Arctic haze on the North Slope." This conclusion should be removed from the EIS unless it can be technically supported. North Slope industrial activities emit large amounts of pollution. There has been insufficient technical work completed to rule out this air pollution source as a contributor to Arctic haze.

2. Annual Emissions within the North Slope Borough: Annual emissions within the Borough reported on Page 3-9 do not include all cumulative industrial sources.

3. Section 3.1. 1:

a. The Northeast Planning Area is located west of major oil and gas developments such as Prudhoe Bay, Kuparuk and Alpine. Air quality on the North Slope has been affected by a steady increase in industrial activity since the late 1970's. The prevailing wind direction across the North Slope is from east to west bringing pollutants from well-established industrial developments into new frontier areas such as the Northeast Planning Area.

b. In 2003 the National Research Council published a study entitled "Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope." This report concluded that very little work had been completed by government or industry to understand the amount, distribution or cumulative effect of industrial air pollutants on the North Slope. The NRC found:

No large-scale, long-term monitoring system, has been established to provide a quantitative baseline of spatial or temporal trends in air quality on the North Slope. The lack of adequate information limits the accuracy and precision of assessments of both past and future accumulation of effects.

The quantity of air contaminants reaching the North Slope from distant sources is unknown.

Little is known about the nature or extent of interactions between locally produced and globally transported air contaminants on the North Slope.

c. The NRC recommended:

Air pollution on the North Slope is a concern to residents, and its effects could accumulate. There has been little research to quantify the contribution of local emissions from oil and gas facilities or to determine how local emissions from oil and gas facilities or to determine how local and regional air masses and their contaminants interact. The lack of predevelopment baseline data further hampers assessment of locally and distantly produced pollution on North Slope air quality.

No monitoring system (except for tracking of priority air pollutants from 1986 through 2002 at a limited number of sites) has been established to provide a quantitative baseline of spatial and temporal trends in North Slope air quality. The lack of adequate information limits the accuracy and precision of assessments of past effects and predictions of future accumulation of effects. Given local concerns about air quality and its perceived effects on human health, studies should be undertaken to distinguish between locally derived emissions and long-range transport, to determine how they interact, and if necessary to monitor potential human exposure to air contaminants.

Based on the NRC's findings and recommendations, considerable work is required to develop a baseline air quality assessment for NPRA, estimate cumulative effects of potential NPRA development and ensure human health and the environment are protected by requiring installation of the best available air pollution control technology.

d. Based on computer modeling, and some monitoring data collected in the Kuparuk and Nuiqsut area it is expected that the Northeast Planning Area is in compliance with the NAAQS and the AAAQS for criteria air pollutants such as oxides of nitrogen, oxides of sulfur, carbon monoxide, particulate matter, lead and ozone (Table 3-1), however, there is no air quality monitoring in the Northeast Planning Area to establish accurate baseline air quality measurements, and the Kuparuk data is almost two decades old.

e. Oil and gas development in the Northeast Planning Area, and associated increases in air pollution, has the potential to affect the nearby communities of Nuiqsut, Barrow and Atkasuk. Medical and scientific research has clearly correlated the relationship between small particulate matter emissions and increased respiratory distress. Small particulates, less than 2.5 microns (PM_{2.5}) are common industrial combustion products. There is essentially no data recorded or reported on the amount or distribution of this primary criteria pollutant from North Slope industrial emissions.

f. Very little work has been completed to estimate the cumulative amount and distribution of HAP from North Slope facilities. Some hazardous air pollutants known to be emitted from oil and gas operations, such as benzene, may cause cancer; others are serious respiratory aggravants or have adverse health impacts. HAP may be vented from storage tanks, leak from valves, or may be a combustion by-product.

g. Drilling rigs used on the North Slope have large power requirements, and are typically fueled by diesel fired combustion engines. Rigs often include flares, and hydrocarbon tanks that are vented to atmosphere. The amount of pollution emitted from each drilling rig is significant.

h. Criteria air pollutants such as oxides of nitrogen, oxides of sulfur and carbon monoxide may contribute to the observable "haze" and decrease visibility. The role of the cumulative North Slope industrial pollution to this haze problem is not well understood and further study is warranted. Opacity exceedances, haze and noise pollution associated with industrial combustion sources adversely impact local aesthetics, humans and wildlife in the area.

i. The air quality in the Colville River Delta has been impacted by large industrial operations such as the Alpine and to some extent the Kuparuk oil and gas facilities. Dispersion created by frequent high winds and neutral to unstable conditions in the lower atmosphere serve to re-distribute and dilute pollutant loads out of the Colville River Area, but the predominant wind direction tends to move those pollutants west or southwest.

[1.028, 029, 030, 031, 032, 033] Air Quality Impacts - Previously Submitted Chapter 4 Preferred Alternative Edits

As a cooperating agency, the Borough provided the following edits to air quality sections that appear not to have been adopted by BLM.

[1.028 cont'd] 1. Baseline monitoring data for criteria air pollutants should be obtained for this area so timely and accurate air pollution models and cumulative air pollution assessments can be developed for proposed projects in the Planning Area. Data obtained in the Kuparuk River Unit is 17 years old. There has been substantial industrial development in the Kuparuk River Unit area and west of the Kuparuk River Unit since 1990. Monitoring data obtained in the Nuiqsut area in 2001 will not be representative of the northern portion of the Planning Area. Obtaining at least one year of baseline air quality data is required by the Clean Air Act, Title I, Part C Prevention of Significant Deterioration, Section 165, and appropriate for a significant industrial development area, proximate to indigenous communities. Baseline monitoring should include small particulates, less than 2.5 microns (PM_{2.5}). To date, no ambient air quality monitoring has been obtained on the North Slope to examine this primary respiratory aggravant which is a common industrial combustion by-product. A better understanding of baseline PM_{2.5} concentrations will assist in protecting the health of elders and children that are at increased risk from this respiratory aggravant as industrial development moves closer to year-round communities. Westward movement of industrial air pollution into the Northeast Planning Area, provides a justification for baseline monitoring to be obtained in this region to better understand the amount and distribution of existing pollutant loads in the Planning Area.

[1.029 cont'd] 2. Baseline monitoring data for Hazardous Air Pollutants (HAPs) should be completed to inventory the current amount of HAPs pollution on the North Slope to be able to properly assess any potential increase in HAPs pollution contributed by Northeast Planning Area sources. A better understanding of baseline HAP concentrations will assist in protecting the health of elders and children that are at increased risk from this type of pollution as industrial development moves closer to year-round communities.

[1.030 cont'd] 3. Drilling Rig and Mobile Source Emissions Additional work is necessary to ensure that all stationary and mobile sources of pollution are properly inventoried and assessed when determining the incremental air pollution load for the Northeast Planning Area.

[1.031 cont'd] 4. Opacity and Haze - The role of the cumulative North Slope industrial pollution to this haze problem is not well understood and further study is warranted. Opacity exceedances, haze and noise pollution associated with industrial combustion sources adversely impact local aesthetics, humans and wildlife in the area. Lease activity should be required to minimize opacity events, and install best available pollution control technology to minimize addition contribution to the arctic haze problem.

[1.032 cont'd] 5. Best Available Emission Control Technology - The environmental and human health impact of Northeast Planning Area development can be minimized by installing the best available control technology and selecting lower polluting fuels. Combustion system design should incorporate the best available control technology available to minimize both criteria and hazardous air pollution. After exhaust controls should be installed to minimize post-combustion pollution by-products. Lease terms and stipulations should be assigned requiring the use of natural gas fired combustion equipment, low sulfur fuels, after exhaust controls and closed loop emission control systems for both criteria air pollutants and hazardous air pollutants. In addition, the following best practices should be included:

6. Fuel Selection - Whenever possible natural gas should be used as the fuel of choice. Natural gas is abundant on the North Slope and is a clean fuel source. Where diesel combustion is required, ultra low sulfur diesel should be used to minimize sulfur oxide pollution.

7. Combustion System Selection and Design - Fuel and energy efficient equipment should be selected for facility, rig and mobile sources. Combustion system design should incorporate the best available control technology available to minimize both criteria and hazardous air pollution. After exhaust controls should be installed to minimize post-combustion pollution by-products. Heat recovery should be included in the process design.

8. Venting System Design - Each facility should have a closed-loop control system installed to eliminate venting of air toxics directly to the environment. All facility components that require pressure safety valves and vents should be routed to a capture and control device. Dehydration units and other process units which are known contributors to toxic pollution should be rerouted to a control device. Volatile Organic Compounds (VOCs), containing hazardous air pollutants, should be directly vented to the atmosphere. Vapor combustors, flares, carbon absorption or other equivalent control devices should be included in the design to combustion toxins and reduce their potential to adversely impact worker and community health.

9. Drilling Rigs - Whenever possible, drilling rigs should be run on natural gas or electric power to minimize pollution.

10. Flares - Best available technology should be included in the flare system design to minimize light and noise pollution and achieve a 99.9% combustion efficiency.

11. Mobile Sources - Energy efficient, low emission mobile source equipment should be used whenever possible.

[1.033 cont'd]

12. Monitoring data should be obtained to ensure compliance with air permit requirements and to validate air pollution models. The monitoring data siting, collection and reporting plan should be developed with local community input and to address local concerns.

Oil Spills

BLM made a number of good revisions to section 4.2.2 Oil Spills. We appreciate that a number of the Borough's earlier comments have been addressed. However, [1.034] concerns over the oil well blowout scenario have not yet been fully addressed. BLM's worst case scenarios include a pipeline and tank release (maximum release of 4,800 bbls). The state's response planning standard, requires oil spill planning for an exploration well at 5,500 bbls of oil released, every day, for a total of 15 days. We request that BLM revise its oil spill scenario in Section 4.2.2 to include an exploration well blowout of 82,500 bbls of oil as required by 18 AAC 75.

[1.035] Economy

The Borough has recommended that the economy section address a number of additional issues. The section has improved, but the following issues we raised need further attention.

1. The economic costs of impacts to the physical and human environment
 - a. air pollution, water pollution, and resulting increase in health costs;

- b. potential need for greater distribution of subsistence-harvested resources between communities, resulting in increased cost of providing food; and
 - c. increased stress and anxiety among the local human population resulting in substance abuse, increased social pathologies, and associated medical cost increases.
2. Economic impacts associated with permanent or ice roads.
 3. Any impacts of NPRA development on the costs of local fuel supply.
 4. Any impacts of NPRA development on the cost of local goods.
 5. Any impacts of NPRA exploration and development on Borough costs.
- a. Will emergency services be impacted?
 - b. Will hospitals and clinics be impacted?
 - c. Will airport traffic increase?
 - d. Any impacts to schools and other services.

Transportation

A major transportation issue for the Borough is whether roads from outside the NPR-A would be allowed into the NPR-A. There is an absolute prohibition on such roads under the 1998 management plan. The current proposed action alternatives appear to allow such roads. The Borough supports maintaining the current prohibition.

[1.036] The Borough also recommends that to avoid destructive surface settlement, roads and facilities must employ best available arctic engineering design standards to prevent surface subsidence, thermokarsting, and long-term impact to the tundra vegetation.

Soils

[1.037, 038] The Borough recommended the following soil mitigation measures that were not adopted in the DSEIS:

[1.037 cont'd] 1. Updated Mapping: Prior to industrial development additional soil resource mapping data must be obtained to provide an accurate, high quality survey wherever industrial activity is expected. Much of the mapping and scientific assessment on permafrost and soil conditions in the Planning Area is over 25 years old. Climate change has likely influenced this region and updated soil resource mapping will be required to ensure wells and facilities can be appropriately sited and designed. New survey, assessment and mapping tools will also enhance the quality of data collected in this region and the usefulness of the data in project planning and design. A more detailed survey will be required on a tighter grid spacing to obtain an accurate survey where industrial activity is expected.

[1.038 cont'd] 2. Well Design Standards: To avoid destructive surface settlement, production and injection wells must employ best available arctic engineering well design standards to prevent surface subsidence, annular thawing, and stress on the well casing.

Public Health - General Comments

The BLM took a major step forward in agreeing to accept our detailed impact assessment for human health. The Borough commends BLM for agreeing to work with us to include this information. We believe this represents substantial progress toward addressing some of the deepest concerns facing our residents in relation to expanding industrial development on the North Slope. We look forward to continuing this work with BLM. Specifically, we are eager to work with BLM to refine and strengthen measures that protect our residents from adverse health consequences related to industrial activity in the NPR-A, and to promote health in the region.

With regard to the subsections on public health, we have the following comments.

1. Health Disparities and Federal Public Health Objectives

The U.S Government's top public health objectives, as set out in the Healthy People 2010 program are (1) to increase quality and years of life, and (2) the elimination of health disparities. See Healthy People 2010: A systematic approach to health improvement. Online at http://www.healthypeople.gov/document/html/uih/uih_2.htm

Section 3.4.10 describes the baseline health of North Slope communities. This section highlights marked health disparities between the North Slope population and the general U.S. population. These disparities include a shorter life expectancy; a mortality rate 1.5 times the national rate; a death rate from cancer at nearly twice the national rate; chronic lung disease mortality 3 times the national rate; and suicide and domestic violence many times higher than the rates of these problems in the general U.S. population.

Modern Public Health attributes health disparities between communities and ethnic groups primarily to differences in environmental and social conditions; individual genetic and lifestyle factors are felt to play a relatively less important role. Consequently, the professions of Public Health and Health Policy now recognize that any effective effort to reduce health disparities must involve every sector of society, not only the public health and medical systems. The Chair of the World Health Organization's Commission on Social Determinants of Health has stated that "health status should be of concern to policy makers in every sector, not solely those involved in health policy." See Marmot M (2005) Social Determinants of Health Inequalities. *Lancet*. 365: 1099-104. The U.S. Institute of Medicine has defined the field of public health as "what we do as a society to assure the conditions in which people can be healthy." See Addressing the Social Determinants of Health Inequities: Learning from Doing. *American Journal of Public Health*, Vol 95(4) 553-555.

Any agency, therefore, with the power to make policy decisions that affect living conditions here on the North Slope must do so with the explicit understanding that these decisions may have an impact on health, and must, in our opinion, assume full responsibility protecting the population from the adverse health effects of its actions. Accordingly, because of the pre-existing health disparities on the North Slope, policy decisions must be made with a clear effort to create conditions that protect and promote health, in order to protect our people, and in accordance with the Nation's fundamental objectives for the health of its people.

2. Alternatives B, C, and D pose an unacceptable risk to human health

Development in the planning area poses a number of risks to the health and well-being of our communities, as delineated in subsections on public health for each alternative (refer to sections 4.3.19, 4.4.19, 4.5.19, 4.6.19, and 4.7.7.19). The Borough and Alaska Inter-Tribal Council (AI-TC) fully understand the benefits that accrue to our communities from development, but there

must be a balance. Whereas Alternative A attempts to protect the most important and sensitive parts of the region that sustains our communities, Alternatives B, C, and D threaten the heart of our traditional subsistence lands and culture, and thus pose an unacceptable risk to human health. The health risks posed by development in this region include:

- * Diabetes, high blood pressure, and related complications such as heart disease and strokes;
- * Exacerbation of chronic lung disease, with potentially increased mortality;
- * Cancer, endocrine disorders, and developmental delay if contaminants enter the food chain;
- * Hunger and food insecurity;
- * Domestic violence;
- * Suicide;
- * Drug and alcohol abuse;
- * Anxiety and stress;
- * Accidental deaths; and
- * Infectious diseases such as HIV.

The DSEIS acknowledges potential health benefits from development as well, largely accruing through beneficial effects on personal and regional income, infrastructure, and employment. However, in the balance, a decision to allow development in the most sensitive and productive areas in our region will have dire health consequences for surrounding communities.

[1.039] Land Ownership

Section 3.4.5.1, regarding Native Allotments

Industrial activity near Native allotments will adversely impact aesthetic, historic, cultural and subsistence use value. Subsistence resources will be displaced, requiring hunters to travel further away. Mitigation measures must be implemented to protect the aesthetic, historic, cultural and subsistence use value of each allotment. Where mitigation cannot be accomplished, BLM and the company must ensure the allotment owner is adequately compensated for impacts sustained.

Land Uses

[1.040] Section 3.4.5.2 must acknowledge traditional, cultural, recreational, and subsistence access and use of land in this area is not prohibited during any time of the year for Borough residents. Uses by local residents include, but are not limited to, access to and use of Native Allotments, use of existing cabins, use of existing traditional and cultural use areas, access to subsistence use areas, hiking, boating, camping and other recreational activities.

[1.041] With respect to structures, the section must also acknowledge that the Borough is working with BLM to complete an inventory of structures in the Planning Area. A Borough survey team attempted to complete this work in the fall of 2006, but bad weather prevented completion. The survey will be completed as soon as the work can be safely accomplished.

[1.042] Borough resident cabins and campsites have historic, cultural and subsistence use value to their users. They are used for family and cultural gatherings, the teaching of traditional values and skills, recreation, and as critical bases for the gathering, processing, and storage of subsistence resources. In most cases, they should be seen as identifying a broader area as important to subsistence. These structures must be preserved as historic properties to allow traditional and cultural values to be passed from one generation to another. Removal of these structures would have serious social and cultural impacts. Mitigation measures must be implemented to protect the aesthetic, historic, cultural and subsistence use value of each traditional use area. Where mitigation cannot be accomplished, BLM and any responsible operator must ensure that traditional users are adequately compensated for impacts sustained.

Coastal Zone Management

[1.043] For all sections, references to North Slope Borough Coastal Management Program enforceable policies should be removed because they are no longer in place. The discussions only need to be modified slightly since the requirements of these policies are still valid because they have been incorporated into NSB Municipal Code Title 19.

[1.044] Section 1.7, page 1-7.

Paragraph 3 mentions the federal Coastal Zone Management Act, but it does not mention how activities in the NPR-A must be consistent with this act. A new sentence should be added: "Activities occurring in the NPR-A must be consistent with the enforceable policies of the Alaska Coastal Management Program including the statewide standards at 11 AAC 112 and enforceable policies of a revised North Slope Borough Coastal Management Program. Federally permitted activities must be consistent with the enforceable policies without qualification, while federal activities, such as an oil and gas lease sale, must be consistent to the maximum extent practicable."

[1.045] Section 3.4.5.3, p. 3-145

The following text sections reflect revisions that should be made:

Federally-permitted activities in the coastal area of NPR-A must undergo an ACMP review if they require a listed Federal authorization (15 CFR § 930.53[a] (1); 11 AAC § 110.400). Federally permitted activities outside the coastal area are not required to undergo a state consistency review. Applicants for federally permitted activities must certify that their activities are consistent with the ACMP enforceable policies. The state consistency review for federally permitted activities begins when the state receives a consistency certification and necessary data and information from the party submitting the application to the Federal agency. Federally permitted activities subject to ACMP review will not be authorized if they are not consistent with the ACMP enforceable policies which include the statewide ACMP standards and the revised coastal district enforceable policies.

[1.046] Section 3.4.5.3, p. 3-146

We suggest the following revision of the text of the second paragraph:

Thirty-three coastal districts developed coastal management programs with enforceable policies that became part of the ACMP. As a result of changes to the ACMA in 2003, district plans developed and approved under the previous ACMP expired in September 2007. These plans must be updated to comply with the revised ACMP statutes and regulations. Amendments to the district programs must be approved by the ADNRC commissioner and by the Secretary of

Commerce through the NOAA OCRM. The statewide standards that may be relevant to potential activities in the planning area addressed in this Amended IAP/EIS are summarized below.

[1.047] Section 3.4.5.3, p. 3-147 North Slope Borough Coastal Management Program

The second to the last sentence in the first paragraph should be amended as follows: "The coastal zone in the NSB extends approximately 25 miles from the coast and along a one-mile corridor on each side of anadromous streams."

The references to the North Slope Borough enforceable policies in the remainder of this section should be removed since they are no longer applicable. It would be appropriate to repeat that the North Slope Borough is currently developing its revised coastal management plan that will include new enforceable policies.

[1.048] Section 3.4.5.3, p. 3-148 North Slope Borough Land Management

The last sentence on page 3-148 is not entirely correct: "Local land use plans in the NPR-A are acknowledged, but they do not necessarily control activities on Federal lands." This issue is complicated, and it may not be appropriate to bring attention. If you want to address it here, we would refer you to language from the Granite Rock Supreme Court Decision regarding the enforceability of local zoning laws on BLM lands.

[1.049, 050, 051, 052, 053] [1.055] Section 4.3.15 Coastal Zone Management (Alternative A)

The suggested changes for this section in we offered in March 2007 were not incorporated to the DSEIS. As a result, there are a number of incorrect statements that **[1.049 cont'd]** require revision:

* P. 4-219. First paragraph. Activities must be consistent with "enforceable policies" not with "Coastal Zone **[1.050 cont'd]** Management priorities."

* P. 4-219. Second paragraph. Federal activities must be consistent with the ACMP enforceable policies to the maximum extent practicable. Federally-permitted activities must be consistent with the ACMP enforceable policies **[1.051 cont'd]** without qualification.

* P. 4-219. Second paragraph. ACMP means Alaska Coastal Management **[1.052 cont'd]** Program" (not "plan").

* P. 4-219. Third paragraph. This paragraph is correct for federally permitted activities, but there is no limit for applicability of a federal consistency determination for federal activities. This correction should **[1.053 cont'd]** be **[1.054]** made on p. 220 also.

* P. 4-219. Fourth paragraph. The reference to NSB policies should be removed since they are no longer in place. The discussion on the comprehensive plan should be separated from the discussion on the NSB CMP because it does not relate directly to the CMP.

[1.055 cont'd] * P. 4-222. The discussions on Natural Hazards, Energy Facilities, and Utility Routes and Facilities contain references to NSB CMP policies that are no longer in place.

[1.056, 057, 058, 059, 060] Section 4.4.15 Coastal Zone Management (Alternative B)

[1.056 cont'd] * Section 4.4.15.1, p. 4-355. The last sentence in this section states that activities would be consistent with ACMP standards. This sentence should be amended to state that "activities would be required to be consistent with the enforceable policies of the ACMP."

[1.057 cont'd] * Under the subsistence section on p. 4-357, an additional sentence should be added to clarify that federal activities and federally-permitted activities must be consistent with the enforceable policies, including the Subsistence standard, under provisions of 11 AAC 110.015. In other words, federally-permitted activities and federal activities occurring outside the designated area need to be consistent with the Subsistence standard.

[1.058 cont'd] * Under the habitats discussion on p. 4-358, the term "upland" should be removed before important habitat" since important habitat can be located in any habitat. The discussion should be expanded to include potential habitat effects from an oil spill.

[1.059 cont'd] * The discussion on effects of abandonment and rehabilitation should be expanded beyond this brief discussion. The GAO report on this matter included some serious concerns that need to be addressed on the North Slope.

[1.060 cont'd] * The last sentence of the first paragraph of the conclusion on p. 4-361 does not make sense. Effects in previously disturbed areas would also be "additive."

[1.061, 062, 063, 064, 065, 066, 067] Section 4.5.15 Coastal Zone Management (Alternative C)

[1.061 cont'd] * The last sentence of the first paragraph in this section on p. 4-466 should be amended to state that activities would be required to be consistent with ACMP enforceable policies.

[1.062 cont'd] * Section 4.5.15.2 on p. 4-467 should be revised to reference "any land or water use of the coastal zone." The current language says "in the coastal zone." This is important because the CZMA requires effects to coastal uses and resources occurring in federal lands even though federal lands are excluded from the coastal zone.

[1.063 cont'd] * Under the subsistence section on p. 4-469, an additional sentence should be added to clarify that federal activities and federally-permitted activities must be consistent with the enforceable policies, including the Subsistence standard, under provisions of 11 AAC 110.015. In other words, federally-permitted activities and federal activities occurring outside the designated area need to be consistent with the Subsistence standard.

[1.064 cont'd] * Under the habitats discussion on p. 4-470, the term "upland" should be removed before important habitat" since important habitat can be located in any habitat. The discussion should be expanded to include potential habitat effects from an oil spill.

[1.065 cont'd] * The discussion on effects of abandonment and rehabilitation on p. 4-472 should be expanded beyond this brief discussion. The GAO report on this matter included some serious concerns that need to be addressed on the North Slope.

[1.066 cont'd] * Section 4.5.15.3, p. 4-473. Replace term "Coastal Zone Policy standards" with "ACMP enforceable policies."

[1.067 cont'd] * Section 4.5.15.3, p. 4-473. The statement that "no resource would become unavailable, undesirable for use, or experience significant overall population reductions" should be revised or omitted because the analysis does not support this statement. For example, there

is evidence that subsistence resources in the developed oil fields are not used because of a perception that they are tainted.

[1.068, 069, 070] [1.072, 073] Section 4.6.15 Coastal Zone Management (Alternative D)

* The last sentence of the first paragraph in this section on p. 4-588 should be amended to state that activities would be required to be consistent with **[1.069 cont'd]** h ACMP enforceable policies.

* Section 4.6.15.2 on p. 4-588 should be revised to reference "any land or water use of the coastal zone." The current language says "in the coastal zone." This is important because the CZMA requires effects to coastal uses and resources occurring in federal lands even though federal lands are **exc [1.070 cont'd]** luded from the coastal zone.

* Under the subsistence section on p. 4-590, an additional sentence should be added to clarify that federal activities and federally-permitted activities must be consistent with the enforceable policies, including the Subsistence standard, under provisions of 11 AAC 110.015. In other words, federally-permitted activities and federal activities occurring outside the designated area need to be consistent **with [1.071]** the Subsistence standard.

* Under the habitats discussion on p. 4-591, the term "upland" should be removed before important habitat" since important habitat can be located in any habitat. The discussion should be expanded to include potential habitat effects from an oil spill.

[1.072 cont'd] * The discussion on effects of abandonment and rehabilitation on p. 4-594 should be expanded beyond this brief discussion. The GAO report on this matter included some serious concerns that need to be addressed on the North Slope.

[1.073 cont'd] * Section 4.6.15.4, p. 4-594. The statement that "no resource would become unavailable, undesirable for use, or experience significant overall population reduction." should be revised or omitted because the analysis does not support this statement.

[1.074] Section 4.8.15 Coastal Zone Management

The discussion on consistency with the ACMP does not include any analysis about cumulative effects of the sale with other activities. For example, there is no discussion of how impacts of multiple developments would affect subsistence from the community of Nuiqsut. There are already substantial impacts to subsistence reported for the community, and the cumulative impacts of additional developments to the west and south of Nuiqsut could have significant impacts.

[1.075] Section 4.10.15 Coastal Zone Management Irreversible and Irretrievable Commitment of Resources

This section contains unsupported statements. First, it states that there are no anticipated conflicts with the ACMP standards and policies, but it does not explain why. Unless all infrastructure is to be required to be removed after use, there could be irreversible effects to coastal uses and resources. Also, the last sentence refers to areas outside the planning area within the boundaries of the Borough stating that infrastructure "could be removed" after development ended. This sentence is confusing: It does not address what will happen to infrastructure once development ends inside or outside the planning area, and it implies that the area inside the planning area is not within the Borough.

[1.076] Terrestrial Mammals

As we have stated repeatedly, our basic concern with respect to caribou is the extent of infrastructure and activities that would be permitted given the mitigation measures analyzed under the action alternatives. It is our belief that given development scenarios that could result, impacts to caribou and to the critical subsistence harvest of caribou, could not be limited to acceptable levels. Attached for instance, is a map that displays caribou movements (10 GPS collared female TCH caribou 2004-2005) overlaid on a hypothetical development scenario under Alternative D. The potential for significant impacts to this herd is clear.

Marine Mammals

[1.077] A paragraph with reference to the ice extent of 2006/2007 and the effects it appears to be having on marine species, such as walrus, would be helpful. *It is likely that pressure from lack of ice may result in a change in distribution of animals.* Also, **[1.078]** absent in the marine mammals sections and in sections of the document dealing with other species, is any mention of the body condition and health of the animals mentioned. This is important to note beyond mere numbers of animals in a population, as data with respect to these indicators are needed to monitor the potential effects of change in the Arctic. With respect to gray whales, for example, observers have noted that many animals migrating south from Alaskan waters this fall appeared thin and in poor condition.

[1.079] A note should be added to the bowhead migration section that it remains to be seen what effect seismic and increased industrial activity will have on the migration (i.e. deflections could occur) and on feeding and resting activities.

[1.080] With respect to little being known about "microbial or viral disease agents" in bowhead whales: Please see Rosa, C. 2006. Health Assessment of the Bowhead Whale. University of Alaska Fairbanks. 263 pp. This thesis covers much of this and has found the bowhead whale to be remarkably healthy. Several publications on bowhead whale health have been published in 2007 and a specific pathology manuscript should be published in 2008.

[1.081] Birds

Section 3.3.8: the potential Endangered Species Act listing of the Yellow-billed Loon ought to be mentioned here.

[1.082, 083, 084]

Fish

ROP E-6 reads as follows:

Required Operating Procedure Objective: Reduce the potential for ice-jam flooding, impacts to wetlands and floodplains, erosion, alteration of natural drainage patterns, and restriction of fish passage. Requirement/Standard: Stream and marsh crossings shall be designed and constructed to ensure free passage of fish, maintain natural drainage, and minimize adverse effects to natural stream flow. Note: Bridges, rather than culverts, are the preferred method for crossing rivers. When necessary, culverts can be constructed on smaller streams, if they are large enough to avoid restricting fish passage or adversely affecting natural stream flow.

[1.082 cont'd] The phrase "smaller streams" must be defined more clearly. **[1.083 cont'd]** We suggest that a mitigation measure be added similar to those designed for the protection of

caribou and waterfowl and requiring that lessees collect site-specific hydrologic and fish data for a period of three years during breakup prior to the placement of any facilities that could impact fish movement and prior to any determination that a culvert may be used rather than a bridge. **[1.084 cont'd]** A primary objective of the Borough regarding fish conservation in the NPR-A is the protection and maintenance of habitat and the natural flow in fish-bearing drainages. In that regard, BLM must incorporate in the Final EIS a report by Dr. Larry Moulton (Distribution and Quantity of Potential Fish Habitat in the NE NPRA Planning Area, Moulton October 2007) describing the drainages in the Northeast Planning Area. We urge you to include at the very least Figures 1, 6 and 7 of the report in the Final EIS. We also recommend that state-of-the-art stream crossing technology be required.

Additional points:

* Any east-west gravel road within the NE NPR-A will be an engineering challenge in terms of maintaining the natural flow of area drainages and viable fish populations.

* These concerns about drainages and fish dispersal pertain in particular to spring breakup and fall, when fish return to over-wintering areas.

Comparison of Mitigation Measures

The Borough, along with the public, agencies, industry, and other stakeholders invested significant time and energy in developing the seventy-nine 1998 stipulations that underpin a management plan that allows leasing of over 87% of the Northeast Planning Area of the NPR-A (4 million acres of 4.6 million acres). We recognize that BLM has a strong preference for converting the 1998 mitigation measures from "prescriptive" stipulations to "performance-based" stipulations and Required Operating Procedures. We understand a primary driver for BLM is to achieve consistency between the Northwest Planning Area management plan, which has performance-based measures, and an amended Northeast Planning Area plan. In the spirit of cooperation, the Borough has been willing to work with BLM to make this conversion. However, in moving toward performance-based measures, we are not willing to weaken any protections now in place.

Below are measures that we believe have been weakened in the proposed conversion. We ask that these measures be revised to maintain an equal level of protection as provided under the existing 1998 plan.

Also, since 1998, there have been technical advances in best available technology (e.g. zero discharge). Since BLM has determined that this is an appropriate time to revise the mitigation measures, the Borough has provided recommendations for the revision of both the performance and prescriptive measures to reflect current best available technology.

Waste Handling

1. Recommended Operating Procedure (ROP) A-1 is not equivalent to Alternative A, Stipulation No. 6. Stipulation 6 requires "areas of operations shall be left clean of all debris." The ROP A-1 for Alternatives B, C, and D only requires debris removal in areas of human activity.

ROP A-1 states: "Objective: Protect the health and safety of oil field workers and the general public by avoiding the disposal of solid waste and garbage near areas of human activity."

The requirement should be to remove debris from all locations to protect human health, wildlife and the environment, not strictly in areas of human activity.

2. ROP A-3 and ROP A-4 is not equivalent to Alternative A, Stipulation No. 1. Stipulation No.1 addresses oil spill prevention and response. The ROPs A-3 and A-4 for Alternatives B, C, and D are not equivalent, because they do not include:

- a. Annual training for Borough and local community spill response teams;
- b. A requirement to plan and conduct an annual major spill response field-deployment drill;
- c. Development of peer-reviewed Environmentally Sensitive Index Maps for the areas impacted by the lessees' operations;
- d. A requirement for use of best available oil spill prevention and response;
- e. A restriction from May 1 to September 30, prohibiting exploration drilling in the Special Caribou Stipulations area;
- f. A restriction preventing storage of fuel on any water body (or its active flood plain) or refueling of equipment in these areas; and
- g. A restriction prohibiting construction camps on frozen lakes and river ice.

These restrictions listed above (a-g) must be included in ROP A-3 and ROP A-4.

[1.085] 3. ROP A-3 states that the hazardous waste plan "may" consist of Best Management Practices. ROP A-3 should state that the hazardous waste plan "must" consist of Best Management Practices.

[1.086] 4. Alternative A, Stipulation No. 4b and ROP A-6 should both be revised to prohibit surface discharge of reserve pit fluids. Zero discharge is proven best available disposal technology.

[1.087] 5. Alternative A, Stipulation No. 5 and ROP A-7 should both be revised to prohibit discharge of produced waters in upland areas and marine waters. Zero discharge is proven to be best available disposal technology.

Water Use

[1.088] 1. ROP B-1 is in direct conflict with ROP B-2. ROP B-1 prohibits water withdrawal from rivers and streams during winter, but ROP B-2 allows it under some conditions.

Winter Overland Moves and Seismic Work

1. ROP C-3 and C-4 are not equivalent to Alternative A, Stipulation No. 24, because there is no 100ft set-back requirement for travel near overwintering fish streams and lakes. The DSEIS provides no basis for removing this restriction, and provides no explanation as to why this is an environmentally preferable alternative. The 100ft set-back should remain in ROP C-3 and C-4.

Oil and Gas Exploratory Work

1. ROP D-1 is not equivalent to Alternative A, Stipulation No. 28. Stipulations No. 28 prohibits drilling in lakes, rivers and streams. ROP D-1 allows drilling if there is no feasible alternative. The DSEIS provides no basis for removing this restriction, and provides no explanation as to why this is an environmentally preferable alternative. Industry has proven it has the capability

to drill directionally from surface wellhead locations to subsurface locations several miles away. Therefore, this prohibition should remain in place.

2. ROP D-2 is not equivalent to Alternative A, Stipulation No. 27. Stipulation No. 27 prohibits building gravel roads and permanent facilities during exploration. The DSEIS provides no basis for removing this restriction, and provides no explanation as to why this is an environmentally preferable alternative. Industry has proven that the use of ice roads and temporary exploration facilities is economic. Therefore, this prohibition should remain in place.

Facility Design and Construction

1. ROP E-1 is not equivalent to Alternative A, Stipulation No. 48. Stipulation No. 48 prohibits the construction of permanent roads connecting to a road system or docks outside the planning area, with no exception. The DSEIS provides no basis for removing this restriction, and provides no explanation as to why this is an environmentally preferable alternative, or how this alternative protects the subsistence rights of our community. In fact, the DSEIS even describes Stipulation No. 48 as being more effective. Industry has proven that the use of ice roads and air service is economic for oil and gas development. Therefore, this prohibition should remain in place. ROP E-1 also removes the Borough's authority to review and consider waivers to Stipulation No. 48, which was an important agreement we reached with BLM in 1998. BLM does not provide any rationale for removing the Borough from the decision making process, especially when the Borough possesses local and traditional knowledge and it will be the our subsistence users who will be impacted.

2. ROP E-2 is not equivalent to Alternative A, Stipulation No. 41. Stipulations No. 41 prohibits permanent facilities within 500 feet of water bodies. ROP E-2 allows construction of permanent facilities within 500 feet of a fish-bearing, or 100 ft of non-fish-bearing water bodies, on a case-by-case basis. The DSEIS provides no basis for removing this restriction, and provides no explanation as to why this is an environmentally preferable alternative. In fact, the DSEIS describes Stipulation No. 41 as being more effective. This prohibition should remain in place. ROP E-2 does not include a prohibition for construction camps on lakes and river, nor does it protect tundra damage from bulldozer use.

3. ROP E-3 states that a monitoring program "may" be required to address the objective of water quality and free passage of fish. ROP E-3 should state that a monitoring program "shall" be required.

4. ROP E-4 is not equivalent to Alternative A, Stipulation No. 38, because it does not require the use of best available technology in the design, construction or operation of pipelines. ROP E-4 should include a best available technology requirement.

5. ROP E-5 is not equivalent to Alternative A, Stipulation No. 32, because it does not require the use of extended reach drilling, facility sharing, co-location of facilities, and/or gravel use reduction. ROP E-5 established no specific criteria to be used in the decision making process. The generic criteria offered ("designed...to the maximum extent practicable considering environmental, economic, safety and social impacts") is fraught with wide interpretation and is so vague that it is not useful in establishing specific criteria from which the industry or public can rely. The use of extended reach drilling, facility sharing, co-location of facilities, and gravel use reduction has been proven to be the best available technology. The DSEIS provides no basis for removing these restrictions, and provides no explanation as to why this is an environmentally preferable alternative.

6. ROP E-6 is not equivalent to Alternative A, Stipulation No. 42, because it does not include a design requirement to limit erosion.

7. ROP E-8 is not equivalent to Alternative A, Stipulation No. 40, because it does not prohibit mine sites within the active floodplain of a river, stream or lake, and it does not include required Borough consultation and approval for waivers to this prohibition.

8. ROP E-10 and ROP E-11 are additional requirements not included in Alternative A. They should be added to Alternative A.

Use of Aircraft for Permitted Activities

1. ROP F-1 is not equivalent to Alternative A, Stipulation No. 45. Stipulation No. 45 requires aircraft to maintain an altitude of at least 1,000 feet over caribou winter ranges from October 1 to May 15. ROP F-1 changed this date to May 1 with no explanation. The October 1 to May 15 date range is appropriate in ROP F-1.

Oilfield Abandonment

1. ROP G-1 is not equivalent to Alternative A, Stipulation No. 58 because it does not include consultation with the Borough.

Subsistence Consultation for Permitted Activities

1. ROP H-1 is not equivalent to Alternative A, Stipulation No. 47 because it does not include the set-back limitations agreed to in 1998 to protect subsistence and traditional Native use of this region. ROP H-1 must include the 1-mile set-back for all development and 1/4-mile set-back for pipelines and roads from all of our traditional cabins and campsites. In fact, BLM's own analysis concludes the Alternative A stipulations are more effective in protecting subsistence.

2. ROP H-1 is not equivalent to Alternative A, Stipulation No. 26 because it does not include the 1200 feet exploration set-back. The NSB residents always deemed the exploration set-back of 1200ft in Stipulation No. 26 inadequate. The exploration set-back should be set at 1mile, because explorations wells are typically used as production wells during development, if hydrocarbons are found. It would be poor policy to allow exploration wells to be drilled 1200 feet from a cabin or campsite, and then restrict that well from being used for later production. This would result in economic waste, and needless impact to the environmental. BLM's own analysis concludes the Alternative A stipulations are more effective in protecting subsistence. These limitations should be included in ROP H-1.

3. ROP H-2 is not equivalent to Alternative A, Stipulation No. 23 because it does not include the 1200 feet seismic exploration set-back. BLM's own analysis concludes the Alternative A stipulation is more effective in protecting subsistence. This limitation should be included in ROP H-2..

4. ROP H-2 is not equivalent to Alternative A, Stipulation No. 62 because it does not list the areas that should be afforded special consideration for protection. This list should be included in ROP H-2.

Lease Stipulations that Apply in Biologically Sensitive Areas

1. ROP K-2, K-4 and K-6 are not equivalent to Alternative A, Stipulation No. 31 because they do not prohibit permanent oil and gas facilities in the Teshekpuk Lake Surface Protection Area.

BLM's own analysis concludes the Alternative A stipulation is more effective. These limitations should be included in ROP K-2, K-4 and K-6.

2. ROP K-4 is not equivalent to Alternative A, Stipulation No. 31 because it does not prohibit permanent oil and gas facilities in the Goose Molting Area. BLM's own analysis concludes the Alternative A stipulation is more effective. This limitation should be included in ROP K-4.

3. ROP K-9 is not applied to Alternatives B and C and is not equivalent to Alternative A, Stipulation No. 31 because it does not prohibit permanent oil and gas facilities in the Teshekpuk Lake Surface Protection Area. BLM's own analysis concludes the Alternative A stipulation is more effective. A prohibition on permanent oil and gas facilities in the Teshekpuk Lake Surface Protection Area should be included in these alternatives.

[1.089] Summer Tundra Travel

1. ROP L-1 is not equivalent to Alternative A, Stipulation No. 24 because it allows for summer tundra travel. BLM's rationale for revising this requirement is that industry will request waivers to this requirement; yet the DSEIS provides no technical or economic data to support the need for summer travel. The DSEIS should explain why summer travel was prohibited in 1998, and why it is now needed.

Conclusion and Borough Recommendation:

The Borough supports a modified Alternative A that would open no new areas to leasing while capturing the highest levels of protection embodied in the 1998 management plan as converted to a mixed prescriptive and performance-based plan. While Alternative A is labeled the "No Action Alternative," it is not a true No Action Alternative. It would offer for lease 87% of the planning area. There should be no rush to open new areas, as the oil and gas industry already has access to most of the Northeast and Northwest NPR-A Planning Areas. Our assessment is that the best available science dictates a precautionary approach to management of the highly sensitive area around and north of Teshekpuk Lake. The risks associated with an expansion of exploration and development into these areas are very high. Our fear and suspicion is that incremental, piecemeal development will ultimately fragment this area and erode its value to molting geese, caribou, fish, and the subsistence users who depend upon it. The likely long-term effects of climate change on the region's flora, fauna, and human users are likely to be significant, and will compound and be compounded by the impacts of any permitted industrial activity. They must be more fully identified, understood, and analyzed. The comparative effectiveness of existing Northeast Planning Area mitigation measures and the new, untested, largely performance-based measures adopted for the Northwest Planning Area must be rigorously evaluated before the most sensitive areas are opened and placed at risk.

Thank you again for this opportunity to comment.

Sincerely,

Edward S. Itta

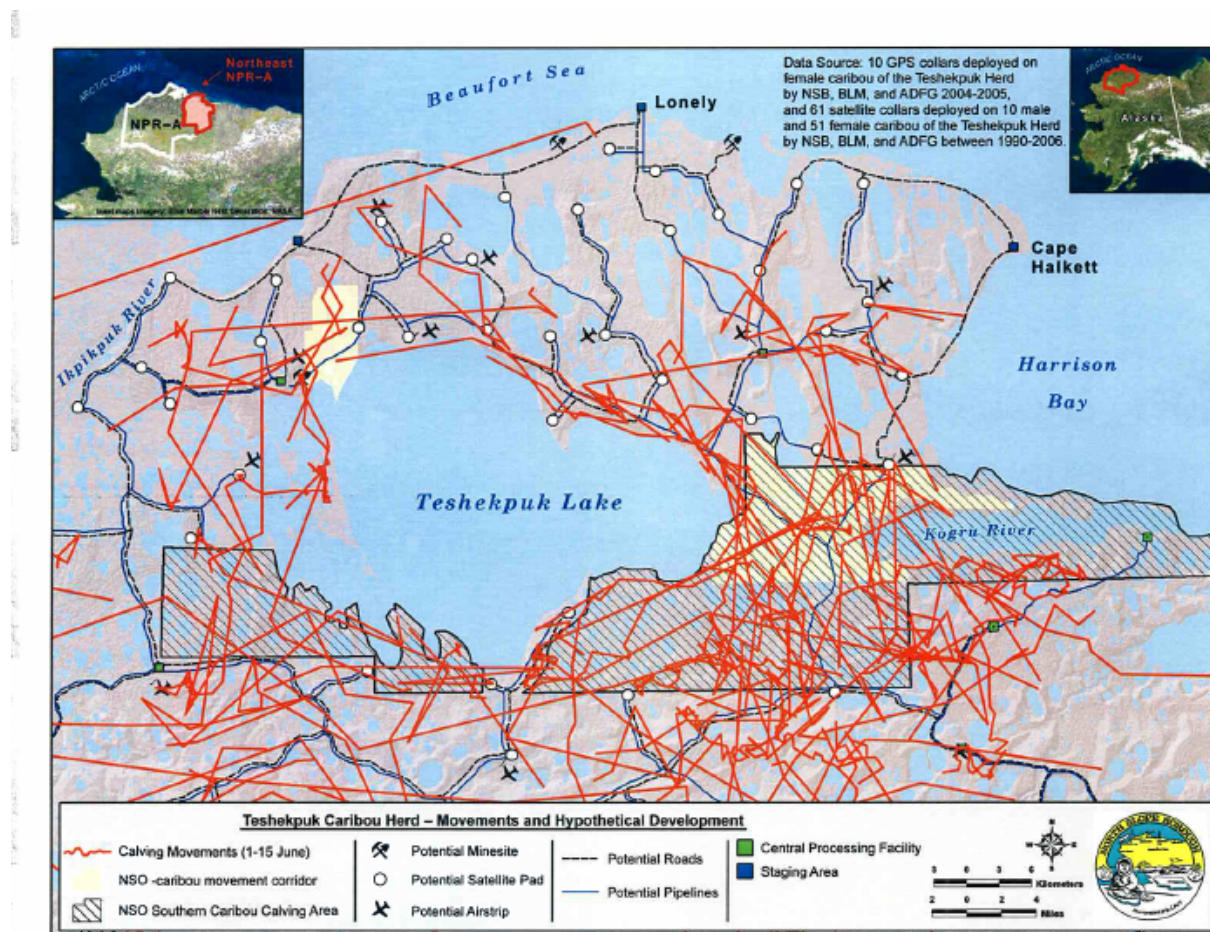
Mayor

Att Map: Teshekpuk Caribou Herd - Movements & Hypothetical Development

cc Senator Ted Stevens
Senator Lisa Murkowski
Governor Sarah Palin

Northeast NPR-A Supplemental IAP/EIS

Henri Bisson, BLM Deputy Director for Operations
Carl Brower, Mayor, City of Nuiqsut
Isaac Nukapigak, President, Kuukpik Village Corporation
Leonard Lampe, Sr., President, Native Village of Nuiqsuit
Mike Stotts, Mayor, City of Barrow
Tommy Olemaun, Native Village of Barrow
George Edwardsen, Iñupiat Community of the Arctic Slope
George Paneak, Mayor, City of Anaktuvuk Pass
Elizabeth Holligsworth, Mayor of Atkasuk
Bobbi Quintavell, President, ASRC
Taquilik Hepa, Director NSB Department of Wildlife Management
Johnny Aiken, Director NSB Department of Planning
Bessie O'Rourke, NSB Attorney
Karla Kolash, NSB Mayor's Office
Andy Mack, NSB Mayor's Office
Geoff Carroll, Biologist, ADF&G
Mr. Tom Lonnie



[Response to 1.001]

The BLM considered the request for extending the comment period to 90 days, twice the period required under NEPA, and extended the comment period to 74 days.

[Response to 1.002]

Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown, that there is a lack of precise surface resource and use information for many resources and uses, and that a relatively small amount of total cumulative impacts are likely to be attributable to the alternatives considered in this Supplemental IAP/EIS, the additional methods of evaluating cumulative effects suggested in the comment would add little or no value to the impact analysis.

[Response to 1.003]

Appendix K includes consideration of refined petroleum products, (see, for example Table K-1 and the first paragraph of Section K.1). Refined petroleum includes fuels, lubricants and solvents. Please note the discussion of relative quantities in Section K.1.2.2. There are other toxic substances, such as acids, but they are used in extremely small quantities compared to the volumes of crude oil and refined oils. A discussion entitled "Solid and Hazardous Waste Removal and Remediation" is included in the Basic Assumptions for the Environmental Consequences Assessment subsection of Chapter 4.

Methanol is an alcohol that can be produced from wood, natural gas or light petroleum. The DS-16 Flowline D, Crude Methanol Spill is reported at the ADEC website http://www.dec.state.ak.us/spar/perp/response/sum_fy08/071015301/071015301_index.htm.

The volumes are reported as follows: "BPXA has estimated the spill volume total at 1,932 gallons (46 bbls) of product. Included in this total is 630 gallons (15 bbls) of neat methanol, 1,260 gallons (30 bbls) of a 60/40 methanol water mixture and 42 gallons (1 bbl) of a crude/water mixture. Neat methanol is 100% methanol." These volumes are all in the category of small spills. Because the category of "other" spills is less than 1% of all spills (Section K.1.2.2 of Appendix K), the additional impacts would be negligible.

[Response to 1.004]

At issue with regard to a Section 810 finding is whether the identified impacts, when taken into consideration with proposed mitigation, significantly restrict subsistence use. The BLM firmly believes that while there will be some adverse effects, that these effects do not meet the threshold of significantly restricting subsistence use, which, following BLM policy and derived from case law (Kunaknana et al. vs. Watt 1983, upheld in Kunaknana v. Clark 9th Cir. 1984) is a substantial reduction in the opportunity to continue subsistence uses of renewable resources. For the three action alternatives (Alternatives B, C and D), the BLM believes that the proposed actions, along with the proposed mitigation, does not result in a significant restriction to subsistence uses. However, the cumulative effects analysis did result in a finding that the activities proposed may result in a significant restriction to subsistence uses. The omission of Wainwright as a potentially impacted community within the finding section for the cumulative case (pages A-19 and A-20) is an oversight and is corrected in the Final. Wainwright is included in Section A.2.5.1 Evaluation of the Effect of Such Use, Occupancy, and Disposition on Subsistence Uses and Needs, and an ANILCA 810 Hearing was held in the community on September 26, 2007.

[Response to 1.005]

It is less likely that seismic activities would occur at Teshekpuk Lake under Alternatives A and D than under Alternatives B and C, but it could occur. Edits have been made to several impact analyses in Chapter 4 to acknowledge that impacts are less likely to occur from seismic at Teshekpuk Lake under Alternatives A and D than under the other alternatives.

[Response to 1.006]

The BLM is proposing to use the most up-to-date information and suggested practices for the protection of raptors in this proposed mitigation. Specific recommendations may change over time so specific regulations will not be spelled out but rather be kept open to allow for increases in our knowledge in mitigating this issue. The text of the proposed mitigation has been edited to reflect the BLM's position.

[Response to 1.007]

For clarity, Figure 4-5 of the DSEIS does not display the 22 individual play boundaries identified in the planning area by MMS and BLM. These agencies independently performed a joint assessment of the oil resource potential, including play analysis, of the Northeast and Northwest NPR-A Planning Areas (see Appendix 7 of the Northwest IAP/EIS (USDOI BLM and MMS, 2003)). The assessment analyzed proprietary 3-D seismic surveys in the Northeast NPR-A Planning Area for indicators of potential stratigraphic traps. These data were used to forecast the numbers and size range of prospects in correlative plays across the northern half of the NPR-A. Data from nine proprietary wells drilled on leases acquired in 1999 in the Northeast NPR-A Planning Area were also incorporated into the assessment of some plays.

Combining the contributions from assessment plays with their respective play areas indicates that a high percentage of the economic oil resources are expected in the northern third of the planning area. This conclusion is consistent with production experience on the North Slope. Figure 4-5 of the DSEIS summarizes the oil resource potential of the planning area and incorporates both geologic (play analysis) and economic potential. More specific discussions on the locations of future development would be misleading.

Although the distribution and size of prospects are incorporated into play analysis, the 3-D seismic and exploration well data used to define individual prospects are considered proprietary.

[Response to 1.008]

Additional analysis has been added to both the vegetation and terrestrial mammals discussion of the cumulative impact analysis to address the potential impacts of tundra fires that may result from climate change.

[Response to 1.009]

The "Clean Air Act requirements" described above are addressed by the ADEC, subject to EPA oversight. In addition, all BLM activities (either directly or through use authorizations) must comply with all applicable local, state, tribal and federal air quality laws, regulations, standards, and implementation plans. Therefore, any future activity would be required to obtain necessary air pollutant emission permits from the ADEC.

NEPA requires federal agencies to analyze and disclose potential environmental impacts before a specific activity is allowed to proceed. The IAP/EIS described both the current air quality conditions and regulations in Chapter 3 – Affected Environment, and indicated, to the extent possible, potential future air quality impacts due to additional leasing in Chapter 4 –

Environmental Consequences. This included a comparison to site-specific conditions, as well as predicted future impacts, to existing and proposed development on the North Slope. However, BLM can not simply assume all future development in the planning area would not be significant simply because “ambient monitoring data” have not shown problems before, or that “air impacts from future development are not expected to be greater than existing localized air impacts.” As clearly stated in the Draft EIS, “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 1.010]

Both PM_{2.5} and PM₁₀ are described in the IAP/EIS, although representative PM_{2.5} data have not been collected in the planning area. In fact, the IAP/EIS clearly states “Combustion sources primarily emit PM_{2.5} while land disturbance primarily emits PM₁₀.”

[Response to 1.011]

Chapter 3 of the IAP/EIS states “During 1999 (the only year data were provided; EPA, 2007), emissions from all 188 hazardous air pollutants (HAP) amounted to 595,740 pounds. Seven specific HAP (benzene, toluene, ethyl benzene, xylenes, formaldehyde, hexane, and 2,2,4-trimethylpentane) accounted for 87% of these total emissions.” and “Local residents have expressed concerns regarding air quality impacts from fine particulate matter and hazardous air pollutants emitted during oil and gas development. However, as described by the National Research Council (2003), “Little research has been done to quantify the effects of air pollution on the North Slope or to determine how local and regional air masses interact. Air pollution monitoring has been limited to priority pollutants from 1986 through 2002 at a few sites. Not enough information is available to provide a quantitative baseline of spatial and temporal trends in air quality over long periods across the North Slope.”

In addition, Chapter 4 of the IAP/EIS states “In addition to these criteria pollutants, certain hazardous air pollutants (HAP) may also be emitted. Benzene, toluene, ethyl benzene and xylenes are common HAP associated with volatilization of oil and gas resources, as is formaldehyde from compressor engines. Depending on conditions, hydrogen sulfide may also be found in oil, however an accurate determination of specific HAP quantities and potential impacts is not feasible at this stage, given that particular site-specific development activities and pollution controls are not yet able to be predicted.”

The BLM continues to maintain that there are too many uncertainties until a specific proposal for development is presented to do more detailed analysis and that the analysis provided in the IAP/EIS is appropriate.

[Response to 1.012]

As was clearly stated in the Draft EIS, “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 1.013]

As clearly stated in the Draft EIS, “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.” Future analysis of proposed development would include both potential “fence-line” and “region-wide” impacts. Region-wide analysis is appropriate at this stage; i.e., prior to identification of specific facility locations.

[Response to 1.014]

NEPA requires federal agencies to analyze and disclose potential environmental impacts before

a specific activity is allowed to proceed. The IAP/EIS describes both the current air quality conditions and regulations in Chapter 3 – Affected Environment, and indicated, to the extent possible, potential future air quality impacts due to additional leasing in Chapter 4 – Environmental Consequences. This included a comparison to site-specific conditions, as well as predicted future impacts, to existing and proposed development on the North Slope. As clearly stated in the Draft EIS, “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 1.015]

A potential mitigation measure related to air quality monitoring is described under Public Health subsections in Chapter 4.

[Response to 1.016]

The determination of “attainment” status under the Clean Air Act is a legal responsibility of ADEC, with EPA oversight. The IAP/EIS reflects the determination as made by ADEC. Any future modeling conducted by BLM under NEPA will comply with applicable CEQ regulations regarding the appropriate conduct of environmental analyses (http://www.nepa.gov/nepa/regs/ceq/toc_ceq.htm)

[Response to 1.017]

The specific source of air pollutants found in vegetation is unknown, but likely to originate from emissions originating globally (including the NSB), especially those from above the Arctic Circle. This also applies to Arctic Haze. BLM has not conducted a study to specifically identify which air pollutants are found in arctic vegetation.

[Response to 1.018]

Chapter 3 of the IAP/EIS states “During 1999 (the only year data were provided; EPA, 2007), emissions from all 188 hazardous air pollutants (HAP) amounted to 595,740 pounds. Seven specific HAP (benzene, toluene, ethyl benzene, xylenes, formaldehyde, hexane, and 2,2,4-trimethylpentane) accounted for 87% of these total emissions.” and “Local residents have expressed concerns regarding air quality impacts from fine particulate matter and hazardous air pollutants emitted during oil and gas development. However, as described by the National Research Council (2003), “Little research has been done to quantify the effects of air pollution on the North Slope or to determine how local and regional air masses interact. Air pollution monitoring has been limited to priority pollutants from 1986 through 2002 at a few sites. Not enough information is available to provide a quantitative baseline of spatial and temporal trends in air quality over long periods across the North Slope.”

In addition, Chapter 4 of the IAP/EIS states “In addition to these criteria pollutants, certain hazardous air pollutants (HAP) may also be emitted. Benzene, toluene, ethyl benzene and xylenes are common HAP associated with volatilization of oil and gas resources, as is formaldehyde from compressor engines. Depending on conditions, hydrogen sulfide may also be found in oil, however an accurate determination of specific HAP quantities and potential impacts is not feasible at this stage, given that particular site-specific development activities and pollution controls are not yet able to be predicted.”

The BLM continues to maintain that there are too many uncertainties until a specific proposal for development is presented to do more detailed analysis and that the analysis provided in the IAP/EIS is appropriate.

[Response to 1.019]

The “PSD II Increments” and “at least 1 year of baseline monitoring” described above are addressed by the ADEC through the Clean Air Act New Source Review Process, subject to EPA oversight. In addition, all BLM activities (either directly or through use authorizations) must comply with all applicable local, state, tribal and federal air quality laws, regulations, standards, and implementation plans. Therefore, any future activity would be required to obtain necessary air pollutant emission permits from the ADEC.

NEPA requires federal agencies to analyze and disclose potential environmental impacts before a specific activity is allowed to proceed. The IAP/EIS describes both the current air quality conditions and regulations in Chapter 3 – Affected Environment, and indicated, to the extent possible, potential future air quality impacts due to additional leasing in Chapter 4 – Environmental Consequences. This included a comparison to site-specific conditions, as well as predicted future impacts, to existing and proposed development on the North Slope. As clearly stated in the Draft EIS, “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 1.020]

Table 4.3A of the Draft EIS clearly states “Combustion sources primarily emit PM_{2.5} while land disturbance primarily emits PM₁₀.” However, “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.” An accurate determination of specific HAP quantities and potential impacts is not feasible at this stage, given that particular site-specific development activities and pollution controls are not yet able to be predicted.

[Response to 1.021]

The “PSD Increments” described above are addressed by the ADEC through the Clean Air Act New Source Review Process, subject to EPA oversight. In addition, all BLM activities (either directly or through use authorizations) must comply with all applicable local, state, tribal and federal air quality laws, regulations, standards, and implementation plans. Because of this, the BLM concludes that AAQS and PSD increments will probably not be exceeded. As clearly stated in the Draft EIS, “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 1.022]

The “PSD II Increments” described above are addressed by the ADEC through the Clean Air Act New Source Review Process, subject to EPA oversight. In addition, all BLM activities (either directly or through use authorizations) must comply with all applicable local, state, tribal and federal air quality laws, regulations, standards, and implementation plans. Because of this, the BLM concludes that AAQS and PSD increments will probably not be exceeded. As clearly stated in the Draft EIS, “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 1.023]

The IAP/EIS states “Combustion sources primarily emit PM_{2.5} while land disturbance primarily emits PM₁₀.” The IAP/EIS also states “In addition to these criteria pollutants, certain hazardous air pollutants (HAP) may also be emitted. Benzene, toluene, ethyl benzene and xylenes are common HAP associated with volatilization of oil and gas resources, as is formaldehyde from compressor engines. Depending on conditions, hydrogen sulfide may also be found in oil, however an accurate determination of specific HAP quantities and potential impacts is not feasible at this stage, given that particular site-specific development activities and pollution

controls are not yet able to be predicted.” It is unlikely significant emissions of other HAP (such as dioxins) would occur from oil and gas development. However, “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 1.024]

The Draft EIS actually stated “Ambient air quality on the North Slope of Alaska is generally good as a result of few pollution sources and good dispersion created by frequent winds, and neutral to unstable conditions in the lower atmosphere ...” The BLM recognizes the lack of site-specific air quality monitoring in the planning area, and looks forward to working with the ADEC and other interested agencies to address expanded air quality monitoring and regional planning on a cooperative basis. However, BLM’s obligations concerning future oil and gas development under NEPA require that “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 1.025]

Final EIS (Section 4.7.7.1.2) has been modified to state “Emissions on the North Slope as a whole are expected to decrease as the result of an overall downward trend in oil production and advances in technologies which decrease emissions; therefore, air quality impacts from local existing industrial sources is likely to be reduced.” Clearly, air pollutant emissions are likely to increase in areas where development has not already occurred, but “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 1.026]

The Potential New Mitigation Measures (Section 4.3.19.5) described in the Draft EIS do not in any way change existing or future requirements under the Clean Air Act. Federal Clean Air Act requirements are implemented by the ADEC, subject to EPA oversight. In addition, all BLM activities (either directly or through use authorizations) must comply with all applicable local, state, tribal and federal air quality laws, regulations, standards, and implementation plans.

[Response to 1.027]

The IAP/EIS presents the best available information on air quality. As part of the IAP/EIS, the BLM is contemplating a mitigation measure that would include additional air quality monitoring. (See Potential Mitigation Measure #5 in the Public Health impact discussions in Chapter 4.) The plan does not rule out air pollution from North Slope industrial activities. It states in its discussion of air quality in Chapter 3 that, “trace amounts of air pollutants, including metals, have been detected in vegetation at very low levels, and arctic haze is periodically observed on the North Slope, due primarily to air pollutant emissions originating in northern Europe and Asia (and to a lesser extent, northern Alaska).” Given the preponderance of air pollutant emissions originating in Europe and Asia compared to those originating in northern Alaska, BLM maintains that pollutants from Europe and Asia are primarily responsible for Arctic haze on the North Slope.

[Response to 1.028]

BLM looks forward to working with the ADEC and other interested agencies to address expanded air quality monitoring and regional planning on a cooperative basis. However, Federal Clean Air Act requirements (including background monitoring through the New Source Review permitting process) are implemented by the ADEC, subject to EPA oversight. In addition, all BLM activities (either directly or through use authorizations) must comply with all applicable local, state, tribal and federal air quality laws, regulations, standards, and implementation plans.

[Response to 1.029]

BLM looks forward to working with the ADEC and other interested agencies to address expanded air quality monitoring and regional planning on a cooperative basis. Also, a potential mitigation measure relevant to this concern is presented in Public Health subsections of Chapter 4.

[Response to 1.030]

As described in the Draft EIS, “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 1.031]

BLM looks forward to working with the ADEC and other interested agencies to address expanded air quality monitoring and regional planning on a cooperative basis.

[Response to 1.032]

Without specific development proposals, the BLM cannot evaluate the need for, or potential effectiveness of, the proposed “mitigation” measures.

[Response to 1.033]

BLM looks forward to working with the ADEC and other interested agencies to address expanded air quality monitoring and regional planning on a cooperative basis. Also, a potential mitigation measure relevant to this concern is presented in Public Health subsections of Chapter 4.

[Response to 1.034]

The requirement mentioned is a "Response Planning Standard" requirement written into State of Alaska regulation. The Oil Discharge Prevention and Contingency Plan (C-Plan) must demonstrate that the plan-holder can respond to an oil discharge of that volume. The requirement sets the level of protection (planning for available responders, resources and tactics) such that the given amount of oil can be contained and cleaned up in a specified time frame. That C-Plan is required by State of Alaska Statute before development can take place. It does not set a standard for a level of impact that must be analyzed prior to leasing. Nor does it reflect a probable large spill scenario based on past North Slope history.

[Response to 1.035]

A new section has been added to the analysis of each alternative in Chapter 4 addressing these particular questions.

[Response to 1.036]

Review of engineering design will be considered at the project design stage of development consistent with BLM's obligation to prevent unnecessary and undue degradation.

[Response to 1.037]

The effect of warmer temperatures will not change the overall soils series. A decrease in depth to the top of the permafrost and some subsidence is possible but this should be identified by surveys done prior to development.

[Response to 1.038]

The IAP/EIS has not identified any impacts that would justify consideration of a mitigation measure regarding well design such as suggested in this comment.

[Response to 1.039]

Stipulations 60 and 61 for Alternative A and ROPs H-1 and H-2 for the other alternatives as well as potential mitigation measures presented in the Public Health sections in Chapter 4 address these concerns for mitigating impacts.

[Response to 1.040]

The IAP/EIS makes no suggestion that the uses described are prohibited.

[Response to 1.041]

The text has been modified to acknowledge the work being done by the NSB to inventory structures.

[Response to 1.042]

The BLM does not anticipate that cabins and campsites would be removed, particularly with subsistence consultation as would be required under Stipulations 60 and 61 in Alternative A and under ROPs H-1 and H-2 in the other alternatives. Consequently, it is not appropriate to propose potential mitigation measures.

[Response to 1.043]

All references to the North Slope Borough Coastal Management Program enforceable policies have been removed.

[Response to 1.044]

The 4th paragraph in Chapter 1's subsection entitled "Consistency with federal, state, and local laws and regulations acknowledges the reference of the CZMA to management and activities within the planning area. The Alaska Coastal Management Program is discussed in Chapter 3 in the Coastal Zone Management subsection.

[Response to 1.045]

The BLM disagrees. The discussion of cases for consistency reviews outside the coastal zone is located in 3.1.5.3.

[Response to 1.046]

The text has been modified.

[Response to 1.047]

The coastal zone boundaries are discussed in Chapter 3 in the Alaska Coastal Management Program subsection.

All references to the North Slope Borough enforceable policies have been removed. Language has been added in section 4.3.15 stating that the NSB CMP revision is under development.

[Response to 1.048]

The BLM believes the cited language is accurate and an appropriate characterization.

[Response to 1.049]

The text has been modified to reference "enforceable policies."

[Response to 1.050]

The text has been modified.

[Response to 1.051]

Plan has been changed to Program.

[Response to 1.052]

The BLM is unable to determine the correction that has been requested.

[Response to 1.053]

The BLM agrees and has removed the discussion.

[Response to 1.054]

The references to NSB policies have been removed.

[Response to 1.055]

References to NSB CMP policies have been removed.

[Response to 1.056]

The text has been modified: Activities would be required to be consistent with the enforceable policies of the ACMP to the maximum extent practicable.

[Response to 1.057]

This section has been modified.

[Response to 1.058]

The BLM agrees with the removal of "upland". Oil spills and potential effects are discussed in the Basic Assumptions for the Environmental Consequences Assessment subsection entitled Oil Spills.

[Response to 1.059]

Oil Field abandonment and rehabilitation is addressed in section 4.2.1.2, subsection II (E) - Abandonment, and Stipulation G-1.

[Response to 1.060]

The text has been modified.

[Response to 1.061]

The text has been modified.

[Response to 1.062]

The text has been modified.

[Response to 1.063]

The statement "federal activities occurring outside the designated area need to be consistent with the Subsistence standard" is only true if such lands are non-federal.

[Response to 1.064]

The BLM agrees with the removal of "upland". Oil spills and potential effects are discussed in the Basic Assumptions for the Environmental Consequences Assessment subsection entitled Oil Spills.

[Response to 1.065]

Oil Field abandonment and rehabilitation is addressed in section 4.2.1.2, subsection II(E) - Abandonment, and Stipulation G-1.

[Response to 1.066]

The text has been modified.

[Response to 1.067]

The text has been modified.

[Response to 1.068]

The text has been modified.

[Response to 1.069]

The BLM agrees. The text has been modified.

[Response to 1.070]

The statement "federal activities occurring outside the designated area need to be consistent with the Subsistence standard" is only true if such lands are non-federal.

[Response to 1.071]

The BLM agrees with the removal of "upland." Oil spills and potential effects are discussed in the Basic Assumptions for the Environmental Consequences Assessment subsection entitled Oil Spills.

[Response to 1.072]

Oil Field abandonment and rehabilitation is addressed in section 4.2.1.2, subsection II(E) - Abandonment, and in Stipulation G-1.

[Response to 1.073]

The text has been modified..

[Response to 1.074]

The coastal zone management discussion of cumulative subsistence impacts is located in 4.7.7.15.1 and .2.

[Response to 1.075]

The BLM is unaware of any conflicts with the standards at 11 AAC 112.900. Oil Field abandonment and rehabilitation is addressed in section 4.2.1.2, subsection II(E) - Abandonment, and Stipulation G-1.

[Response to 1.076]

The BLM acknowledges the known range of the TLH during all seasons, that some areas at some times are more critical to caribou population health than other areas, and that Alternative D would allow development that may overlap some of those critical areas. The BLM acknowledges the potential for significant impacts and states in the IAP/EIS that caribou productivity could be decreased and possibly to the level of negative population level consequences. The BLM has included several protective measures in Alternative D to reduce the risk of this outcome.

[Response to 1.077]

The Final IAP/EIS incorporates recent information on sea ice extent and observed and predicted effects on marine mammals.

[Response to 1.078]

The information on the body condition of grey whales became available after the Draft IAP/EIS was sent to the printer. Information on body and apparent health condition is included in the Final IAP/EIS as available.

[Response to 1.079]

The Final IAP/EIS has been edited to make clearer that while the effect of ship, barge, and seismic activity on bowhead whale is relatively well known (displacement), the impacts of the displacement (if any) are not known.

[Response to 1.080]

Thank you. The relevant information from the sources you provide were incorporated into the Final IAP/EIS. However, it should be noted that the statement referred to in the comment regarded mortality of bowhead whales from microbial or viral disease agents.

[Response to 1.081]

Section 3.3.8 has been edited to reflect your comment.

[Response to 1.082]

The term "smaller stream" is used to indicate that some streams are too large for culverts to be appropriate to allow sufficient fish passage. The size of the stream for which bridges would be more appropriate than culverts is a matter for a case-by-case decision.

[Response to 1.083]

A "Potential New Mitigation Measure" was added to Alternative A (Stipulation) and Alternatives B-D (ROP) requiring three years of hydrologic and fish data to be collected prior to designing a road crossing structure. It is stated that this information will be used to determine if a bridge or culvert should be built and if a culvert is appropriate, then this will be used to determine an adequate structural design.

[Response to 1.084]

The report by Dr. Larry Moulton was incorporated as a reference in section 3.3.5.1. Due to the very recent release of this report (October 2007), relevant maps were not available during the preparation of the Draft NE NPR-A Supplemental IAP/EIS and will not be added. Referencing this report within the IAP/EIS directs the reader to the location of these maps and data. While the report presents a spatial quantification of potential fish habitat, it does not alter the analysis of relative potential impacts under the various alternatives. The importance of maintaining natural flow patterns in fish-bearing drainages is addressed in Chapter IV sections regarding fish that are titled "Effects from Pad, Road, and Pipeline Construction."

[Response to 1.085]

ROP A-3 has been edited to change the referenced "may" to "shall."

[Response to 1.086]

ROP A-6 has been revised as suggested. Because Alternative A's provisions represent the existing set of stipulations, it is not subject to change.

[Response to 1.087]

ROP A-7 has been revised as suggested. Because Alternative A's provisions represent the existing set of stipulations, it is not subject to change.

[Response to 1.088]

ROPs B-1 and B-2 are not in conflict. B-1 addresses water withdrawals from rivers and stream, while B-2 addresses water withdrawals from lakes and ponds.

[Response to 1.089]

A discussion of the rationale for summer tundra travel appears in Chapter 4 in the subsection entitled "Basic Assumptions for the Environmental Consequences Assessment" under the heading "Summer Tundra Travel." The characterization of how summer tundra travel would be addressed under Alternative A has been revised in Table 2-2 in Chapter 2.

COMMUNICATION NUMBER 2

North Slope Borough

Mayor Edward Itta, speaker at Barrow Public Meeting September 24, 2007

Okay. Good evening. I'm Edward Itta, Mayor, North Slope Borough. I welcome all of you, good to have you here. My comments are going to be brief this evening. And I appreciate this opportunity to comment on the supplemental plan for Northeast NPRA and as you note there are people besides me who wish to comment so I'll make my comments brief and make sure that our fellow residents have time to make their comments.

Again, I want to thank BLM for holding this and all the North Slope village meetings during this comment period. I -- that means a lot to us, so thank you for accommodating that. We in the North Slope Borough had requested this so that our people would have enough time to review the document beforehand, while also leaving some time after the hearing so we can include our written comments of some of the important points that will come up during this testimony this evening.

As you know, our culture has a strong moral tradition and it's important in preparing our written comments from the Borough that we hear the comments of our residents up here.

[2.001] With that in mind, I have a letter to give you this evening requesting an extension of the comment period to November 30th instead of October 23 as it is currently scheduled. The letter is addressed to Mr. Tom Lonnie, the Alaska State Director, Bureau of Land Management and it's basically a request for an extension of the comment period on this document. And I believe this request is justified because the document was released later than originally anticipated and the review period now lands right in the middle of our fall whaling preparations for our village as well as the ongoing caribou harvest that are so crucial to our way of life, and other critical seasonal subsistence activities.

The Borough participated as a cooperating agency in this phase of the process but I want to make it clear for the record, I want to make it clear to our North Slope residents that this does not bind us in any way to any position regarding Northeast NPRA, I want that really clear. I saw in the official documents that were put out very clearly it states that the North Slope Borough is a cooperating agency so I didn't want any confusion about that. Our cooperating agency agreement includes a provision that the North Slope Borough maintains its independent position and its ability to disagree with BLM whenever we feel that it is called for or required.

In fact, our participation in helping to prepare this supplement has not changed the position we expressed in earlier comments and testimony on the draft and the final environmental impact statements. While the Borough continues to strongly support environmentally and culturally sound development onshore, we simply do not believe BLM has demonstrated that any areas of Northeast NPRA beyond those opened in 1998 can be safely developed. The areas now closed are too critical to sensitive caribou, waterfowl, and other wildlife populations that are highly valued by our subsistence communities.

As I said in my comments at our recent oil and gas forum last week, some areas must be held back from development simply because their subsistence value outweighs their oil and gas potential. Leasing in these areas is too risky and the potential cost to our residents is too great.

[2.002] Many of BLM's proposed mitigation measures in this supplement are greatly improved and I applaud you for that, however, it is still highly questionable whether all these measures taken together can provide adequate protection for the valuable subsistence resources and uses.

I'm also pleased to see that the draft includes both the human health impact analysis and health related mitigation measures submitted by the Borough. We appreciate that. We also understand that inclusion of these issues is unprecedented and has raised concerns among some parties, especially industry. I want to stress that we strongly believe that this analysis has always been required and that industry and others should not be fearful of its inclusion into this EIS. We want to continue to work with BLM, industry and others on this analysis with the goal of mitigating the health impacts of development on the North Slope's human residents.

During the preparation of the supplement there has been some discussion about phased leasing in areas that could be newly opened. We cannot support phasing without knowing exactly what it means. The phrase is troubling in that it implies that inevitably there's going to be leasing.

[2.003] If despite our objections that no new areas should be opened, BLM decides to offer limited new areas in order to assess the effectiveness of mitigation before larger scale leasing, then there must be adequate time allowed for monitoring.

One problem with this approach would be in deciding what areas to open first. If less critical areas are opened first, a low level of impact there should not be seen as proof that mitigation can work in the most critical areas. If the most critical areas are opened first and serious impacts occur, then it is too late to prevent the harm. And that is one reason for our opposition to this approach.

Thank you again for this opportunity to comment and I hope you will carefully consider the recommendations and comments of all those who are going to speak before you this evening and thank you very much again and I -- that's my -- ends my testimony and I'm handing a letter dated today to Tom Lonnie, to Lon, and I'm off the record now, I guess.

By the way, just for your information, I got your flyer today in the post office, this afternoon so on top of everything else moaning and groaning about the impacts of bypass mail so maybe you need to send them priority mail next time, okay?

[Response to 2.001]

The BLM considered the request for extending the comment period to 90 days, twice the period required under NEPA, and extended the comment period to 74 days.

[Response to 2.002]

The BLM considers protection of subsistence resources and uses an important part of its management and considers the performance-based provisions of its stipulations and ROPs as a means to adapt mitigations to best meet any potential short-comings.

[Response to 2.003]

The Preferred Alternative's deferral of leasing in lands currently unavailable for leasing is consistent with this suggestion.

COMMUNICATION NUMBER 5
From State of Alaska
Don Perrin, Project Coordinator

Jim Ducker November 6, 2007

Northeast NPR-A Planning Team Leader
Bureau of Land Management
222 West 7th Avenue, No. 13
Anchorage, AK 99513-7599

RE: Northeast National Petroleum Reserve-Alaska

DRAFT Supplemental Amended Integrated Activity Plan/Environmental Impact Statement

The State of Alaska has reviewed the DRAFT Supplemental Integrated Activity Plan/Environmental Impact Statement (draft Supplement) produced by the U.S. Department of the Interior Bureau of Land Management (BLM) in cooperation with the North Slope Borough for the Northeast National Petroleum Reserve-Alaska. The comments in this letter reflect the consolidated views of the State's resource agencies.

The State supports the BLM in its efforts to complete the Integrated Activity Plan for the Northeast NPR-A planning area. As you know, Alaska's economy is largely dependent on natural resource development. The State is committed to increasing the exploration and development of our oil and gas resources while protecting the environment and surface resources to ensure the continuation of traditional subsistence practices. All Alaskans have a vested interest in the success of an NPR-A leasing program. We appreciate the hard work and dedication of the BLM in developing this draft Supplement.

The draft Supplement analyzes four alternatives regarding land use activities within the Northeast NPR-A. These alternatives are essentially unchanged from those analyzed in the Northeast NPR-A Final Amended IAP/EIS issued in January 2005. Additional discussions regarding cumulative impacts, commercial gas development, potential polar bear listing, global climate change, and public health are presented in the document. No preferred alternative has been selected by the BLM in this document.

Because there is no significant change in the alternatives presented, we continue to recommend the BLM adopt the conditions provided in the State's August 23, 2004 comments on the Amended IAP/EIS for the Northeast Planning area. There are however, two new issues presented in the draft Supplement that are of primary concern to the State. These are the discussions regarding the proposed U.S. Fish & Wildlife Service (USFWS) listing of polar bears as threatened under the Endangered Species Act (ESA) and the new public health impact analysis, potential new public health mitigation measures, and examples of public health mitigation strategies.

With regard to polar bears, the draft supplement concludes that Required Operating Procedures and Stipulations, combined with low density denning bears in the planning area make it unlikely that any of the alternatives would have a significant effect on polar bears. The draft supplement also indicates the BLM will prepare a new biological assessment required under Section 7 of the ESA. Please note the State opposes listing polar bears as threatened under the ESA because the State does not believe the USFWS used the best available science and commercial information in making its proposed determination. The State stands by its

conclusion that polar bears are unthreatened by human activity and that listing polar bears as threatened will damage existing successful conservation programs without offering any positive benefit. As previously stated by the Department of Interior, there does not appear to be a connection between the loss of critical habitat and localized uses on the North Slope, such as oil and gas development and subsistence activity.

With regard to the new public health impact analysis, the State is currently evaluating issues related to health impact assessment, including the extent to which health impact analysis should be included in the draft Supplement, the basis of the health-related data from which to derive conclusions, and the breadth of the new potential public health mitigation measures. The state has developed initial comments, based upon the preliminary information in the draft Supplement, which are presented below. As more concrete information about proposed health impact-related mitigation measures are released by BLM, the state can comment more specifically and comprehensively. Therefore, we are providing these initial comments in response to the information currently contained in the draft Supplement, and will provide subsequent updates to the BLM and other federal agencies when our evaluation is complete.

TECHNICAL COMMENTS

Department of Natural Resources Office of Habitat Management & Permitting with Assistance from the Department of Fish & Game

Cumulative Effects

[5.001] We have some reservation regarding the conclusions and predictions associated with climate change given the uncertainty associated with climate modeling. We suggest the section include acknowledgement of uncertainty associated with climate modeling and the wide variability in climate due to natural variation.

[5.002] The cumulative effects analysis could be improved by offering more detailed comparisons of cumulative effects among the alternatives. The compartmentalized format does not integrate relevant variables that act concurrently on a particular resource, and in turn describe how affected resources could subsequently influence other resources. Total acreage was the only quantitative information provided. Spatial analysis should be provided to illustrate the percentage of a given area that may be impacted by oil development and how habitat could potentially be fragmented. Most importantly, the heterogeneity of important habitat components must be considered at different scales across the landscape.

[5.003] For example, information on caribou behavior in response to exploration and development activities should be directly applied to alteration of available habitat due to climate change. This is crucial to understand if specific areas that cow caribou and calves need to access in the northern Teshekpuk Lake Caribou Herd area (TLCHA) continually change due to the combination of earlier spring melt (facilitating early plant emergence) and development. Less than one percent of land area within each lease tract, described in Alternative D and designated for development (not including pipelines or existing pads) may appear negligible, but may be important given the spatial metrics of the dry uplands, critical for caribou, within each tract and across the entire TLCHA. Under an Alternative D development scenario, multiple drill sites and other infrastructure within the lease tracts may be situated on parcels of dry land that could result in significant impacts to calving and movement of caribou. Maternal caribou have been observed to be displaced from road activity by no less than 1.4 to 2.4 miles. However, the concern is not just with exploration or development in relation to important habitat components, but knowing the threshold (i.e., how much) of a particular activity or development

for a given area that will begin to affect populations. The cumulative effects analysis should address whether the "limited" development will effectively impact the availability of habitat.

[5.004] The cumulative effects section does not describe the past, present, and potential future impacts on subsistence use. It is unclear whether the North Slope Borough or other regional organizations were included in the potential impacts analysis. As the Northeast planning area experiences growth from current and future development, areas used for subsistence may continue to be effectively eliminated from subsistence use.

[5.005] Updated Muskoxen Information and Mitigation

Groups of muskoxen are selecting coastal habitat in Northeast NPRA planning area. Map 3-26 should update "best habitat" for muskoxen by extending the range along Fish/Judy Creeks and westward to include the area north of Teshekpuk Lake - a group of muskoxen moved into the area north of the lake during the summer of 2007. Additional ROP's, similar to those in K-5 for caribou encounters, emphasizing mitigation of disturbance to muskoxen during winter exploration activities in addition to all activities in all seasons where muskoxen are encountered should be adopted. Muskoxen are particularly vulnerable to winter exploration activities because of their strong tendency to minimize movement during winter months for energy conservation.

New Stipulations

We support the inclusion of a potential new mitigation measure to prohibit sand or gravel removal from cliffs in the Colville River Special Area to enhance existing protections for raptor nest sites. We also support the addition of a potential new mitigation measure to require compliance with the most up-to-date suggested practices for protection of raptors on powerlines.

[5.006] Study Requirements for Geese and Brant

The stipulation requirement for conducting studies on the effects of disturbance on molting brant and geese prior to development is inconsistent, unclear within this Draft Supplement, and applies only to alternative D. The description of the preconstruction study requirement appears to be complete on Map 2-5; however, Lease Stipulation K-4(h) (p 2-78) only describes a monitoring study to be conducted concurrent with construction and production activities. Stipulation K-11 (p 2-91) is vague and only refers to a study requirement for tracts F and G. These discrepancies need to be rectified to include both preconstruction and post construction studies for the entire area for all alternatives.

[5.007] The ecological studies currently funded by BLM that examine the dynamics of habitats and goose use in the Goose Molting Area and determine seasonal movement patterns of North Slope geese during summer are unlikely to provide adequate information that will be applicable to assessing the proposed leasing and development alternatives or to management decisions. Thus, we recommend incorporating a clear, concise, and complete description of cooperative studies focused on disturbance to molting geese/brant before, and monitoring during, oil and gas development. Study goals should emphasize the behavioral and life history sensitivity of molting geese/brant in response to both surface and aircraft activity. Also, the studies should demonstrate how the best available technology (BAT) for development will not significantly impact molting geese/brant.

We recommend the Final Supplement include descriptions of any new technologies that will avoid or reduce summer disturbances to wildlife.

[5.008] Consistency Between Sections of the Document

The document needs to be reviewed for consistency between sections within and among alternatives before the final Supplement is completed to allow viable comparisons of potential impacts among alternatives. For example, Section 4.4.10-b.2, (Alternative B, T&E Species), Seismic, notes that seismic activities on Teshekpuk Lake would be conducted on- ice - if at all. However, Section 4.4.8.2 (Alternative B, Birds) discusses the potential impacts to birds from the use of airguns for boat-based seismic on Teshekpuk Lake in summer.

[5.009] References

There are numerous instances where references are cited in the text yet there is no citation in the bibliography. The bibliography should be updated to ensure all citations in the text are included in the bibliography.

Department of Natural Resources Division of Mining, Land, and Water

[5.010] Water Use

Second Paragraph of 3.2.9.1.3 states:

Generally, DNR permits water withdrawals from lakes 7 feet deep or deeper to 15% of the estimated free-water volume below an assumed ice thickness of 7 feet. DNR may also permit up to 30% of the under ice water to be removed from lakes deeper than 5 feet, if only resistant fish species (i.e. ninespine stickleback and Alaska blackfish) are present, since they can survive lower dissolved oxygen levels.

Comment: This statement needs to be modified to read:

Generally, DNR permits water withdrawals from lakes 7 feet deep or deeper to 15% of the estimated free-water volume below an assumed ice thickness of 7 feet that contain species sensitive fish (i.e. fish species other than ninespine stickleback or Alaska blackfish). DNR permits up to 30% of the under ice water to be removed from lakes deeper than 5 feet, if only resistant fish species (i.e. ninespine stickleback and/or Alaska blackfish) are present, since they can survive lower dissolved oxygen levels. For non-fish bearing lakes, regardless of depth, DNR may permit up to 20% of the total lake volume as either water and/or ice aggregate equivalent. An exception to the 20% water withdrawal volume for non-fish bearing lakes may be granted if the permittee agrees to conduct a study to document lake recharge or to develop a predictive methodology to determine if a particular lake has adequate drainage area and recharge capabilities to support sustained withdrawal beyond current recommended levels.

Alaska Department of Environmental Conservation

The study area in question is located to the west of a number of North Slope oil production facilities that operate under permits issued through the Department of Environmental Conservation. Below are comments from the Air Quality Division and from the Spill Prevention and Response Division.

Air Quality Division Comments

The Alaska Department of Environmental Conservation's Division of Air Quality has concerns about North Slope air quality, with specific concerns about existing air quality and subsequent

environmental impact on the NPR-A. Prior to the development of present oil operations on the North Slope, the only anthropogenic sources of pollution were from long range transport from northern Europe and Asia. Since that time, manmade air pollution (SO_x, H₂S, NO_x, CO, CO₂, particulates and air toxics) have been emitted by North Slope oil development facilities. With the predominant wind flow on the North Slope from the east to east-northeast, a majority of those emissions have been transported to the west, potentially impacting NPR-A. Transport and deposition of pollution downstream of the North Slope facilities may be having a noticeable effect on the environment of the NPR-A. Currently no data has been collected to document if the substantial amount of pollution emitted on the North Slope, although not in violation of air standards, may be having a significant cumulative effect on this area. Documenting the baseline air quality conditions will provide the means to track impacts to the NPR-A from outside sources as well as future development inside the NPR-A. Because of the sensitive nature of the environment of the NPR-A, increased concerns about the impact of global warming and the political focus on drilling in ANWR and the NPR-A, the Department believes it is critical that this supplemental EIS process evaluate the existing level of air quality impacts.

[5.011] In BLM's Draft Supplement, the agency has identified several concerns about air quality and potential environmental impact, but stopped short of identifying the need for investigative work to identify existing level of impact. This seems counter intuitive for an agency to determine that a need exists, but not identify a way to satisfy the need.

For example, in Chapter 2, Table 2-3, page 2-94: Effects on Air Quality, BLM states:

"Cumulative Effects: The cumulative effects of all projects affecting the North Slope of Alaska in the past have caused minor deterioration in air quality, well within legal limits. Improvements in air pollution control technology would help to reduce emissions from historic levels, which may be offset somewhat by increasing production. Regional air pollutant emissions generated would remain near current levels; approximately 30 percent less than emission levels in the late 1980s. Arctic haze will continue to be of concern on the North Slope, due primarily to air pollutant emissions originating in northern Europe and Asia (and to a lesser extent, northern Alaska). In the future, each proposed individual facility will be required to disclose its potential air quality impacts thorough site-specific NEPA analyses, and demonstrate its continued compliance with applicable local, state, tribal and federal air quality requirements. As facilities are shut down, they would no longer contribute to North Slope air emissions. Particulate matter emissions would also be reduced at sites that are re-vegetated."

and in Chapter 3, page 3-9:

"Local residents have expressed concerns regarding air quality impacts from fine particulate matter and hazardous air pollutants emitted during oil and gas development. However, as described by the National Research Council (2003), "Little research has been done to quantify the effects of air pollution on the North Slope or to determine how local and regional air masses interact. Air pollution monitoring has been limited to priority pollutants from 1986 through 2002 at a few sites. Not enough information is available to provide a quantitative baseline of spatial and temporal trends in air quality over long periods across the North Slope."

On the subject of health, the BLM stated in Chapter 3, page 3-188:

"Chronic Pulmonary Disease: Chronic pulmonary disease mortality rates in Alaska Natives have climbed 192% since 1979. North Slope residents have the highest mortality in the State from chronic lung diseases, at nearly 3 times the mortality rate for the U.S. (130/100,000

compared with 45/100,000) (Day et al 2006). The disparate rates of increase and mortality from pulmonary disease are accompanied by high smoking rates, which many public health experts believe to be the primary explanation. Because there are no available data on local fine particulate concentrations, no data on hazardous air pollutants, no data on indoor air quality, and little data on intra-regional variation in other EPA criteria pollutants, it is impossible to estimate the possible contribution of environmental factors."

In these last two findings, the BLM clearly recognized a lack of quantifiable information on current levels of air quality and potential environmental impact in the NPR-A as well as public concerns about air impacts downstream of the oil operations, yet the BLM does not appear to propose any actions to remedy these concerns. **[5.012]** While the Draft Supplement focuses considerable effort on the discussion of human health impacts, it is also important to discuss the potential for environmental damages to wildlife and vegetation from air emissions. As an example, long range transport of nitrogen oxides and pollutant deposition on the ground can lead to acidification, or at a minimum fertilization of the vegetation in the deposition area, which is a nitrogen limited ecosystem.

Air monitoring data is limited on the North Slope, especially in the NPR-A. Existing air monitoring data is collected by the oil companies as part of their air permit requirements and monitoring is not performed at locations several hundred miles downwind of the facilities. While North Slope air quality data has not shown violations of the National Ambient Air Quality Standards (NAAQS) near the facilities, concerns exist about the ability of older air quality models to predict deposition given the North Slope's strong atmospheric stability, complex high latitude atmospheric chemistry, the secondary formation of pollutants trapped in mid to long distance transport, and deposition of air pollutants which can accumulate in the soil and vegetation. It should also be noted that while the North Slope facilities are in compliance with the NAAQS, the North Slope facilities are major emitters of pollution which could potentially have a detrimental effect on the Northeast NPR-A. These air quality standards are concentration based and mainly represent conditions within the local vicinity of the source.

[5.013] The Department believes that setting up an air quality monitoring network would be a valuable tool for establishing an existing baseline for the Northeast NPR-A.

In addition, the Department believes that improved regional scale modeling would be valuable for assessing the impact of long range transport of anthropogenic pollution on the NPR-A. With recent improvements in air models and the development of a meteorological data set for use on the North Slope (one year of Mesoscale Model "MM5" data was specifically produced for the Arctic Regions to generate enough meteorological data for an acceptable run of the new CALPUFF model) an agency can now use CALPUFF to estimate plume movement and deposition over larger distances, such as across the North Slope. While sufficient data is not available to ground truth deposition estimates, this shortcoming could be remedied through the establishment of an air quality monitoring network. To help validate and fine tune the less expensive air modeling, ambient monitoring data is required to validate model results and help check the accuracy and sensitivity of the models. According to EPA, air emissions of nitrogen oxides on the North Slope are greater in magnitude than those of the entire metropolitan area of Washington, D.C., yet, in the past it was impossible to assess the aggregate pollution impacts. The lack of existing data and the potential for future development make it imperative that BLM take steps to establish existing baseline air quality concentrations to guide any future development.

[5.014, 015] Spill Prevention and Response

The following comments speak to the State of Alaska's oil spill prevention regulations as found in 18 AAC 75:

[5.014 cont'd] Northeast NPR-A draft Supplement, Volume 1, Chapter 2, page 2-25. Item #13 states that "Prior to production as required by law, lessees shall develop spill prevention and response contingency plans..." Please note that Alaska law requires that oil discharge prevention and contingency plans (c-plan) be in place prior to any exploration or production activities. Please revise this statement to ensure that potential lessors are aware of these planning requirements.

[5.015 cont'd] Northeast NPR-A draft Supplement, Volume 2, Chapter 4, pages 4-58 through 4-66. In several places in this section, the SEIS references studies that are very out of date. For example, on page 4-58 there are three studies listed as a reference to back up the statement being made on the fate of oil spilled in an arctic environment. Two of the three studies were conducted in 1987. Another example of where the information is out of date is on page 4-66. This section gives information regarding a test oil spill that was conducted in 1970. There have been several test spills in arctic environments since 1970.

Though the spills were not conducted on the North Slope of Alaska, the environments were similar in nature. ADEC participated in an experimental spill in Svalbard, Norway in the winter of 2006. This spill was conducted to test mapping and tracking methods as well as in situ burning in ice. Though the 1970 spill was to a tundra pond, ADEC feels that because of the region's sensitive lakes and close proximity to the coast, the 2006 Svalbard experimental spill should be also be referenced. Other test spills should be researched and referenced as well. The MMS Alaska office either has this information on their website or should be able to provide this information. It should also be noted that before exploration or production activities are performed, we would require that an operator identify environmentally sensitive areas (ESA) and protection of those areas in accordance with the requirements of 18 AAC 75.425(e)(3)(J).

Conclusion

As noted in the federal register notice, comments were specifically encouraged to "identify measures that could reduce impacts to resources or uses that could be impacted by oil and gas activities." The Air Quality Division comments note that the establishment of an air quality monitoring network would be a valuable and necessary tool for collecting baseline data to identify the air quality impacts of development in the NPR-A, so that the effects from existing and future developments can be tracked and action taken if necessary. Baseline data and solid air quality modeling will be necessary before any measures can be identified to reduce potential air quality impacts. Although monitoring data exists for the emissions from the existing North Slope oil and gas facilities, we do not know what the impacts to the NPR-A would be, several hundred miles from the sources, because there is no baseline data. The Department of Environmental Conservation, Air Quality Division would be available to assist with the implementation of an air quality monitoring network, but does not have the resources to take this project on by itself.

The Spill Prevention and Response Division comments identify updated resource information that should be considered in order to understand the impacts of oil and gas activities in the Northeast NPR-A. The Minerals Management Service has done a great deal of research on oil spill discharge response capability in the Arctic which could be applicable in this area and should be reflected in the final Supplement.

Health Impact Assessment - State of Alaska Initial Findings

The draft Supplement has added new information regarding the state of, and the potential impacts to, public health. In addition, the draft Supplement provides new potential public health mitigation measures and examples of public health mitigation strategies that are intended as pertinent examples of measures that might be successfully adapted to meet the needs of North Slope communities, in order to mitigate impacts discussed in the draft Supplement.

[5.016, 017] In providing discussion on this topic, the BLM has not utilized the most current methodologies that have been developed and published for performing health impact assessments and mitigation plans for the oil and gas industry. The International Finance Corporation (IFC), a member of the World Bank Group, has published extensive performance standards and guidance notes covering potential community health impacts for industrial projects, including oil and gas development. These "state of the art" performance standards, guidance notes, and impact assessment methodologies are specifically designed for industrial sector development in complex environmental and social conditions, particularly where there are large populations and communities of indigenous peoples. The IFC standards and guidelines are well recognized internationally and have been adopted ("Equator Principles") by the international financial institutions who lend to the private sector for industrial development. Rather than basing its approach on extremely generic World Health Organization approaches, BLM should adopt the IFC methodologies for assessing and mitigating potential community health impacts for industrial projects.

If adopted, the current BLM strategy could cause unnecessary delays in project development, duplication of existing federal and State of Alaska public health efforts with minimal benefits to host communities, and additional excessive costs for project proponents that will not materially enhance the overall health status of any of the potentially affected communities.

Section 1.11 Public Involvement and Key Issues

Pp. 1-12

BLM has identified public health as a key issue of concern. In addition, BLM presents potential new mitigation measures to address potential adverse impacts to public health.

While it certainly is appropriate to identify public health as a significant area of concern, BLM needs to provide substantially more clarification as to (i) methodological approaches for addressing potential public health impacts, (ii) realistic roles and responsibilities for addressing identified potential impacts, and (iii) a rationale for proposing mitigation measures before any project specific health impact assessment has been performed.

[5.016 cont'd] Methodological approaches - BLM cites (Section 4.3.19) World Health Organization (WHO) as a source of health impact assessment (HIA) principles. WHO does provide basic background and theory surrounding HIA, particularly as practiced in the European Community setting. However, the WHO materials (developed and initially released in 1999) provide only the most basic overview of the HIA procedure. The WHO tools and methods are extremely generic and not tailored to specific oil and gas industry concerns. In addition, the WHO materials are largely from a "government" perspective and were not developed as a set of guidance materials for private sector project proponents.

The most current and relevant set of performance standards and guidance notes on social and environmental sustainability are developed and published by the International Finance

Corporation (IFC). The IFC materials present both general performance standards (PS) and industry specific guidelines. IFC general performance standards specifically cover:

PS#1 Management Systems

PS#2 Labor/Working Conditions

PS#3 Pollution Prevention and Abatement

PS#4 Community Health, Safety and Security

PS#5 Land Acquisition and Involuntary Resettlement

PS#6 Biodiversity Conservation and Sustainable Natural Resource Management

PS#7 Indigenous Peoples

PS#7 Cultural Heritage

IFC has specific oil and gas guidelines covering on-shore, off-shore, and LNG facilities. In addition, the IFC Guidance Notes for PS#4, Community Health, were just revised and released in July 2007 and reflect the most current HIA experience with complex private-sector projects. The IFC performance standards have been incorporated into the Equator Principles. The Equator Principles are the environmental and social standards used by international financial institutions for private sector lending related to large industrial development projects in developing countries. Hence, the IFC performance standards, guidance notes, and health impact assessment methodologies are recognized as the current "state of the art" for private sector industrial development projects.

BLM should reference and utilize the IFC materials as a basis for both its health impact assessment methodology and mitigation strategies. The 2005 International Petroleum Industry Environmental Conservation Association (IPIECA) Guidelines are also another appropriate source of HIA guidance. BLM does reference the IPIECA "Guidelines in Appendix G"; however, the specific methodologies and options presented in this industry guidance are not presented or discussed by BLM.

Roles and Responsibilities

Critical aspects of the overall HIA process are understanding who is actually performing the analysis and who will be responsible for mitigation of potential impacts.

In many situations, the HIA is performed by the project proponents and not the responsible supervisory governmental agency. **[5.017 cont'd]** As noted by WHO, "there is no single agreed method for undertaking HIA...." The BLM approach should either reference a more specific set of guidance materials, e.g., IFC, or overtly state that the methods and approaches to the HIA are quite likely to be highly project specific and variable.

As noted in the IFC Community Health PS, "While acknowledging the public authorities' role in promoting the health, safety and security of the public, this Performance Standard addresses the client's responsibility to avoid or minimize the risks and impacts to community health, safety and security that may arise from project activities." In this approach, there is a clear delineation of role and responsibility that is lacking in the BLM supplemental IAP/EIS. Where there is an obvious role for government, the IFC Guidance Notes on PS#4 are quite specific, e.g., "Generally, community health monitoring is considered as a government function that is not

within the technical obligation or expertise of a project." As noted in later sections of these technical comments, BLM has adopted the reverse position and is stipulating a massive, 3-year baseline data collection exercise that will be both extremely costly and largely duplicative of existing federal and state monitoring efforts in the North Slope Borough (NSB). Further comments regarding community health monitoring will be provided in subsequent sections of this analysis.

Mitigation Measures

[5.018] Two key characteristics define HIA: (1) predicting the consequences of different project-related options and (2) influencing and assisting decision makers. The development of mitigation measures follows the HIA and should not precede it. Instead, BLM presents a set of highly theoretical and general mitigation plans and potential actions throughout the supplemental IAP/EIS. The general and non-specific nature of the BLM mitigation proposals is not surprising as a project specific HIA has not been performed for the NSB.

The HIA should present potential impacts across time (construction, operations, and decommissioning), location (specific geographical settings or units) and populations (groups that are likely to be impacted, positively or negatively). As presented in the 2007 IFC guidance notes, the impacts are most efficiently considered in the context of specific environmental health areas of concerns. This process analyzes, considers and recommends targeted mitigation measures based on the specified impacts. Recommendations for mitigation measures are then proposed per potential health impact according to the environmental health area. The current BLM proposals lack this type of structured framework and are so non-specific that there is a significant loss of cause and effect.

Mitigation measures are typically considered based on a "but for the project" criterion, i.e., there is a reasonable cause-effect relationship between the potential project activity and a subsequent effect (impact). Hence, mitigation of project-specific impacts is not the same as community development and outreach activities that a project may voluntarily choose to initiate. A given mitigation activity is tied to a specific defined impact and subsequently monitored and evaluated based on objective performance indicators. The mitigation strategy presented in the supplemental IAP/EIS is extremely general and non-specific, e.g., creation of advisory boards with extremely unclear mandates and objectives. These types of efforts are reasonable within a community stakeholder communication program; however, experience indicates that without a clear and structured set of performance indicators to evaluate, the advisory board is unable to fully realize its potential.

Section 3.4.4 Environmental Justice

As presented in Section 3.4.4, human health issues are a significant concern from an environmental justice perspective. In terms of health impacts, it is critical to realize that potential health impacts can be positive or negative, intended or not, single or cumulative. It is certainly true that the range of changes may or may not be evenly distributed across the population; hence, the "equity" of impacts is a significant concern that must be considered by the HIA. In many situations, certain sub-groups, e.g., children, women, the aged, may be disproportionately disadvantaged within a minority and/or low income population. Ironically, for the NSB, the majority of the population is a defined "minority/or potential low income group." Therefore, equity analysis within the HIA that meets the spirit and intent of EO 12898 is likely to be focused on sub-groups within potentially affected populations. The equity analysis will certainly be highly project specific and a function of the geographical location and demographic composition of the potentially affected communities under consideration. The City

of Barrow accounts for a significant percentage of all residents in the NSB; however, an analysis of equity issues in the City of Barrow is likely to be significantly different than the same analysis in less densely populated and more distant communities that are not the economic or regional transportation center for the NSB.

Section 3.4.10 Public Health Overview

[5.019, 020, 021] The supplemental IAP/EIS provides a very general and generic health status overview in Section 3.4.10.1. The BLM analysis should more clearly state the limitations of the cited data, specifically:

(i) **[5.019 cont'd]** NSB Inupiat are included within the larger studies of Alaska Natives that are cited. The data presented are not necessarily NSB population specific. The analysis makes the assumption that NSB Native data would be the same or similar to the overall Alaska Native combined population. This assumption may or may not be correct in every situation. As will be illustrated in later sections of these comments, this assumption is frequently incorrect.

(ii) **[5.020 cont'd]** The actual NSB baseline for many of the standard public health outcome indicators, e.g., infant mortality, disease-specific incidences, etc., is largely unknown. Does BLM, or another governmental agency, intend to "establish" the true baseline conditions? This type of exercise is methodologically difficult, costly, and difficult to perform when there are very small communities scattered over an enormous geographical area. For example, infant mortality rates are typically presented using a population denominator of 100,000. The number of births in many of the NSB communities is undoubtedly extremely small; hence, it would take years, if not decades, of follow-up in order to accumulate sufficient data that had any statistical validity. Further complicating the baseline analysis is the observation that approximately half of the overall NSB population is concentrated in the City of Barrow. BLM should consider and objectively demonstrate whether the City of Barrow population and demographic characteristics are fully reflective of the other communities in the NSB.

(iii) **[5.021 cont'd]** Does BLM believe that any potential private project proponents have the technical expertise to perform the type of longitudinal health monitoring necessary to scientifically and credibly establish the "true baseline" for NSB communities? IFC performance standards and guidance notes specifically discuss that complex longitudinal monitoring in communities is well beyond the capability of private sector proponents and is clearly an essential function of government. In order to obtain and maintain household-level health data there are significant confidentiality considerations that are essential. It would be extremely difficult for private sector companies to realistically persuade and assure surveyed households that sensitive health data was held under rigorous confidentiality standards. Much, if not all, of the health data contemplated for collection by BLM is already systematically obtained by a variety of federal and state agencies. It would be inefficient, duplicative, and costly to shift performance of these critical and sensitive tasks to private sector project proponents. In some sections of the BLM analysis, there appears to be some realization of this problem. Unfortunately, BLM seems to argue for a cost shift of existing efforts to the private sector while maintaining control over the existing monitoring effort. Hence, the creation of "Health Advisory Board" and various other means that simply duplicate existing functions.

(iv) BLM presents data derived from public testimony including traditional knowledge sources. This type of stakeholder engagement and information is extremely important. However, formal contemporary demographic information is equally important and can be used to further explore many of the concerns raised by long-term residents and community members.

Section 3.4.10.2 Patterns of Illness

[5.022] Cancer

The data presented in this section are largely, but not exclusively, based on the 1999-2003 Alaska Mortality study authored by Day et al. (2006). The 303/100,000 is an age-adjusted Alaska Native mortality rate for the Barrow Service Region. In the BLM analysis, this rate is compared to an overall U.S. population level of 163/100,000. As illustrated in Table 1, the Barrow Service Region value is more appropriately placed into a realistic context when compared across all of the other Alaska Service Regions. This analysis is illustrated below.

Table 1

Age-Adjusted Alaska Native Cancer Mortality Rates By Service Region

1999-2003

Both Genders Combined

Cause of Death	Anchorage	Barrow	Bristol Bay	Interior	Kotzebue	Mount Edgecumbe	Norton Sound	Yukon-Kuskokwim	Alaska Natives
Cancer	370.2	303.7	285.1	222.4	246.3	277.7	275.6	258.9	245.4

As illustrated in Table 1, the Barrow Service Region rate is high but substantially lower than Anchorage. Furthermore, the Barrow Service Region rate is higher than overall "Alaska Natives," illustrating why the use of overall Alaska Native data may not be an appropriate surrogate for the NSB. As previously noted, the Barrow Service Region data are undoubtedly dominated by the City of Barrow and may obscure the actual rates in other smaller communities.

Community stakeholders have raised issues concerning possible contribution of environmental factors such as contaminants in subsistence resources. This presents an important and complex set of questions. However, as illustrated in Table 1, based on the cancer mortality data, this concern should be (i) greatest in Anchorage and (ii) most concentrated in specific areas that have longstanding industrial development. In addition, recent studies related to breast cancer rates in Native Alaskans have failed to detect a correlation between body burdens of organochlorines (e.g., DDT and PCBs) and female breast cancer rates.

Finally, as noted in the BLM, report, smoking as a significant confounding factor should not be minimized as the rates of chronic obstructive pulmonary disease in the Barrow Service Region are significantly higher than any of the other Service Regions (Table 2).

Table 2

Age-Adjusted Alaska Native Chronic Obstructive Pulmonary Disease Mortality Rates By Service Region

1999-2003

Both Genders Combined

Cause of Death	Anchorage	Barrow	Bristol Bay	Interior	Kotzebue	Mount Edgecumbe	Norton Sound	Yukon-Kuskokwim	Alaska Natives
Chronic Obstructive Pulmonary	123.3	130.0	73.2	60.4	49.8	53.3	70.5	67.4	67.8

[5.023] Psychological and Social Problems

The presented data use general U.S. population data instead of Alaska Native Service Region rates. Table 3, which presents suicide mortality rates, illustrates this problem.

Table 3

Age-Adjusted Alaska Native Suicide Mortality Rates By Service Region
1999-2003
Both Genders Combined

Cause of Death	Anchorage	Barrow	Bristol Bay	Interior	Kotzebue	Mount Edgecumbe	Norton Sound	Yukon-Kuskokwim	Alaska Natives
Suicide	32.8	35.6	-	66.9	88.6	11.6	88.8	44.5	36.3

Suicide mortality rates (both genders combined) in Barrow are slightly lower than Alaska Natives overall and markedly lower than several other service regions.

A similar analysis can be presented for virtually the entire "baseline" data presented in Section 3.4.10.2. Overall, it is obvious that significant baseline data are available and obtained by the relevant state and federal agencies. At issue is how these available data should be analyzed and utilized, not whether there is an absence of information.

3.4.10.3 Determinants of Health

[5.024] While social determinants of health (SDH) are an important consideration for "public health programs seeking to address health disparities," it is very unclear how BLM proposes to use SDH in a health impact assessment. In the 2007 IFC guidance notes and the 2005 IPIECA Guidelines for HIA in the Oil and Gas Industry, SDH (presented as psychosocial) is listed as one of the key "environmental health areas (EHAs)" that should be considered in an HIA. In addition, there are many other specific environmental health areas that should be evaluated; hence, while important, SDH should not be the only focus of the health assessment process.

[5.025] In the IFC guidance notes, the EHAs are compared across a series of typical potential health impact issues. This is the type of structured exercise that should be performed and relied upon and is far more useful and systematic than the general discussion of health determinants presented in section 3.4.10.3.

Section 4.3.19/4.4.19/4.5.19/4.6.19 "Public Health" Alternatives A-D

BLM has proposed a series of "Effects of Disturbances" and Stipulations and Required Operating Procedures (ROPs) across Alternatives A-D. From a public health perspective, the logic and arguments are virtually identical; therefore, only one set of comments across all of these sections is presented.

[5.026] BLM has confused the use of the "logical framework or logframe" technique. Logframe can be used in the HIA as a specific technique within the monitoring and evaluation section of the overall HIA. The logframe methodology is not the "model" or overall strategy which "guides the analysis." An example of a logframe table that can be used within the monitoring and evaluation section of an HIA is presented as Table 4.

The logframe technique is well tested and highly useful and should be applied to the mitigation strategies proposed by BLM. If the logframe approach is systematically applied to the mitigation approaches in the supplemental IAP/EIS, it will clearly illustrate the problems of proposing very general and non-specific "fixes" that are not tied to a specific set of potential project impacts identified in the HIA.

Table 4 Logframe Analysis

Example of Logical Framework for a Project

	Intervention Logic	Objectively verifiable indicators of achievement	Sources and means of verification	Assumptions
Overall objectives	What is the overall broader objective to which the project will contribute?	What are the key indicators related to the overall objective?	What are the sources of information for these indicators?	
Project Purpose	What are the specific objectives which the project shall achieve?	What are the quantitative or qualitative indicators showing whether and to what extent the project's specific objectives are achieved?	What are the sources of information that exist or can be collected? What are the methods required to get this information?	What are the factors and conditions not under the direct control of the project which are necessary to achieve these objectives? What risks have to be considered?
Expected Results	What are the concrete outputs envisaged to achieve the specific objectives? What are the envisaged effects and benefits of the project? What improvements and changes will be produced by the project?	What are the indicators to measure whether and to what extent the project achieves the envisaged results and effects?	What are the sources of information for these indicators?	What external factors and conditions must be realised to obtain the expected outputs and results on schedule?
Activities	What are the key activities to be carried out and in what sequence in order to produce the expected results?	Means: What are the means required to implement these activities, eg personnel, equipment, training, studies, supplies, operational facilities, etc	What are the sources of information about project progress?	What pre-conditions are required before the project starts? What conditions outside of the project's direct control have to be present for the implementation of the planned activities?

[5.027] Section 4.3.19.2

The supplemental IAP/EIS presents a series of "Effects of Disturbances." As previously presented, this concept is better and more systematically captured using the Environmental Health Area (EHA) approach adopted by IFC. All of the "effects" are fully captured by the EHA framework that had been initially developed by the World Bank in 1996 and further amplified by IFC in its 2007 Guidance Notes for the Community Health Performance Standard. The EHAs can be tied to specific issues associated with a proposed project so that there is a clear cause and effect relationship that focuses any proposed mitigation strategies.

Section 4.3.19.3; Effectiveness of Stipulations/Required Operating Procedures (ROPs)

Previous work by the World Bank indicates that almost 50% of the measurable improvements in overall community-level health are obtained by improvements in four key sectors: 1) housing, 2) water/sanitation, 3) access to services, e.g., roads, and 4) information/communication. The World Bank studies were based on vast and extensive experience with poor and marginalized communities in sub-Saharan Africa (SSA). While the NSB environment is certainly not similar to SSA, the reality of poverty, marginalization, and the critical role of gender are not so dissimilar. Large oil/gas development projects can simultaneously have positive, negative, or neutral effects on surrounding communities. As the World Bank data indicates, the largest impacts are likely to be concentrated into the four broad sectors previously listed. These sectors are captured within the EHA framework. The relationship between the type of environmental stipulations proposed by BLM and community level-public health improvement is unknown. This does not mean that the proposed Appendix D, E, and F stipulations are not appropriate but rather the ability to confidently quantify their public health benefits is minimal. For example, as previously noted in an earlier section, the relationship between environmental contamination and cancer, endocrine disruption, lung disease, and neurodevelopmental delay is extremely complex and often very difficult to establish in small communities because of (i) population size, (ii) confounding factors, e.g., smoking, alcohol, dietary changes, etc.), and (iii) the absence of strong exposure-dose response data. Any mitigation measures that minimize exposures are of theoretical benefit; however, the objective health benefits, in terms of changes in cancer or other specific disease rates, are much harder to establish. Therefore, legitimate community expectations must be carefully listened to but carefully managed so that the stipulations are actually tied, in a cause-effect manner, to a specific impact.

Section 4.3.19.5

It is unclear what set of specific potential impacts the proposed "Health Advisory Board" is expected to mitigate. The "appropriate analysis of potential public health impacts of the proposal" is the very point of performing an HIA for each proposed project. Any HIA would undoubtedly be available for public and agency review; therefore, it is unclear what the role and function of the Health Advisory Board would be. **[5.028] Creating a "Board" does not alter or change impacts. If the Health Advisory Board is simply to review and advise, then this activity is better served within a community/stakeholder communication plan as opposed to serving as a technical body.**

A Health Advisory Board is not a Monitoring and Evaluation (M&E) strategy. M&E is a specific set of activities within an HIA. There are numerous M&E models that are available as a function of the type and complexity of potential impacts. In some situations, a formal demographic surveillance system is necessary; however, the strategy must be considered within the context of existing public health surveillance systems that are already operating in the NSB. In many other situations, the existing public health surveillance systems are sufficient and new systems are not required. If correctly performed, the HIA should fully explore the options for appropriate M&E systems based on the projected impacts.

[5.029] M&E systems tend to most efficiently operate when they are based on some type of logframe structure (See Table 4). For example, the "Subsistence" stipulation is best proposed within a logframe analysis so that potential project proponents can better understand how an impact is actually defined. At present, the proposed stipulation often states that "any impact" is the relevant outcome indicator. Experience with biological systems clearly indicates that variation and change should be anticipated and expected regardless of whether a project is present.

An additional system BLM should consider for these types of proposed stipulations is the U.S. EPA Data Quality Objectives (DQO) process. While the DQO process was developed for environmental site investigations, it is perfectly suited for use in impact assessment and is applicable for both social and health M&E systems.

The DQO process is a strategic planning approach that provides a systematic procedure for defining the criteria that a data collection design should satisfy, including when to collect samples, where to collect samples, the tolerable level of decision error for the study, and how many samples to collect, balancing risk and cost in an acceptable manner.

Prospectively, using the DQO process will assure that the type, quantity, and quality of data used in the assessment process will be appropriate for the intended application, resulting in an analysis of impacts that is technically and scientifically sound, transparent and defensible. The DQO process provides a structured way to perform this exercise and would significantly refine and enhance the proposed "Subsistence" stipulation. Finally, the DQO process is an excellent complement to the logframe structure previously discussed.

[5.030] Public Health Monitoring

BLM proposes the development and implementation of a public health monitoring study. As previously discussed, this type of M&E activity is usually performed within the framework of a demographic surveillance system.

Demographic surveillance is a longitudinal process that collects a variety of population and household-level data covering all aspects of a target population. At a minimum, the effort must include two basic operations: 1) a baseline census that defines the study population and records (at minimum) the age and sex of population members; and 2) mechanisms for monitoring births, deaths, and migrations on an ongoing basis. Most systems also include mechanisms to identify members' household/familial relationships and marital status, cause of death, and factors affecting demographic rates (such as individuals' educational, economic, and health status). In general, overall risks/impacts to individual households and populations cannot be monitored unless all components of demographic dynamics are observed.

Unlike the situation that exists in a developing country setting, there are ample resources that are currently performing the standard demographic surveillance activities across the NSB. This assertion is illustrated by the variety of published literature that tracks virtually all of the standard health outcome performance indicators, e.g., morbidity and mortality rates, disease-specific incidence and prevalence, etc. It is unclear if BLM wishes to disaggregate the existing data across the Barrow Service Region or whether it wants to retain the data as a regional aggregate.

If BLM is proposing significant disaggregation, it is unclear how the population sizes will be sufficiently large to provide meaningful data for many standard health outcome indicators, e.g., infant and maternal mortality, etc. If BLM wishes to utilize the existing data system, then it should specify (i) what existing performance indicators will be applied to the potential impacts as previously described, (ii) what new information would be collected above and beyond the current extensive data collection and how it would be applied to potential impacts, (iii) the basis for believing that any private company or consortium has the necessary expertise to perform this effort at a level greater than the existing public health agencies and systems that are already functioning specifically within NSB and Alaska in general and (iv) the basis for believing that a private company or consortium can more effectively collect and manage

sensitive household-level health data than existing governmental agencies already tasked with this activity.

[5.031] Contaminant-related Health Risk/Air Quality Monitoring and Management

Essentially, BLM is asking for both an ecological and human health risk assessment because the collection of these types of "baseline data" are optimally used within the risk assessment framework. BLM should more clearly specify its intent and whether this exercise would be performed under U.S. EPA guidance documents.

Section 4.7 Cumulative Impacts

BLM indicates that "cumulative impacts" for public health will be analyzed; however, there is only a minimal discussion of how this difficult effort should be performed. This is not surprising as there is no specific definition for cumulative impacts in the existing published environmental assessment methodology literature let alone for health impact assessment.

Sections 4.8.19, 4.9.19 and 4.10.19 "Public Health"

All of the topics discussed in these sections are covered in previous comments.

[5.032] Appendix G Mitigation Strategies

As previously noted, presenting examples of "mitigation strategies" before the performance of a project-specific HIA is an unproductive exercise. In addition, the oil/gas examples, e.g., Chad Cameroon and Camisea, were in a low human development index context where there was little or no functioning public health infrastructure. This is not the situation in the NSB. While the remoteness and climate of the NSB are issues, the available databases, technical support, and health systems are vastly different and superior. The development of impact mitigation plans is a complex undertaking and must be project specific and tied to some type of "but for the project" criteria.

This concludes the State's comments on the Draft Supplement. The State remains committed to working with the BLM in the implementation of the Northeast NPR-A Integrated Activity Plan. Please contact me if you have questions regarding these comments.

Sincerely,

Don Perrin

Project Coordinator

Department of Natural Resources
Office of Project Management and Permitting
cc: Tom Irwin, Commissioner, ADNR
Denby Lloyd, Commissioner, ADF&G
Larry Hartig, Commissioner, ADEC
Joe Balash, Office of the Governor
John Katz, Office of the Governor, Washington, D.C.

[Response to 5.001]

The "Climate Change Overview" subsection in the introductory sections to the Cumulative Impacts analysis portion of Chapter 4 emphasizes the uncertainties in climate change projections and modeling.

[Response to 5.002]

For each resource or use, the cumulative impact analysis caused by various actions are summarized in conclusion subsections. Authors describe how impacts to one resource or use could be reflected upon impacts on other resources and uses. Given that the location of oil is unknown, spatial analysis such as is suggested would be highly conjectural and of minimal use analytically.

[Response to 5.003]

The text of the cumulative impacts section for caribou has been revised to reflect the points made here.

[Response to 5.004]

The discussion concerning cumulative impacts to subsistence is found in section 4.7.7.12 Subsistence. The communities of the North Slope Borough are discussed in terms of potential impacts to their respective subsistence use areas. The discussion regarding a reduction in subsistence use areas as a result of activity is located within the section titled Future Effects and Their Accumulation.

[Response to 5.005]

The BLM is aware of one muskox group that has been using habitats near the coast in Northeast NPR-A since 2005, and perhaps since 2001. The text in Chapter 3 has been revised to detail this group's existence. The BLM believes there is no need to introduce additional ROP's at this point to mitigate disturbance of muskox. Should muskox numbers and oil/gas activity levels or locations combine at any time in the future to warrant additional mitigation measures, the BLM has the authority to introduce additional ROP's on a case-by-case basis when permitting any activity.

[Response to 5.006]

There is no inconsistency between the study described on Map 2-5 and Stipulations K-4 and K-11. The former constitutes a commitment by BLM to undertake studies with specific objectives in conjunction with other agencies. The stipulations are requirements of lessees.

[Response to 5.007]

The studies to be conducted by BLM in conjunction with other federal, state, and NSB representatives in the goose molting area prior to authorization of construction under Alternative D (see Map 2-5) and the monitoring requirements associated with Alternative D would be developed in consultation with federal, state, and NSB agencies. Recommendations such as these will be considered in that context. The Supplemental IAP/EIS describes the potential activities to appropriately reflect potential impacts.

[Response to 5.008]

The Final IAP/EIS has been revised to make these two sections consistent.

[Response to 5.009]

An effort has been made to include all references in the bibliography. Where specific sources have been cited as missing, corrective action has been taken.

[Response to 5.010]

The suggested change to paragraph two of 3.2.9.1.3 has been made.

[Response to 5.011]

The Draft EIS stated “Once site-specific projects are submitted for authorization, potential air quality impacts could be reduced by limiting the emission sources (fuel characteristics, engine specifications, etc.), spacing (such as separating concurrent drilling operations to reduce combined impacts), limiting the season and timing of operations (to enhance favorable dispersion conditions), and requiring specific control measures (road watering, low NO_x flares, etc.).” The Draft EIS also stated “Each new exploration or development activity, or production area, would result in an additional air pollutant emissions. However, a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 5.012]

The BLM believes this issue is adequately covered under the discussion of air pollutant effects on vegetation for Alternative A in Chapter 4.

[Response to 5.013]

BLM looks forward to working with the ADEC and other interested agencies to address expanded air quality monitoring and regional planning on a cooperative basis. However, BLM’s obligations concerning future oil and gas development under NEPA require that “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 5.014]

Stipulation 13 is part of Alternative A, the No Action Alternative, and represents the decision made in the 1998 ROD. As such is not subject to change in the presentation in this IAP/EIS. Reference to State requirements of lessees is provided in Chapter 1 and in Appendix B.

[Response to 5.015]

While some information is not recent that does not mean it is incorrect or inapplicable. We have read the three articles on the MMS website concerning the Svalbard tests (Memo_in-situ_burning.pdf, SummaryFieldReport.pdf, and 569AC.pdf) and find no contradictions with what was written in the IAP/EIS, and therefore are making no changes.

[Response to 5.016]

The BLM cites the WHO guidelines only as providing general conceptual guidance for the public health assessment contained in the DEIS. The text has been modified to clarify the BLM’s approach.

The practice of HIA is evolving rapidly in the U.S. and internationally, and BLM believes it would be premature to state that there is a yet a single, universally accepted standard. Instead, the principles of HIA recognize the often complex interaction between project impacts and public health, and provide a general process intended to facilitate a comprehensive and inclusive analysis of potential health impacts within the limitations of existing data, as required by NEPA. The IPIECA document referenced by the DNR in this comment, for example, states that

"the practice of HIA is relatively new and rapidly developing...Therefore, health-specific HIA standards of practice and specific methodologies are less well-established." (IPIECA 2005) The International Association of Impact Assessment's Health Impact Assessment: International Best Practice Principles (IAIA 2007) is another useful resource which describes current international consensus regarding the principles and approach to HIA. Thus, while the IFC Performance Standards represent one approach to assessing health impacts in the context of oil and gas development, BLM does not agree that these are the only standards appropriate to inform the analysis of health impacts in this EIS, particularly given the specific limitations and requirements of NEPA.

Furthermore, the IFC Performance Standards referenced in this comment do not address many salient community health issues. For example, PS #4 discusses issues such as water quality, structural safety of project infrastructure, life and fire safety, traffic safety, transport of hazardous materials, communicable and vector-borne disease, and emergency preparedness. These health areas fail to capture some concerns associated with the proposed action, such as potential impacts on chronic disease, injury rates, nutritional systems, or psychological and social health.

The IFC Guidance Note 4 referenced in the comment, outlines a more inclusive approach, describing on a set of "Environmental Health Areas" in an Annex to the main document, across which project-related effects can be considered. These "EHAs" are somewhat more inclusive, and may prove useful as BLM continues to develop its approach to the public health concerns raised by North Slope communities. The IPIECA document referenced by the DNR in this comment recommends somewhat more applicable categories for accomplishing the public health analysis required in this EIS, including 1) Communicable diseases; 2) Non-communicable diseases; 3) Accidents and Injuries; 4) Malnutrition; 5) Psychological disorders; and 6) Social well-being.

In summary, BLM believes the body of international literature on HIA contains a number of suggested methodologies which can inform the analysis of public health effects under NEPA. BLM can continue to work with stakeholders to refine the approach to health impact analysis.

[Response to 5.017]

See also response to the previous comment. The text has been modified to clarify BLM's approach to health effects analysis in the EIS/IAP.

The IFC Standards referenced in the comment were developed primarily to guide private sector investment and development efforts. It must be recognized that the regulatory environment in the U.S. differs substantially from the private sector and international standards to which the IFC documents refer. For example, under NEPA, BLM, not an industrial proponent or industry, is responsible for evaluating potential impacts and determining appropriate mitigation methods for the environmental consequences of the decision to lease in the planning area. As such, BLM can not rely on the IFC Guidance Notes to allocate responsibility for management decisions. Under FLPMA, BLM has the authority and responsibility to require reasonable measures that address the potential impacts identified in the EIS.

BLM has revised the text of the potential public health mitigation measure 3, "Public Health Monitoring" to clarify that the intent is not to require a "massive, 3-year baseline data collection exercise."

[Response to 5.018]

The comment notes that the development of mitigation measures should not precede the

project-related HIA. As required by NEPA, the Draft IAP/EIS has analyzed the potential impacts of an oil and gas leasing program in the NPR-A, including potential impacts on Public Health. Based on this evaluation, the BLM has presented potential new mitigation measures. The BLM is required to consider reasonable mitigation measures in its NEPA documents when they are proposed and to consider in an oil and gas leasing EIS all aspects of oil and gas development, albeit in a somewhat general way given that the location of developable oil and gas is unknown as is the means by which industry may propose to develop it. In this context, the mitigation measures were developed, as the comment suggests is appropriate, “based on a but for the project” (in this case, the proposed leasing program) criterion. The potential mitigation measures purposely provide the AO discretion to tailor any measures that are adopted in the ROD for any specific development that may be proposed in the future. Some clarification has been provided in the text of what may be required under several potential mitigation measures (see those related to a Health Impact Analysis, Public Health Monitoring, Control of Contaminant-related Health Risk, and Public Safety and Infectious Disease). See also accompanying responses addressing the IFC guidelines.

[Response to 5.019]

The overview of health status is intended as a broad and general introduction to the topic of public health, the health status of North Slope communities within the context of the Alaska Native and Arctic Inuit populations, the change in health status over time, and the major factors that have influenced that change. The text has been modified in an effort to highlight region-specific data within the broader context of Alaska Native and Arctic Inuit health data.

[Response to 5.020]

The comment states that the actual NSB baseline for many standard public health outcome indicators is largely unknown. BLM has presented considerable data on regional public health indicators in the Draft SEIS/IAP. The sources for these data include, among others, the Alaska state Bureau of Vital Statistics and the Alaska Native Tribal Health Consortium Epidemiology Center's disease and mortality databases, as cited in the text. These are credible and valid statistics, and are relied on to inform the allocation of state and tribal public health resources and design of public health programs in the region. In an effort to further clarify and strengthen the discussion in this section in response to the concerns expressed in this comment, BLM has revised the text and added additional data and clarifications as necessary.

Infant mortality rates are typically calculated with a denominator of 1,000 live births, not a "population denominator of 100,000." On the North Slope, the quoted rates are calculated using a 3-year rolling average to compensate for the small population size.

Regarding the demographic characteristics of Barrow compared with other NPR-A villages, the commenters are referred to section 3.4.9, which describes the demographic, employment, and economic characteristics of each North Slope community; section 3.4.1.4, which describes the history of each community; and section 3.4.2, which describes the subsistence uses for each village – an important determinant of health in North Slope communities.

A review of these subsections reveals notable similarities and differences between these communities. Because of the statistical limitations posed by the small size of these villages (as pointed out in the comment) public health and health care delivery programs, interventions, and priorities in the state and tribal public health and health care systems are largely determined by regional data. Exceptions to this occur when specific problems are identified at the village level. For this reason, BLM believes the data presented in the text are adequate to support the conclusions presented in the Draft EIS/IAP, particularly with the text modifications

in this Final EIS/IAP. The NSB, AITC, and ANTHC are initiating baseline health analyses; as these data become available, they will facilitate a more refined analysis.

[Response to 5.021]

The BLM has revised the text of the potential mitigation measure 3, "Public Health Monitoring," to clarify the requirement. The measure is intended to augment, rather than replace or duplicate, existing surveillance. Examples of some indicators that might be pertinent for such a monitoring program are found in (GNWT 2003) and (ERG 2007). These citations are not included to suggest a specific monitoring program, but rather to provide examples of the types of indicators that might prove relevant to a specific project proposal and are not commonly tracked by existing surveillance programs.

See also the response to comment 77.016. The text has been modified to clarify BLM's approach to health effects analysis in the EIS/IAP.

The IFC Standards referenced in the comment were developed primarily to guide private sector investment and development efforts. It must be recognized that the regulatory environment in the U.S. differs substantially from the private sector and international standards to which the IFC documents refer. For example, under NEPA, BLM, not an industrial proponent or industry, is responsible for evaluating potential impacts and determining appropriate mitigation methods for the environmental consequences of the decision to lease in the planning area. As such, BLM can not rely on the IFC Performance Standards or Guidance Notes to allocate responsibility for management decisions. Under FLPMA, BLM has the authority and responsibility to require reasonable measures that address the potential impacts identified in the EIS.

[Response to 5.022]

As noted in the response to comment 77.020, because of the statistical limitations posed by the small size of these villages (as highlighted in the comment) public health decision-making (allocation of public health and health care delivery programs, interventions, and priorities in the state and tribal public health and health care delivery systems) is largely determined by regional data. Exceptions to this occur when specific problems are identified at the village level. For this reason, BLM believes the data presented in the Draft SEIS/IAP are adequate to support the conclusions presented in the Draft SEIS/IAP, particularly with the text modifications in the Final EIS/IAP. The NSB, AITC, and ANTHC are initiating baseline health analyses; as these data become available, they will facilitate a more refined analysis.

The U.S. rate is used for comparison because it illustrates the existence of a substantial health disparity at baseline. The recognition and elimination of health disparities figure as the top health priorities in the U.S. (as articulated by the Healthy People 2010 initiative), and in the state of Alaska (as articulated by the Healthy Alaskans 2010 initiative). The text in the Draft EIS/IAP also places the rate in the context of other Alaska regions by noting that the rates incidence rates in the Barrow Service Region are only the highest in the state "by a small margin." To address this comment, a table has been added to provide a comparison with other Alaska subregions as well.

[Response to 5.023]

The U.S. rates for suicide and the other health problems discussed in this section are used for comparison because they illustrate the existence of substantial health disparities at baseline. The recognition and elimination of health disparities figure as the top health priorities in the U.S. (as articulated by the Healthy People 2010 initiative), and in the state of Alaska (as articulated by the Healthy Alaskans 2010 initiative). To address this comment, a table has been added to provide a comparison with other Alaska subregions as well.

[Response to 5.024]

A comprehensive evaluation of the potential public health impacts of oil and gas development or any other large-scale project requires an approach that considers the social determinants of health, which are among the most powerful factors influencing health and health disparities in the U.S. and worldwide, and are among the factors most directly and substantially affected by industrial development. Social determinants affect not only psychosocial outcomes, as suggested by the comment, but a broad range of physical and psychological outcomes, as delineated in Table 4.3-D. The analysis of specific health impacts in Chapter 4 takes account of the factors discussed under the social determinants heading where possible. This section is provided to place development-specific effects in the context of the social determinants framework. The SDH are not the only focus of the health assessment process in this EIS.

[Response to 5.025]

See responses to the previous comment and comment 5.016.

[Response to 5.026]

BLM utilized the "logic framework" approach to guide its analysis, as described in the text. This approach is to be distinguished from logframe analysis as described in this comment. The logic framework approach is described in Cole et al. 2005, and UCLA 2007.

[Response to 5.027]

The Draft SEIS/IAP has applied a region-specific and systematic approach to identifying the potential effects of disturbances. BLM identified the health concerns for analysis through applying a general categorization of disease (such as described in the guidance documents provided by the WHO, IAIA, and IPIECA), and using a combination of review of public input (as required by NEPA), literature, and input by public health professionals experienced in Alaska Native public health.

The practice of HIA is evolving rapidly in the U.S. and internationally, and BLM believes it would be premature to state that there is a yet a single, accepted standard. The IPIECA document referenced by the DNR in this comment, for example, states that "the practice of HIA is relatively new and rapidly developing...Therefore, health-specific HIA standards of practice and specific methodologies are less well-established." The International Association of Impact Assessment's Health Impact Assessment: International Best Practice Principles is another useful resource which describes current international consensus regarding the principles and approach to HIA. Thus, while the IFC Standards represent one approach to assessing health impacts in the context of oil and gas development, BLM does not agree that these are the only standards appropriate to inform the analysis of health impacts in this EIS, particularly given the specific limitations and requirements of NEPA. There are a number of current documents available describing methods for achieving a comprehensive health impact analysis in the context of industrial development.

In general the EHA approach described in IFC Guidance Note 4 represents a valid strategy for categorizing public health effects of oil and gas projects, but the EHAs referenced would need to be adapted considerably for use on the North Slope. For example, in IFC Guidance Note 4, Annex A and B, EHA 6, Nutrition-related Issues mentions "changes in community level agricultural practices," and the discussion of this EHA at G19 suggests that "These impacts can be observed ... by changes in the levels of stunting, wasting, and underweight children..." This standard would not be appropriate for identifying or measuring impacts in the North Slope population, where a different set of nutritional concerns prevails.

BLM can continue to work with stakeholders in NPR-A development to refine and strengthen the approach to health impact analysis.

[Response to 5.028]

The text of the potential mitigation measure has been modified to clarify the intent and requirements. The Potential Mitigation Measure has been revised and no longer contemplates creation of a Health Advisory Board. The measure has the potential to alter impacts (through protecting and improving health outcomes) through ensuring that adequate consideration of potential public health impacts occurs at each stage of the NEPA process, and that adequate public health expertise is available to inform the NEPA process.

[Response to 5.029]

If the BLM adopts the Potential Mitigation Measure regarding subsistence presented to mitigate Public Health impacts, the lessee would be required to design the study for approval by the AO. The specific methodology would be appropriate for discussion at that time. Note that the Potential Mitigation Measure affords opportunity for input on the design from NSB, State, and Federal agencies.

The comment reasonably points out the normal variation and change in biological systems regardless of whether a project is present, and object to the use of the phrase "any impact." For this reason, the potential mitigation measure requires that mitigative action would only be authorized if "the AO determines that the lessee's actions are causing or have caused a reduction in subsistence harvests."

[Response to 5.030]

The BLM has revised the text of the potential mitigation measure 3, "Public Health Monitoring," to clarify the requirement. The measure proposes a limited monitoring program, and is intended to augment rather than replace or duplicate existing surveillance. Examples of some indicators that might be pertinent for such a monitoring program are found in (GNWT 2003) and (ERG 2007). These citations are not included to suggest a specific monitoring program, but rather to provide examples of the types of indicators that might prove relevant to a specific project proposal and are not commonly tracked by existing surveillance programs. The final study design would be dependent upon the specific proposed activities, location in relation to human populations and subsistence activities, and other factors that would be evaluated in relation to a specific development proposal, as stated in the measure.

[Response to 5.031]

The potential mitigation measures referenced in this comment have been modified. The baseline data collection and monitoring components of these measures are intended to inform performance-based management decisions in the region. Specific study design and optimal methods for data analysis and interpretation will be addressed in conjunction with specific development proposals.

[Response to 5.032]

Appendix G is presented as reference information that may help inform a multi-lateral dialogue among stakeholders regarding potential mitigation measures that could be beneficial as projects in the region are proposed and developed. The specific examples in Appendix G are selected with the understanding that not all elements of all the examples provided will necessarily be appropriate to the North Slope or to specific proposals. While there are some dissimilarities between the North Slope and the regions addressed in some of the case examples included in Appendix G, this does not invalidate all aspects of these cases for consideration on the North Slope.

COMMUNICATION NUMBER 6
From U.S. Fish and Wildlife Service
Regional Director, Region 7

Memorandum

To: State Director - Bureau of Land Management

From: Regional Director - Region 7

Subject: Comments on the Draft Supplemental Integrated Activity Plan/Environmental Impact Statement for the Northeast Planning Area of the National Petroleum Reserve – Alaska

The U.S. Fish and Wildlife Service has reviewed the Draft Supplemental Integrated Activity Plan/Environmental Impact Statement (DSEIS) prepared by the Bureau of Land Management (BLM) for the Northeast Planning Area of the National Petroleum Reserve-Alaska (NPR-A). Alternatives presented in the DSEIS are derived from the 2005 Amended IAP/EIS. Three action alternatives are presented in the DSEIS, in addition to a No Action Alternative that would retain the current management strategy authorized by the 1998 Record of Decision.

Our review is focused on the potential impacts to our federal trust resources including migratory birds, marine mammals, anadromous fish, subsistence resources, and species listed or proposed for listing under the Endangered Species Act. We provide general comments and recommendations as well as specific comments regarding the DSEIS (see attachment), and we provide the most recent data and status updates available for key Service trust resources. We have summarized our most important comments and recommendations below.

The 4.6 million-acre Northeast Planning Area includes some of the most valuable fish and wildlife resources on the Arctic Coastal Plain, the most significant of which are associated with the Teshekpuk Lake region and the Colville River corridor. These areas have been designated as Special Areas because of their concentrations of molting geese and other waterbirds, caribou, raptors, and passerines; important nesting and staging areas for waterfowl, shorebirds, and raptors; overwintering and spawning areas for fish; and calving and insect-relief habitat for caribou. Additionally, the central region of the Planning Area contains an unusual concentration of deep-water lakes and provides habitats for species of management concern. As a result of this biological diversity and richness, the area also supports important subsistence resources, including fisheries on the Colville and Ublutuoch Rivers, Fish Creek, Judy Creek, and their tributaries, and critical habitats for the Teshekpuk Lake Caribou Herd. The Service believes that the protective measures ultimately adopted in this process will play a critical role in the future of this diverse and biologically important landscape.

Because of the importance of the Teshekpuk Lake area to molting geese, other waterbirds, caribou and subsistence users, the dynamics of the coastal plain environment, and the impacts of climate change on habitats and wildlife populations, the Service believes avoiding surface and hydrologic disturbance in this biologically sensitive area provides the greatest level of protection (and least risk) to wildlife. We recommend a no-lease strategy for the portion of the TLISA identified in Alternative A (Map 2-1) of the draft SEIS as “Not Available for Oil and Gas Leasing,” and we recommend avoiding surface disturbance in the portion of the TLISA identified in Alternative A as “No Surface Activity.” The Service recommends additional protective status for this important area and would welcome the opportunity to work with BLM to manage and monitor these fish and wildlife resources.

The Service recommends roadless development on the North Slope wherever feasible, because reduced footprints lessen impacts in biologically sensitive areas. The majority of wetlands found within the Northeast Planning Area are sensitive and highly valuable to the Service's trust species. To further minimize impacts to wildlife resources as development moves westward into NPR-A, the Service strongly supports a collaborative, landscape-level approach to planning minimum-impact infrastructure. We recommend a condition or stipulation be crafted for the agency preferred alternative that would require minimal footprint infrastructure, consolidated facilities, and the avoidance of higher-value habitats, to the maximum extent possible.

Climate change also will have significant impacts on fish and wildlife and, consequently, how we manage them. Given the threat that climate change poses to trust resources in the Arctic, additional baseline data are paramount for determining the cumulative impacts to fish and wildlife. The Service recommends the development of a rigorous research and monitoring plan to evaluate the impacts of management decisions and the effectiveness of proposed mitigation measures adopted through the IAP/EIS process. The research and monitoring plan should be central to a peer-reviewed Adaptive Management Strategy that should be completed prior to development in the Northeast Planning Area.

We thank you for this opportunity to comment. If you have questions concerning our comments, or if we can be of further assistance with regard to technical resource information, please contact Deborah Rocque, Field Supervisor of the Fairbanks Fish and Wildlife Field Office, at (907) 456-0272.

Attachment

U. S. Fish and Wildlife Service Comments on the Northeast NPR-A Draft Supplemental IAP/EIS

Our comments are focused upon potential impacts to our federal trusts resources including migratory birds, marine mammals, anadromous fish, subsistence resources (e.g., caribou) and species listed or proposed for listing under the Endangered Species Act. They are organized into two sections: 1) General Comments, which address broad issues or issues applicable to several of the analyzed alternatives; and 2) Specific Comments referenced to text in the Draft SEIS.

In our General Comments we summarize our most significant concerns and build on comments made previously regarding activities in the Northeast Planning Area, relying particularly on our August 2004 comments on the Draft IAP/EIS and subsequent comments in November 2004 providing further clarification and references. In addition to this background information, the following comments provide an update on resource information and status.

GENERAL COMMENTS

Special Areas

Teshkepkuk Lake Special Area

The value to fish, wildlife and subsistence resources of the area surrounding Teshekpuk Lake has long been recognized, leading to designation of the Teshekpuk Lake Special Area (TLISA), which encompasses much of the northern half of the Northeast Planning Area. In addition, the particular importance to molting geese, other waterbirds, caribou and subsistence users of the area immediately adjacent to and north of the lake has been well documented in Service reports, comments and in the literature.

The numbers of Pacific brant and the total numbers of all geese that use the region north and east of Teshekpuk Lake exceed those of any known molting area in the North American and Siberian Arctic. Although recognized principally for its concentrations of molting geese, the TLSA also provides important nesting, brood-rearing and staging habitat for other waterfowl, including listed spectacled eiders, and shorebirds. It also provides terrestrial denning habitat used by polar bears and important calving, migration, and insect-relief habitat for caribou of the Teshekpuk Lake Herd (TLH), the herd harvested most heavily by Alaskan North Slope subsistence communities. The combination and concentration of these resources make this part of the TLSA uniquely valuable to fish and wildlife and to local subsistence communities.

In 2001, the Service recorded 36,817 molting Pacific brant (nearly 30 percent of the entire population) during aerial surveys north of Teshekpuk Lake (Mallek 2004). During aerial surveys conducted from 2002 to 2006, the Service recorded between 17,000 and 20,000 molting Pacific brant in the Teshekpuk Lake area (Mallek 2007), and 27,109 brant (just over 20 percent of the population) were recorded in 2007 (USFWS unpubl. data). These data continue to support our conclusion that the habitat provided in this area remains an important resource for molting Pacific brant. Because high numbers of molting brant north of Teshekpuk Lake coincide with years of poor productivity on the Yukon-Kuskokwim Delta, this part of the TLSA appears to be especially important to the population during years of poor recruitment.

In addition, the Pacific brant population has been in slow decline for decades (Conant and King 2003) and remains below Pacific Flyway population objectives (Pacific Flyway Council 2002), necessitating a restrictive harvest management regime that adversely affects both subsistence and sport hunters. Despite low numbers and harvest restrictions, Pacific brant continue to be an important resource for subsistence waterfowl hunters on the North Slope and in northwest, western and southwest Alaska; in surveys conducted from 1992-2000, brant accounted for over 13 percent of the reported subsistence goose harvest in these areas (AK Mig. Bird Co-Mgmt. Council 2004). In addition to being a valued subsistence resource in Alaska, these birds also represent an important sport harvest species on the west coast of the U.S. and Mexico.

In 1998, the Service analyzed the potential for conflicts between oil development and waterfowl in the Teshekpuk Lake region (Martin 1998). That analysis, which is still relevant, noted evidence of behavioral and physiological responses by molting brant to aircraft and other sources of disturbance that would likely accompany oil and gas development. Such disturbance could cause increased energy expenditures, decreased foraging time, and depleted lipid and protein reserves, which may increase the duration of the flightless period and susceptibility to predation. Increased development could displace birds from optimal to sub-optimal habitats, potentially resulting in over-crowding and a decline in forage availability. Any of these responses to increased disturbance, or any combination of them, could result in reduced survival of molting brant. This is likely also true for other molting geese.

The portion of the Arctic coast north of Teshekpuk Lake is subject to coastal erosion and thermokarst lake processes (Mars and Houseknecht 2007) resulting in changing habitat conditions, the dynamics of which may be exacerbated by climate change. Recent studies on the spatial distribution of molting geese near Teshekpuk Lake indicate that habitats in the area are changing in response to shifting environmental conditions (Flint et al., in press). These changes may be causing shifts in the distribution and abundance of goose populations utilizing the Teshekpuk area. Stresses associated with oil development could add to or accelerate impacts to molting geese and other wildlife already occurring due to climate change.

The area surrounding Teshekpuk Lake also encompasses critical calving, migration and insect-relief habitats for TLH caribou. Telemetry data indicate that collared cows found in this area

during calving season have much higher calving success than those found outside the area. In surveys conducted from 1990-2003, 90 percent (147 out of 163) of collared TLH cows that calved successfully did so within this area (Carroll 2003). In most years, over 75 percent of the herd uses the area around and north of the lake during the insect season. The TLH continues to be an important subsistence resource, providing most of the caribou harvested by the Native communities of Atkasuk, Barrow, Nuiqsut, and Wainwright. In 2003-2004, a substantial portion of the herd migrated east and wintered in the Arctic National Wildlife Refuge and in the vicinity of Kaktovik, where they provided a rare opportunity for winter caribou harvest for that community (ADF&G 2005). In recent years, 2,500 to 4,463 TLH caribou (6-10 percent of the herd) have been harvested annually (ADF&G 2005), almost exclusively by subsistence communities.

Because of the importance of the Teshekpuk Lake area to molting geese, other waterbirds, caribou and subsistence users, the dynamics of the coastal plain environment, and the impacts of climate change on habitats and wildlife populations, the Service believes avoiding surface and hydrologic disturbance in this biologically sensitive area provides the greatest level of protection (and least risk) to wildlife. We recommend a no-lease strategy for the portion of the TLSA identified in Alternative A (Map 2-1) of the Draft SEIS as “Not Available for Oil and Gas Leasing,” and we recommend avoiding surface disturbance in the portion of the TLSA identified in Alternative A as “No Surface Activity.” The Service recommends additional protective status for this important area and would welcome the opportunity to work with BLM to manage and monitor these fish and wildlife resources.

Colville River Special Area

The northeastern third of the 2.3-million acre Colville River Special Area (CRSA) lies within the Northeast Planning Area and forms its southern and much of its eastern boundary. The upper Colville River has long been recognized as one of the most important raptor nesting areas in North America, both in terms of species diversity and breeding density (Kessel and Cade 1956, 1958; Cade 1960, White and Cade 1971). The river corridor and surrounding tundra provide a diverse suite of habitats, resulting in an abundance of prey (small birds and mammals) for raptors nesting along the cliffs formed by the river. Arctic peregrine falcons, gyrfalcons, and rough-legged hawks are regular breeders along the Colville River (Ritchie and Wildman 2000, Swem 1996). Because these species and subspecies nest exclusively in the Arctic and sub-Arctic, a significant proportion of the United States’ population of these birds nest within the NPR-A, primarily along the Colville River and several of its tributaries.

Approximately one-fourth of Alaska’s Arctic peregrine population nests along the Colville River (Ritchie and Wildman 2000). Banded fledglings from peregrine nests along the Colville have nested in subsequent years in other North Slope drainages (USFWS unpubl. data), suggesting that the Colville River breeding population acts as a source for populations in adjacent areas. Protecting habitats within the CRSA, therefore, is likely important for maintaining local raptor populations as well as populations over a broader area of the North Slope.

The Service supports BLM’s efforts to complete a management plan specifically for the CRSA. We recommend the primary objectives of that plan focus on conserving the CRSA’s diverse land bird community and the habitats that support these species.

Threatened and Endangered Species/Marine Mammals

Spectacled eiders and the Alaska-breeding population of Steller’s eiders were listed as threatened under the Endangered Species Act (ESA) in 1994 and 1997, respectively. Steller’s

eiders in Alaska historically nested discontinuously from the Aleutian Islands to the Seward Peninsula, from the vicinity of Point Lay to Point Barrow, and east of Point Barrow along the Arctic Coastal Plain (ACP) to the United States-Canada border (Kertell 1991). Within the Northeast Planning Area, breeding Steller's eiders were recorded north of Teshekpuk Lake, near Cape Halkett and Pitt Point, prior to 1970 (Quakenbush et al. 2002). Since 1970, the species has been recorded in these areas and at several other locations north and east of Teshekpuk Lake, although evidence of breeding within the Northeast Planning Area is scant. Results of surveys conducted over the past decade indicate that the nesting range of the Steller's eider is currently primarily confined to the vicinity of Barrow (Larned et al. 1999; Obritschkewitsch et al. 2001; Ritchie and King 2001, 2002; Quakenbush et al. 2002). However, the Northeast Planning Area, particularly the area north of Teshekpuk Lake, provides suitable nesting and brood-rearing habitat for Alaska-breeding Steller's eiders and would presumably be important in supporting population recovery.

Spectacled eiders, which are more evenly distributed across the ACP, usually nest in wet meadows, basin wetland complexes, along the edges of shallow ponds and lakes, or on islands in larger lakes. Approximately 15 percent of the ACP-breeding population of spectacled eiders occurs within the Northeast Planning Area, and Service Breeding Pair Surveys have identified several areas of high-density nesting within the Northeast Planning Area to the north and northeast of Teshekpuk Lake (Larned et al. 2003). The Service's Endangered Species Branch has consulted with the BLM and completed the required ESA Section 7 consultation for the Final 2005 IAP/EIS. Further Section 7 consultation for the Northeast Planning Area IAP/SEIS is currently underway.

In accordance with the Marine Mammal Protection Act, the Service is responsible for the management of polar bears in Alaska. Polar bears occur in both terrestrial and marine habitats within and adjacent to the Northeast Planning Area and may be impacted by nearshore and coastal oil and gas activities. For your consideration during preparation of the Final SEIS, we provide the following updates on polar bear population status, ongoing research, and federal designation in northern Alaska.

Polar bears occur and den within the NPR-A, primarily along or within a few miles of the coast, although they may use habitats 25 miles or more inland. The Beaufort Sea coastline, as well as river drainages and bluffs along lakes within the NPR-A, provide important areas used by polar bears for resting, feeding, denning, and seasonal movements. In the Northeast Planning Area, polar bears are known to have denned at or near Cape Simpson, Smith Bay, Lonely, Pogik Bay, Cape Halkett, Eskimo Islands, Atigaru Point, and the Colville River Delta. From 1910-2003, 19 polar bear den locations were documented within and adjacent to the Northeast Planning Area; of these, six have been documented since 1998. Because only a relatively small percentage of den locations is known with certainty (roughly 3-7% of potential denning females are radio-collared in a given year), the actual number of dens in the Northeast Planning Area may be substantially higher.

In November 2006, the U.S. Geological Survey (USGS) completed a report entitled Polar Bear Population Status in the Southern Beaufort Sea (Regehr et al. 2006). The report provides information regarding reduced cub survival and physical stature of polar bears which will ultimately affect the population status of polar bears in the Beaufort Sea region.

In the last decade, observations of polar bears on land along coastal areas of the Beaufort Sea have been increasing (Stirling and Andriashek 1992, Amstrup and Gardner 1994, and Amstrup 2000). The reason for this increase is likely due to loss of sea ice related to climate warming. The continued reduction in ice cover from global climate change will likely result in more polar

bears using terrestrial habitats along the coastline for protracted periods of time, thereby also increasing potential conflicts with human activities, including oil development.

In December 2006, the Service prepared a Status Assessment describing the current status of polar bears world-wide (Schliebe et al. 2006). The Assessment was developed in response to a petition requesting that the Service list polar bears as a threatened species under the ESA, due to loss of sea ice habitat. The Service found that there was sufficient evidence to warrant listing and prepared a proposed rule in January 2007; a final listing determination will be made by January 2008. The Status Assessment and other information relating to the proposed listing are available at <http://alaska.fws.gov/fisheries/mmm/polarbear/issues.htm>.

If the polar bear is listed as threatened or endangered in January 2008, Section 7 consultation with the Service will be a necessary element of the Final Northeast Planning Area SEIS. In the interim, it may be valuable to BLM to “conference” with the Service on polar bear conservation. Under the ESA, “conference” refers to a process of early interagency cooperation designed to identify potential conflicts between an action and species conservation, and to minimize or avoid adverse effects to proposed species or proposed critical habitat. Any work completed during conference is applicable to a Section 7 consultation if it becomes necessary.

Other Species of Concern

Several other species of concern to the Service could be impacted by oil development in the Northeast Planning Area. On June 6, 2007, the Service made a positive 90-day finding regarding a petition to list the yellow-billed loon (*Gavia adamsi*) under the ESA. The determination of whether such listing is warranted will be made after completion of a status review, which is anticipated to be completed by summer, 2008. Under Section 7 of the ESA, species petitioned for listing are not assessed as part of the consultation; however, if these or any other species are listed in the future, it will be necessary to reinitiate consultation.

The Northeast Planning Area supports approximately 25 percent of Alaska’s breeding population of yellow-billed loons, with notable concentrations to the west, southwest, and east of Teshukpuk Lake. These areas provide unusually high concentrations of deep-water lakes (over four meters deep) as compared to other areas on the ACP. Although aerial surveys over the last two decades have not detected a significant change in the number of adult yellow-billed loons on Alaskan breeding grounds (Mallek et. al. 2004), the ability of surveys to detect significant change is relatively low (i.e. relatively large population declines could occur before current survey methods would detect a significant declining trend).

Because yellow-billed loon breeding habitats are likely to face threats, including those from oil development, in November 2006 the Service, BLM, NPS, and the State of Alaska (Departments of Fish and Game, and Natural Resources) completed a Conservation Agreement to protect yellow-billed loons in Alaska. Breeding habitats were addressed through agency-specific controls on oil and gas exploration and development. The Conservation Agreement also addresses monitoring, both of yellow-billed loon populations and of the effect of management actions, and provides a mechanism for review of research needs. Implementation of this Conservation Agreement should contribute to the conservation of the yellow-billed loon and its habitat.

The king eider, another species for which the Service has management concern, is found in significant numbers in the north-central portion of the Northeast Planning Area. A large area immediately north and west of Fish Creek supports the largest high-density nesting area for king eiders on the North Slope of Alaska (Larned et. al. 2003). Measures to minimize

disturbance and prevent an increase in predators are appropriate in high-density king eider nesting areas.

[6.001, 002, 003] In general, the Draft SEIS needs further information on the importance of the Planning Area to shorebirds, and the potential impacts of oil and gas development on shorebirds. We recommend the following information on shorebirds be included in the Alternatives and Cumulative Impacts Analyses of the FEIS.

[6.001 cont'd] * Shorebird breeding densities in NPR-A tend to exhibit a coastal gradient, with higher densities nearer the coast compared to inland areas (Andres 2004), and concentrations of staging shorebirds are most notable at coastal locations, particularly north and east of Teshekpuk Lake. Development within the TLSA will have disproportionately greater effect than development further inland. Concerns are greatest for those species that are declining and are found in greater than average abundance in the TLSA, including dunlin, red phalarope, and ruddy turnstone (Andres 2004). Avoiding development along the coast and within the TLSA would provide significant protection for these species. Other species of Conservation Concern that occur in the NPR-A include American golden plovers, sanderlings, red knots, bar-tailed godwits, and whimbrels.

[6.002 cont'd] * Cumulative effects from multiple developments over a large area could have a negative impact on less common species of shorebirds, especially if facilities and roads are built in their preferred habitats. This may be particularly true for species that use the drier habitats within the NPR-A. Such areas, frequently selected as sites for pads, pipelines and roads as managers attempt to avoid wetland sites, may be relatively limited and locally more important to some species compared to adjacent wetland areas. In the Northeast Planning Area, these drier areas are selected by buff-breasted sandpipers, a Species of High Conservation Concern (Brown et. al. 2001).

[6.003 cont'd] * Buff-breasted sandpipers and other species of shorebirds are highly site faithful, and a loss or alteration of traditional breeding sites may prevent these birds from breeding successfully. Thus, displaced birds may fail to breed in subsequent years, resulting in reduced productivity and lower recruitment rates.

Additional Mitigation

In addition to the recommendations provided above and the mitigation measures associated with alternatives, the Yellow-billed Loon Conservation Agreement, and the Endangered Species Act Consultation, the Service recommends the following additional measures be included as part of the mitigation package of the agency preferred alternative presented in the Final SEIS.

* To facilitate a landscape-level approach to minimizing impacts associated with infrastructure, the Service recommends a special condition or stipulation be crafted for the agency preferred alternative. This stipulation should prohibit connecting permanent roads (i.e., gravel, sand) within the Northeast Planning Area to road systems or docks outside of the planning area, thereby encouraging the use of a roadless development design. The stipulation should also require minimal footprint infrastructure, consolidated facilities, and the avoidance of higher-value habitats to the maximum extent possible. To minimize impacts to wildlife resources as development moves westward into NPR-A, the Service strongly supports a collaborative, landscape-level approach to planning minimum-impact infrastructure.

* To successfully implement performance-based stipulations and Required Operating Procedures (ROPs) associated with Alternative B, C, and D in the Draft SEIS, the Service

believes a rigorous research and monitoring plan should be completed prior to development in the Northeast Planning Area. Because adequate baseline data do not exist for many of the wildlife resources that may potentially be impacted by development in the planning area, detecting changes associated with development will be problematic, if not impossible. However, once baselines are established for particular resources, continued intensive monitoring as development occurs will also be necessary to evaluate both the magnitude of impacts and the effectiveness of mitigation measures. This monitoring needs to be conducted pre- and post-development and for a sufficient amount of time to make scientifically-based conclusions regarding the impacts of development impacts and mitigation effectiveness. The research and monitoring plan should be central to a peer-reviewed Adaptive Management Strategy that should be completed prior to development in the Northeast Planning Area.

[6.004] Alternatives and Cumulative Impacts Analysis

The Service appreciates the complexities of conducting an analysis of the potential impacts of alternatives and the potential cumulative effects of those alternatives in the Northeast Planning Area and surrounding landscape, however, we recommend a more quantitative approach using existing resource data (e.g., ACP waterfowl breeding pairs surveys, molting goose surveys, and TLH caribou survey and telemetry data). Although it is not possible to accurately predict where future facilities and infrastructure will be located, analyses could be conducted using reasonable development scenarios and estimates of impacted acreage. While analysis at the individual facility scale is not feasible, using a considerably larger scale is possible, and such analyses could be designed to evaluate the potential for development-resource contact or influence under each alternative. This would provide a useful comparison of the potential for each alternative to affect a number of species, in the near-term and long-term, for which population and distribution data currently exist. We understand the issues are very complex, but we believe such analyses could reasonably be conducted and that their results would allow a more informed comparison of potential short- and long-term impacts among alternatives and provide a framework for additional analyses, by alternative, of the effects of proposed mitigation measures.

Climate Change

The implications of climate change may be one of the most challenging issues facing land managers in the Arctic. Warming temperatures in the Arctic have been correlated with reductions in sea ice thickness and extent observed both at the winter maximum and summer minimum (Richter-Menge et al. 2006). Over the last 30 years there have been measurable changes in sea ice distribution, thickness, and the timing of breakup. Recent data indicate average area declines of about 3 percent per decade since the late 1970s, and suggests that the rate of area loss increased to 4.5 percent per decade in the 1990s (CCSP 2006). Record low values of summer sea ice extent have been set repeatedly since 1980. In addition to sea ice reductions, warming temperatures have resulted in widespread changes to Arctic vegetation, with the tundra experiencing an increase in both shrubs and greenness (ACIA 2005).

Managing fish and wildlife resources in a changing environment coupled with the stressors induced by the development and spread of infrastructure requires a comprehensive research and monitoring plan. Establishing and maintaining baseline population and distribution data is imperative, especially if management decisions will be based, in part, on development-related impacts to species. As stated above under Additional Mitigation, we recommend the need for a rigorous research and monitoring plan to evaluate the impacts of climate change, management decisions and the effectiveness of proposed mitigation measures.

SPECIFIC COMMENTS

[6.005] Page 3-51, paragraph 1, last sentence:

The North Slope Eider Survey is timed to occur between the arrival of breeding pairs of spectacled, king and Steller's eiders and the departure of male eiders, which generally depart earlier than males of other duck species. Information should be included on the ABR special Steller's eider aerial surveys, which have been conducted in the "Barrow triangle" for about 5 years, to supplement other surveys for Steller's eider breeding pair data.

[6.006] Page 3-55, paragraph 3,4:

White-fronted and Canada geese counted during the ACP surveys from late June to early July include both local nesters and molt migrants from the interior and probably other locations, resulting in a wide range in annual estimates depending on timing of the survey, nesting phenology, and nesting success in the interior. The very high counts in certain years likely contained a high proportion of molt migrants.

[6.007] Page 4-740:

Activities not Associated with Oil and Gas – The presentation here appears to make the assumption that all land/habitats are of equal value to wildlife. While it's true that villages will likely continue to expand, it may not be reasonable to assume that the expansion into adjacent lands will be equivalent to oil and gas development within the planning area in terms of impacts to wildlife. Survey data are available and may be useful in ranking various habitats in terms of bird use. Service biologists are available to assist in an effort to compare the potential effects of the various activities considered in the SEIS on birds and their habitats.

[6.008] Maps:

Polygons used in the waterfowl density distribution maps should be identified as average observed breeding population density, not corrected for undetected individuals. Density values should be given in legends, rather than just high, medium, low, etc. The legend reads "birds per square kilometer," but values should be given. Also, at least some of the maps should use a larger grid scale, as it appears that in some cases single observations have become density polygons, and the surveys are not designed for such fine scale interpretation. Also, the source of data is not given (i.e.: is it the eider survey, ACP pair survey, or both combined).

Map 3-14: The goose molting lakes should be a larger scale – without showing the whole planning unit, except perhaps as an inset. If a larger scale was used, perhaps min-max ranges of estimates could be shown for individual lakes rather than just average classes.

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[Response to 6.001]

The BLM has presented information regarding densities and distributions of shorebirds in Chapter 3, Section 3.3.6.4 of the Supplemental IAP/EIS.

[Response to 6.002]

Species-specific habitat requirements are presented in Chapter 3, Section 3.3.6.4 specifically addresses buff-breasted sandpipers and their habitat requirements.

[Response to 6.003]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project specific scale appropriate for exploration and development a more quantitative approach such as you suggest would be appropriate and BLM would welcome the Services assistance at that time.

[Response to 6.004]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project specific scale appropriate for exploration and development a more quantitative approach such as you suggest would be appropriate and BLM would welcome the Services assistance at that time.

[Response to 6.005]

The "Barrow triangle" survey and results are discussed in Section 3.3.8.3.

[Response to 6.006]

Section 3.3.6.3 (white-fronted and Canada goose section) has been edited to make clearer the fact that numbers of these birds range widely due to the factors that you list.

[Response to 6.007]

Without project-specific information (oil and gas or non oil and gas related development) BLM feels that there is no option except to assume that all habitats are of equal value to wildlife as we don't know which habitats will be affected by activities associated with or not associated with oil and gas development. In taking this approach BLM feels that if an error is made in the estimation of the effect it will be an overestimation as to the adverse effect on wildlife habitat.

[Response to 6.008]

Density values in terms of estimated relative density (birds/sq km) are now presented on maps.

The BLM feels that the source of data as presented is sufficient to allow the reader to contact the Service if more detail on the data are needed. Map 3-14 has been enlarged in scale.

COMMUNICATION NUMBER 7

From U.S. Geological Survey

James Devine, Senior Advisor for Science Applications

As requested by your correspondence of August 1, 2007, the U.S. Geological Survey (USGS) has reviewed the subject draft supplemental integrated activity plan/environmental impact statement and offers the following comments.

SPECIFIC COMMENTS

[7.001] Section 4.3.4-b.2, Spills, page 4-93, last full paragraph of this sub-section

Numerous assertions are made in this paragraph without supporting scientific references of analyses, such as the statement that the effects of a spill less than 1,000 bbl can be considered minor. Consideration should be given to providing support for such statements.

[7.002] Bibliography

The correct citation for Amstrup (1995) is: Amstrup, S.C. 1995. Movements, distribution, and population dynamics of polar bears in the Beaufort Sea. Ph.D. Dissertation. University of Alaska Fairbanks, Alaska. 299pp.

Douglas et al. (2002) can be accessed online at: <http://www.absc.usgs.gov/1002/>.

The correct report number for Garrity et al. (2002) is USGS Open File Report No. 02-439.

Griffith et al. (2002) can be accessed online at: <http://alaska.usgs.gov/BSR-2002/pdf/usgs-brd-bsr-2002-0001-sec03.pdf>

Thank you for the opportunity to review and comment on the draft supplemental integrated activity plan/environmental impact statement. If you have any questions concerning our comments, please contact Lloyd Woosley, Chief of the USGS Environmental Affairs Program, at (703) 648-5028 or lwoosley@usgs.gov.

Sincerely,

James F. Devine

Senior Advisor for Science Applications

[Response to 7.001]

The text of the paragraph on the impacts of a major crude oil spill under Alternative A has been revised and an appropriate reference has been added.

[Response to 7.002]

All of these changes have been made in the final document.

COMMUNICATION NUMBER 8

From U.S. Environmental Protection Agency

Michelle Pirzadeh, Director, USEPA, Off. Of Ecosystems, Tribal and Public Aff.

Reply To: ETPA-088 Ref: 97-013-BLM

Thomas P. Lonnie, State Director
U.S. Department of the Interior
Bureau of Land Management
Alaska State Office
222 W. 7th Avenue, #13
Anchorage, AK 99513-7599

Dear Mr. Lonnie:

The U.S. Environmental Protection Agency (EPA) has completed its review of the Draft Supplemental Integrated Activity Plan (IAP)/Environmental Impact Statement (DSEIS) for the Northeast National Petroleum Reserve-Alaska (NE NPR-A) (CEQ No. 070359) in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

The Bureau of Land Management (BLM) has undertaken the NE NPR-A Draft Supplemental IAP and EIS to augment the 2005 final Amended EIS, for which a Record of Decision (ROD) was released on January 11, 2006. The Supplement is in response to a finding of the U.S. District Court for the District of Alaska in *National Audubon Society v. Kempthorne*. This DSEIS evaluates four alternatives for the management of approximately 4.6 million acres of public lands in the Northeast Planning Area of the NPR-A. The alternatives range from continuing with the current lease area in the No Action Alternative A (approximately 87% of the planning area available for lease), through expanded lease areas in Alternatives B and D (both alternatives make approximately 95% of the area available to leasing), to full expansion in Alternative C (which opens the entire area (100%) to leasing). The action alternatives also incorporate various performance-based stipulations and Required Operating Procedures (ROPs), patterned after those being implemented in the Northwest Planning Area, as well as varying leasing and occupancy restrictions.

Although we acknowledge that the DSEIS further analyzed cumulative impacts, EPA continues to have objections with the action alternatives due to their potential significant adverse impacts to important habitat areas (including wetlands, aquatic habitat, and fish and wildlife resources). In our September 9, 2004, comment letter on the DEIS and our March 3, 2005, letter on the FEIS, we expressed our environmental objections to the then-Preferred Alternative. The DEIS amended a 1998 Final IAP/EIS and Record of Decision (ROD). The 1998 IAP/EIS and ROD were the result of a collaborative effort by the BLM; federal, state, and local resource and regulatory agencies; federally recognized Tribes; and residents in local affected communities. The BLM determined in 1998 that the surface resources in the Teshekpuk Lake and the Colville River Special Areas deserved special protections.

On the basis of information presented in the DEIS prepared in 2004, we determined that, in EPA's view, the biological, cultural and subsistence resources (surface resources) continue to merit the protections assured by the leasing plan in the 1998 ROD. In our 2004 comment letter on the DEIS, we stated that the Preferred Alternative would likely cause significant adverse impacts to fish and wildlife resources and habitat areas (including wetlands and aquatic habitat), and in particular to critical waterfowl habitat and caribou calving and insect-relief

areas and migration corridors in the Teshekpuk Lake Special Area. We also expressed objections with the FEIS addition of a modified Preferred Alternative that had greater impacts to water quality and surface resources compared with the Preferred Alternative in the DEIS. Copies of the letters are provided in Enclosure 1.

In addition to the comments above, we have enclosed detailed comments and recommendations on this DSEIS for BLM to consider as the FSEIS is being developed (Enclosure 2).

Since a preferred alternative has not been identified, EPA has assigned a rating to each of the alternatives:

Action Alternative	Rating	Basis
Alternative A	LO	- Restrictions and protections for most sensitive areas and resources remain unchanged - Prescriptive stipulations remain in place
Alternative B	EO-2	- Significant adverse impacts to Teshekpuk Lake and Colville River Special Areas - Significant adverse impacts to subsistence resources - Utilization of performance-based stipulations and ROPs warranting data to demonstrate effectiveness
Alternative C	EO-2	- Significant adverse impacts to Teshekpuk Lake and Colville River Special Areas, and all protected areas. - Significant adverse impacts to subsistence resources - Utilization of performance-based stipulations and ROPs warranting data to demonstrate effectiveness
Alternative D	EO-2	- Significant adverse impacts to Teshekpuk Lake and Colville River Special Areas. - Significant adverse impacts to subsistence resources - Utilization of performance-based stipulations and ROPs warranting data to demonstrate effectiveness

EPA has rated action alternatives B, C, and D EO-2 (Environmental Objection-Insufficient Information). A copy of the EPA rating system used in conducting our environmental review is provided as Enclosure 3. EPA recommends that the BLM analyze a modified Alternative A that retains the current leasing acreage and surface activity restrictions described in the Alternative A, but allows for and incorporates the performance-based stipulations and ROPs included in Alternatives B and D as data on effectiveness of these measures become available. EPA believes that the performance-based measures should integrate data available to date from the Northwest Planning Area to demonstrate the effectiveness of these new requirements.

The appropriate use of lease stipulations and ROPs that provide flexibility along with adequate environmental protections and mitigation would optimize the development of oil and gas resources on lands presently open for development, provide for enhanced energy security, and protect the valuable surface resources in the entire Planning Area. We understand the challenges inherent in satisfying multiple objectives, and we believe this modified alternative achieves a balance between oil and gas exploration and development activities and the protection of valuable biological, cultural and subsistence resources.

Although EPA has objections with each of the action alternatives, EPA acknowledges the additional protections for Teshekpuk Lake and the areas to the north, east, and south of the Lake presented in Alternatives B and D. Should BLM proceed with the selection of an

Northeast NPR-A Supplemental IAP/EIS

alternative other than a modified Alternative A (described above), EPA recommends that the Preferred Alternative reflect the substantial restrictions and protections outlined in both Alternative B and Alternative D.

We acknowledge and appreciate the BLM's ongoing efforts to meet with directly and indirectly affected communities in order to facilitate greater participation. We encourage the BLM to take sufficient time during the preparation of the FSEIS and ROD to engage in additional government-to-government consultation and agency coordination, and provide adequate opportunity to discuss issues, concerns, and comments regarding this DSEIS and the NEPA process.

We look forward to working with you as BLM prepares the final SEIS and ROD. We appreciate the opportunity to provide comments on the DSEIS. Should you have any questions regarding our comments, please contact me at (206) 553-1272. The staff contact for this review is Jennifer Curtis in our Alaska Operations Office at (907) 271-6324.

Sincerely,

Michelle Pirzadeh, Director

Office of Ecosystems, Tribal and Public Affairs

cc: Jim Ducker, Planning Team Leader, BLM
ENSR Project Office, Anchorage, Alaska

Enclosures

Enclosure 1
U.S. Environmental Protection Agency
Previous Comment Letters on the
Northeast National Petroleum Reserve-Alaska
Draft and Final IAP/EISs

September 9, 2004
Reply To Attn Of: ETPA-088 Ref: 97-013-BLM
Henri Bisson, State Director
U.S. Department of the Interior
Bureau of Land Management
Alaska State Office
222 W. 7th Avenue, #13
Anchorage, AK 99513-7599

Dear Mr. Bisson:

The U.S. Environmental Protection Agency (EPA) has completed review of the Draft Amended Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) for the Northeast National Petroleum Reserve-Alaska (NPR-A) (CEQ No. 040275) in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Under our 309 authority, our review of the Draft EIS considered not only the

expected environmental impacts of the project, but also the adequacy of the EIS in meeting the procedural and public disclosure requirements of NEPA.

The Draft EIS amends a 1998 Final IAP/EIS and Record of Decision (ROD) and evaluates three alternatives, including a No Action Alternative (Alternative A) and two action alternatives, for the management of approximately 4.6 million acres of public lands in the Northeast Planning Area. The Draft EIS identifies a Preferred Alternative (Alternative B), which would allow oil and gas leasing on portions of lands currently closed to leasing or under No Surface Activity restrictions and adopt a set of performance-based stipulations and Required Operating Procedures (ROPs) patterned after those developed for the Northwest NPR-A Planning Area.

EPA's review of the Draft EIS has concluded that the Preferred Alternative (Alternative B) is likely to cause significant adverse impacts to fish and wildlife resources and habitat areas (including wetlands and aquatic habitat), and in particular to critical waterfowl habitat and caribou calving and insect-relief areas and migration corridors in the Teshekpuk Lake Special Area. On the basis of information presented in the Draft EIS, we have determined that the biological, cultural and subsistence resources (surface resources) continue to merit the protections assured by the leasing plan in the 1998 ROD. The 1998 IAP/EIS and ROD were the results of a substantial and collaborative effort by the BLM; federal, state, and local resource and regulatory agencies; federally recognized Tribes; and residents in local affected communities. The BLM determined at that time that the surface resources in the Teshekpuk Lake Special Area and the Colville River Special Area deserved special protections.

The Draft EIS lacks new or updated biological, subsistence or technological information to support any decrease in protections for those areas. The Preferred Alternative's proposal to open additional lands for leasing within the Northeast Planning Area, remove current No Surface Activity restrictions and adopt new performance-based mitigation measures presents a high risk to the important surface resources and to subsistence users in North Slope communities. We believe that the BLM can meet the stated Purpose and Need by offering lands that are already available for leasing within the Northeast and Northwest planning areas and optimizing oil and gas exploration, development and production through the judicious use of revised performance-based stipulations and ROPs.

Consequently, EPA recommends that the BLM develop and analyze a modified Preferred Alternative in the Final IAP/EIS (Final EIS) that retains the current leasing acreage and surface activity restrictions described in the No Action Alternative (Alternative A) and includes revised stipulations and ROPs that are patterned after the performance-based mitigation measures included in Alternative B. This modified Alternative would provide environmental protections for the Planning Area, including lands within the Teshekpuk Lake Special Area and the Colville River Special Area, and facilitate sustainable subsistence use of resources within the Planning Area.

EPA is concerned that the proposed Preferred Alternative could have disproportionate adverse environmental, social and health effects on minority populations in Alaska. We are also concerned that effective consultation and collaboration with Tribes and meaningful public involvement during development of the Draft EIS, especially within local affected communities, have not yet been completed, as required by NEPA, Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations) and Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments). EPA recommends that the BLM take the time while developing the Final EIS and ROD to further engage Tribes and residents in affected communities; discuss their comments, issues and concerns; collaborate;

and seek consensus for a revised plan that balances oil exploration and development with fish and wildlife, cultural and subsistence needs.

In summary, EPA recommends that the BLM develop and evaluate a modified Preferred Alternative that keeps lands closed or under No Surface Activity restrictions as specified in Alternative A and adopts a revised set of performance-based stipulations and ROPs. The effective use of lease stipulations and ROPs that provide flexibility along with adequate environmental protections and mitigation would optimize the development of oil and gas resources on lands presently open for development, provide for enhanced energy security and protect the valuable surface resources in the entire Planning Area. We believe this alternative would meet the Purpose and Need presented in the Draft EIS and achieve a balance between oil and gas exploration and development activities and the protection of valuable biological, cultural and subsistence resources, consistent with Presidential and Congressional directives and implementing regulations for NEPA.

Based on our review and evaluation of the Draft EIS, EPA has assigned a rating of EO-2 (Environmental Objections - Insufficient Information) to the Preferred Alternative (Alternative B). This rating was determined on the basis of the potential adverse environmental impacts associated with the Preferred Alternative and the adequacy of mitigation measures. EPA has enclosed written comments that describe our substantive issues and concerns, which support our rating (Enclosure 1). A copy of the EPA rating system used in conducting our environmental review is attached (Enclosure 2).

EPA is committed to working with the BLM during the development of the Final EIS and ROD. We appreciate the opportunity to provide comments on the Draft EIS. Should you have any questions regarding our comments, please contact me at (206) 553-1272. Please also feel free to contact Colleen Burgh in our Alaska Operations Office at (907) 271-1481.

Sincerely,

Michelle Pirzadeh, Director
Office of Ecosystems and Communities

Enclosures

cc: Susan Childs, BLM Project Manager

March 3, 2005

Reply To Attn Of: ETPA-088 Ref: 97-013-BLM

Henri Bisson, State Director
U.S. Department of the Interior
Bureau of Land Management
Alaska State Office
222 W. 7th Avenue, #13
Anchorage, AK 99513-7599

Dear Mr. Bisson:

The U.S. Environmental Protection Agency (EPA) has reviewed the Final Amended Integrated Activity Plan/Environmental Impact Statement (Final EIS) for the Northeast National Petroleum Reserve-Alaska (NE NPR-A) (CEQ No. 050027) in accordance with our

responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

In our September 9, 2004 comment letter on the draft EIS, we assigned an EO-2 (Environmental Objections - Insufficient Information) rating to the Preferred Alternative. In our letter, we concluded that the Preferred Alternative is likely to cause significant adverse impacts to fish and wildlife resources and habitat areas (including wetlands and aquatic habitat). Specifically, EPA raised the following objections in our comments on the Draft EIS: (1) lack of information that shows the necessity of leasing sensitive environmental areas including wetlands in order to meet Purpose and Need, (2) adoption of unproven performance-based mitigation measures in lieu of No Surface Activity restrictions, and (3) lack of meaningful engagement with Tribes and residents in affected communities. The Final EIS does not address these objections.

The new proposed Preferred Alternative identified in the Final EIS includes a management plan that opens up the critical habitat areas discussed above to leasing, and subsequently to oil and gas exploration, development, and production. This alternative presents additional environmental risks over the Preferred Alternative proposed in the Draft EIS.

The rationale in the Final EIS does not support the choice of the new proposed Preferred Alternative, which relies upon experimental and unproven stipulations and ROPs (Recommended Operating Procedures) as performance-based mitigation measures. Mitigation measures and management techniques should have a proven track record before we rely on them to protect the environmentally sensitive areas north of Teshekpuk Lake. The potential for impacts could be significantly reduced by gradually phasing in the leases in environmentally sensitive areas after the effectiveness of stipulations and ROPs have been demonstrated in less sensitive areas.

In recognition of the commitment in the Final EIS to prepare additional NEPA documents, EPA believes that EISs are appropriate for future development of the leases. Subsequent EISs are the appropriate tool to evaluate the performance of the stipulations and ROPs and their ability to protect sensitive environmental areas. Due to potential environmental impacts summarized above we support the need identified in the Final EIS for an adaptive management program. This program could be implemented through the EIS development, which would involve concerned stakeholders. We would welcome the opportunity to meet with you and discuss these recommendations. Please contact me at (206) 553-1272 if you have comments or questions.

Sincerely,

/S/

Michelle Pirzadeh, Director
Office of Ecosystems, Tribal and Public Affairs

Enclosure 2

U.S. Environmental Protection Agency
Detailed Comments on the
Northeast National Petroleum Reserve-Alaska
Draft Supplemental IAP/EIS

Wetlands and Floodplains

[8.001] Section 4.7.7.6, Section 4.9.6, and Section 4.10.6 refer the reader to the sections for soil, water, and vegetation, which offers the conclusion that these biological resource areas can be classified as having the function and value of wetlands and floodplains. While wetlands are comprised of soils, vegetation and water, only in combination do these elements form wetlands and perform specific wetland functions. Given that at least 95% of the Planning Area is classified as wetlands, EPA believes that this section of the DSEIS should address the specific cumulative effects on wetland functions for the wetland subclasses identified in Table 3.3-A.

The National Research Council (Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope, 2003) found relatively little progress has been made on restoring existing sites affected by gravel fill, citing that only about 1% of the roughly 9,225 acres of tundra habitat covered by gravel has been rehabilitated either naturally or through revegetation efforts. The Council further found it unlikely that most disturbed habitat on the North Slope will actually be restored unless current constraints change because the obligation to restore abandoned sites is unclear and because financial capacity to do so is uncertain. Overall long-term loss of wetland functions would be expected as recovery time estimates in the DSEIS for soils and vegetation following abandonment of oil and gas activities range from decades to hundreds of years. **[8.002]** EPA believes that overall wetland function loss for each alternative should be considered irreversible and irretrievable because of the extended timeframe estimated for recovery. **[8.003]** EPA recommends that the DSEIS clarify the current success level of rehabilitation and how restoration of wetland functions will improve through the performance-based stipulations and ROPs.

Specific Comments on Performance-Based Stipulations and ROPs

In addition to the detailed comments included in EPA's September, 2004, letter, EPA has the following comments regarding performance-based stipulations and ROPs.

Water Use For Permitted Activities

ROP B-2: Allows up to 100% water withdrawal from any lake with no fish present. It is not clear if current Stipulation 20 would allow the same level of withdrawal. ROP B-2 lacks the requirement found in Stipulation 20 that water may be withdrawn from lakes (less than 7 feet deep) that lack a connection to, or are not subject to seasonal flooding by, a fish-bearing stream. The lack of fish presence required by ROP B-2 would not adequately protect aquatic habitat that may serve as seasonal fish habitat.

[8.004] Withdrawal of up to 100% would also have adverse affects on emergent and aquatic vegetation, invertebrate communities, waterfowl habitat, and wetlands. EPA believes that, as written, ROP B-2 is not equally effective in providing the level of protection as Stipulation 20. EPA recommends that BLM require the lessee to demonstrate that no seasonal flooding by, or

connection to, a fish-bearing stream occur, and that no adverse affects to aquatic vegetation, invertebrate communities, waterfowl habitat, and wetlands will occur.

Winter Overland Moves and Seismic Work

ROP C-2: ROP C-2a is subjective by not defining what frost and snow cover depths are sufficient to protect the tundra in comparison to Stipulation 24i (frost of underlying mineral soil to 12 inches and snow cover to 6 inches). Accordingly, EPA believes that impacts to tundra wetlands and aquatic resources are more likely to result from ROP C-2 since, as written, ROP C-2 is not equally effective in providing the level of protection as Stipulation 24i. **[8.005]** EPA recommends that BLM discuss the current information regarding winter tundra travel and the minimum standards recognized by tundra scientists, if applicable. If current data supports minimum depths, EPA believes these minimums should be reflected in this ROP. (Also see EPA September 9, 2004, comments).

Facility Design and Construction

ROP E-1: As proposed, Alternatives B, C, or D allow for permanent roads connecting to a road system or docks outside the Planning Area. Currently, Stipulation 48 prohibits such roads, with minimal exceptions. The DSEIS assumes that all future activities in the NE NPR-A would follow the “roadless” example of Alpine and Badami (Section 4.2.1.2.II.F.5). EPA believes that the increased lease acreages available in the northern portion of the Planning Area under Alternatives B, C, and D and the reported high oil potential (Map 3-3), increase the probability that future developments may seek road connections from the northern portion of the Planning Area to outside of the Planning Area. **[8.006]** EPA recommends that the cumulative impact assessment consider as reasonably foreseeable that one or more developments may construct a road connection outside of the Planning Area and/or that the State of Alaska has an interest in developing a transportation project connecting the Planning Area to the existing road system outside the Planning Area (Northwest Area Transportation Plan, ADOT&PF, 2004). Alternative A Stipulation 48 provides substantially more protection than Alternatives B, C, or D ROP E-1 for wetlands and aquatic resources by prohibiting permanent roads connecting to a road system or docks outside the Planning Area. EPA recommends that the prohibition for permanent roads in Stipulation 48 be included in ROP E-1.

ROP E-6: Alternative A Stipulation 42 requires bridges rather than culverts be used for any allowed road crossing on all major rivers while Alternative B, C, and D ROP E-6 notes that bridges rather than culverts are the preferred method. As such, ROP E-6 is not equally protective as Stipulation 42 and would allow for substantially more impacts to aquatic resources and water quality. EPA recommends that ROP E-6 be revised to require bridges, rather than culverts, be constructed.

ROP E-8: Designing and constructing gravel mine sites within active flood plains appears to raise issues with Executive Orders 11988 or 11990. Impacts to wetlands, water quality, and aquatic resources will be greater under Alternative B, C, and D ROP E-8 than Alternative A Stipulation 40, which generally prohibits gravel mine sites within the active floodplains. EPA recommends that BLM retain the requirement that gravel mine sites be designed and constructed to function as water reservoirs for future use, but that citing of mine sites in floodplains be prohibited unless no feasible and prudent alternative exists.

ROP E-12: EPA recommends that key wetland types to avoid identified in Alternative A Stipulation 46 should be included in ROP E-12. As written, ROP E-12 requires only mapping and does not identify the key wetland types to avoid when developing facilities, and does not

provide the level of protection for wetlands and aquatic resources of Stipulation 46. EPA believes that BLM should include the requirement to identify and avoid key wetland types.

Lease Stipulations That Apply to Biologically Sensitive Areas

K-3: Alternative A Stipulation 31 potentially provides more protection to sensitive biological and aquatic resources of Teshekpuk Lake and nearby lands than Lease Stipulation K-3 for Alternatives B and C because no permanent oil and gas facilities are allowed. Lease Stipulation K-3 for Alternative D would be more protective than Lease Stipulation K-3 for Alternatives B and C since approximately 211,000 acres of Teshekpuk Lake would be deferred from leasing; however, it is also uncertain how long the deferral from leasing would be in effect. **[8.007] EPA recommends that BLM identify the timeframe for deferral.**

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements Definitions and Follow-Up Action*

Environmental Impact of the Action

LO – Lack of Objections

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC – Environmental Concerns

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO – Environmental Objections

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU – Environmentally Unsatisfactory

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ). Adequacy of the Impact Statement

Category 1 – Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 – Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 – Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

[Response to 8.001]

Cumulative impacts to specific wetland subclasses will vary depending on locations of future exploration and development. Development will likely occur in drier and higher terrains which will lessen impacts to some wetlands and produce greater impacts to others. It is preferred to treat wetlands as a whole, given the uncertainty of which classes will be impacted in the future.

[Response to 8.002]

Changes in plant communities resulting from dust or snowdrift accumulations or the formation and draining of impoundments would not be considered irreversible. However, the burial of vegetation under gravel fill could be considered an irretrievable commitment of vegetation resources, as the potential recovery of vegetation on these pads could take 25 to 30 years or more (McKendrick 1997, 2000).

[Response to 8.003]

"The oil industry and the regulatory agencies have made strides in developing techniques for rehabilitating some disturbed habitats. The most difficult areas to reclaim include 9,225 acres covered by gravel roads and pads, some of which are still in use. Only about 1% of that area has been rehabilitated. State, Federal, and local government agencies have largely deferred

decisions regarding the nature and extent of restoration (with the exception of well-plugging and abandonment procedures). The lack of clear state or Federal performance criteria, standards, and monitoring methods governing restoration is partly to blame for the lack of significant progress in restoring disturbed sites on the North Slope. " (NRC,2003)

Table 2-2 provides a comparison between the stipulations from the 1998 ROD for the NPR-A NE IAP and the stipulations and ROPs proposed in the supplemental NE NPR-A IAP. Lease Stipulation G-1 requires "Upon abandonment or expiration of the lease, all oil and gas-related facilities shall be removed and sites rehabilitated to as near the original condition as practicable, subject to the review of the AO. It is presumed that this lease stipulation will enhance restoration of wetland functions over previous rehabilitation efforts.

[Response to 8.004]

The BLM has clarified the text of its assessment of the effectiveness of Stipulation 20 in Alternative A and ROP B-2 in the action alternatives. The Bureau considers the currently identified Requirements/Standards satisfy the objectives of the ROP B-2, i.e., to "Maintain natural hydrologic regimes in soils surrounding lakes and ponds, and maintain populations of, and adequate habitat for, fish and invertebrates, and waterfowl."

[Response to 8.005]

The BLM maintains that the performance-based requirement of C-2 provides equal protection to that of Stipulation 24(i). The Bureau has for some years been contributing to the knowledge base regarding the impacts of overland moves and seismic work. Appropriate standards of snow depth and freeze-down vary and are dependent upon local climate conditions.

[Response to 8.006]

The BLM considers such road projects as speculative. (See the discussion under the heading "Speculative Developments" in the Cumulative Impact analysis subsection of Chapter 4).

[Response to 8.007]

The BLM in the Final IAP/EIS has clarified its intent regarding leasing under the lake. Rather than state that the deferral would be indefinite, the Final IAP/EIS states that the lands under Teshekpuk Lake and its islands would not be available for oil and gas leasing under the Preferred Alternative.

COMMUNICATION NUMBER 11**From Iñupiat Community of the Arctic Slope****Price Leavitt, Sr., Executive Director, speaker at Barrow Public Meeting September 24, 2007**

Hi, my name is Price Leavitt, I'm the Executive Director for the Iñupiat Community of the Arctic Slope. I didn't find out about this meeting until this morning, but I, you know, made comments on behalf of ICAS (ph). The Iñupiat Community of the Arctic Slope, as a region -- as a regional recognized tribal government has historically been responsible to protect its environment and subsistence, culture on behalf of its members. ICAS stands firmly with the North Slope Borough's decisions in the guaranty of strong protection on the onshore and offshore subsistence culture and co-management of natural resources. We want to reassume our position in identifying and communicating the important concerns of the North Slope communities related to oil and gas development. Northeast NPRA area is looked upon the Iñupiat as a traditional subsistence use area and traditional knowledge information must have way to protect its natural resources and wildlife.

[11.001] There was a recent documentation of subsistence use and wildlife areas completed by the Nature Conservancy with Wainwright and -- which was completed recently this summer. ICAS will begin work with the University of Fairbanks to collect traditional knowledge information that can be used in the plight into the EIS public hearings in the future. It will be a two to three year project and hopefully we will begin the early part of 2008 under the National Science Foundation grant. During the latter part of this year, ICAS will begin a comprehensive community conservation plan to identify subsistence use areas and wildlife, similar to Wainwright's traditional use area conservation plan and this step will help us formulate local policies along with federal and state agencies to have some kind of co-management plan to protect the remaining vital hunting grounds and animals of our land.

I wanted to provide some talking points on the new plan. Despite overwhelming opposition from scientists, local communities, and general public, the Bush Administration has been trying to lease the Teshekpuk Lake area to the oil industry for years. By not selecting a preferred alternative, BLM is trying to hide its true agenda and this should fool anyone. There is no point in undertaking this long and expensive agency process but to expand oil drilling in the Teshekpuk Lake area. The Teshekpuk Lake area is one of the most important wetlands in the entire Arctic and there is neither need nor justification to open this part of the vast reserve to oil development. Until now, Congress and three Secretaries of the Interior have deemed the Teshekpuk Lake special area worthy of special protection. Even former Secretary of the Interior, James Watts, recognized the biological and cultural importance of the Teshekpuk Lake area. BLM's complicated leasing package of no service occupancy zone and other restrictions will result in the fragmentation of this core habitat area by roads, pipelines, air strips, gravel mines, drilling pads, and staging facilities and other oil field infrastructure. In the nine years since the release of the original Northeast 1998 Record of Decision, we have accumulated additional information and analysis on the public health risk, climate change and cumulative impacts that require BLM to be more restrictive and protective in this plan, not less.

Three point eight million acres of the NPRA are already under lease, but there is not one well in production. It is unnecessary for the Department to continue its aggressive push to lease new area. There are many environmental organizations expressing opposition or major concerns to protect the critical molting and calving areas. From the Native community there is strong opposition from the North Slope Borough Association of Village Presidents in the Yukon-Kuskokwim Delta, the community of Nuiqsut, and many individuals.

Government agencies registering strong concern included U.S. Fish and Wildlife Service and Environmental Protection Agency. ICAS is voicing its concerns to protect what is left of its subsistence culture that has been negatively affected by the continuing lease sales consistently carried out by the federal government's quest to satisfy the increasing oil and gas demands of America. We want a guarantee that safe and sound environmental studies are analyzed and the destruction of the last traditional threshold of our people should be avoided at all costs. The North Slope of Alaska is our nation's only Arctic ecosystem. In all cases, whenever exploration and development proceed, these activities must be carried out under strict environmental standards including those related to operations, clean up, and restoration. Better precautionary guidelines should be followed by all federal, state and oil industries in decision making processes and any proposed projects that occur in the North Slope region. Oil development can occur in NPRA but some places are too sensitive and significant for drilling. The Teshekpuk Lake is one of those areas. Development near Teshekpuk Lake would disturb tens of thousands of vulnerable molting geese, pregnant caribou cows, and newborn caribou calves. It should impact -- it could impact threatened spectacle eiders and rare yellow billed loons.

In the face of the rapidly changing climate in the Arctic, we must protect the Teshekpuk Lake area to keep wildlife, the time and space, to adapt to the changing conditions. Drilling near Teshekpuk will not solve America's energy problems and will only add to emissions of the greenhouse gases that cause global warming. The 45,000 animal Teshekpuk Lake caribou herd is especially important as a subsistence resource for the North Slope residents. People in that seven communities rely on these caribou. Many of the Barrow residents have cabins around Teshekpuk Lake. The bottom line, the BLM should not use any land north or east of Teshekpuk Lake. Thank you.

[Response to 11.001]

The BLM is aware of the work done by the Nature Conservancy and the Wainwright Traditional Council, and looks forward to the release of this information. Unfortunately, this information has not been released within the timeframe of the current planning process.

COMMUNICATION NUMBER 12
From Alaska Eskimo Whaling Commission
Harry Brower, Chairman

November 6, 2007

Via Facsimile: 888-907-3677

Thomas P. Lonnie
State Director
Bureau of Land Management
ENSR Project Office
1835 South Bragaw Street
Suite 490
Anchorage, AK 99508

Re: COMMENTS ON DRAFT SUPPLEMENTAL IAP/EIS FOR NORTHEAST NPR-A

Dear Mr. Ducker:

The Alaska Eskimo Whaling Commission appreciates this opportunity to comment on BLM's Supplemental IAP/EIS for Northeast NPR-A.

If you have any questions, please call me at my office at 907-852-0350.

Sincerely,

Harry Brower

Chairman

cc: Senator Ted Stevens
Senator Lisa Murkowski
Congressman Don Young
Mayor Edward Itta
AEWC Commissioners

COMMENTS OF THE ALASKA ESKIMO WHALING COMMISSION

**ON THE U.S. BUREAU OF LAND MANAGEMENT'S SUPPLEMENTAL ENVIRONMENTAL
IMPACT STATEMENT FOR NORTHEAST NPR-A**

November 6, 2007

Research in circumpolar Inuit societies suggests that social pathology and related health problems, which are common across the Arctic, relate directly to the rapid socio-cultural changes that have occurred over the same time period (Bjerregaard and Young 2004; Curtis and Kvernmo 2005; Goldsmith 2004).

INTRODUCTION & SUMMARY

The Alaska Eskimo Whaling Commission (AEWC) holds as its mission the preservation of our Native subsistence culture through our continued ability to harvest our traditional foods to sustain and nourish our communities. We are concerned about the development of oil and gas in the National Petroleum Reserve - Alaska (NPR-A) because of the potential harmful impacts to our subsistence communities from displacement of important subsistence fish and game, especially in the Teshekpuk Lake Special Area (TLSA).

As a general matter, the AEWC supports onshore oil and gas development so long as it is conducted with the greatest degree of sensitivity to, and respect for, existing uses of public lands for subsistence hunting and subsistence resource habitat. However, when environmental analysis establishes that proposed industrial activities are likely to jeopardize the success of our terrestrial hunting and fishing (which provides our staple subsistence foods during whaling), we must oppose those activities unless they can be mitigated to preserve hunting opportunities and the associated physical and mental health of our communities.

The AEWC therefore must oppose the opening of additional NPR-A lands for oil and gas development, as the Bureau of Land Management (BLM) proposes in its Supplemental Environmental Impact Statement (SEIS) for Northeast NPR-A. Only the No-Action Alternative excludes the leasing of lands in the TLSA, which is critical to our communities as sensitive, productive habitat for our fish and game resources. If our wild subsistence resources are displaced by oil and gas exploration and development in NPR-A, the people of the North Slope will be forced to leave their homes and resort to welfare or face starvation.

Just as people can die, so can communities and cultures. Indigenous subsistence communities do not survive the loss of their subsistence resources. BLM's assessment of impacts to subsistence resources from additional leasing in NPR-A indicates that the displacement of subsistence fish and game could cause a public health crisis in our communities, including an escalation of pathology such as increased instances domestic abuse and suicide, along with a rise in metabolic disease and other physical health problems from a new, necessary reliance on store-bought foods. From our perspective, BLM is preparing to authorize activities that will contribute to the rapid decline of our communities, and possibly jeopardize our culture and our survival.

BLM's proposed plans would open the vital habitat of wild subsistence fish and game resources to oil and gas development, exposing those resources to profound disruption from industrial encroachment and threatening the use of those areas for subsistence hunting. The AEWC believes the analysis in the SEIS, like the Draft Environmental Impact Statement that preceded it, does not support the opening of new areas of the Northeast NPR-A to oil and gas leasing. Rather, the SEIS supports BLM's adoption of "Alternative A," its "no action" alternative.

I. FAILURE TO ADOPT ALTERNATIVE A WOULD VIOLATE FEDERAL LAW AND POLICY.

Congress directed BLM to prioritize biological and habitat values of public lands even as the agency plans the exploration and development of oil and gas from those lands. Three statutes give BLM its primary direction. The Federal Land Policy and Management Act (FLPMA), requires BLM to foster "multiple use and sustained yield" on the nation's public lands. The Naval Petroleum Reserve Production Act (NPRPA) directs BLM to maximize the protection of surface values of public lands, especially with respect to "any exploration within the...Teshekpuk Lake area...containing any significant subsistence, recreational, fish and

wildlife..." Finally, Congress made clear its recognition of the importance of subsistence resources when it enacted the Alaska National Interest Lands Conservation Act (ANILCA), declaring that

The continuation of the opportunity for subsistence uses by rural residents of Alaska . . . is essential to Native physical, economic, traditional, and cultural existence.

The situation in Alaska is unique in that, in most cases, no practical alternative means are available to replace the food supplies and other items gathered from fish and wildlife which supply rural residents dependent on subsistence uses.

16 USC 3111 (1),(2), emphasis supplied. Thus it is incumbent upon BLM to manage energy development on public lands so that surface values, particularly subsistence hunting and the habitat of subsistence resource fish and game, are protected.

[12.001] A. If BLM Leases Additional Lands in NPRA, It Will Fail to Meet the Requirement of the Naval Petroleum Reserve Production Act to Protect the Surface Values of Public Lands Critical to Subsistence Use.

Congress, in NPRPA, requires BLM to "assure maximum protection of surface values of the Teshekpuk Lake area, and other areas designated by the Secretary of the Interior containing any significant subsistence...value..." 42 USC §6504(b). However, in violation of this mandate, BLM proposes to expand oil and gas exploration and development in NPRA, beyond the limits already set in the original 1998 Integrated Activity Plan and the associated Environmental Impact Statement (IAP/EIS) and open up the Teshekpuk Lake Special Area (TLSA) to development.

BLM recommends Alternative D, which BLM's own analysis shows would inflict potentially severe adverse effects to wildlife and wildlife habitat on top of that already expected from the No-Action Alternative. See eg., Section 4.3.7-a.2, potential impacts to freshwater, anadromous, and amphidromous fish include loss of overwintering habitat, degradation or blockage of migratory corridors or feeding grounds; Section 4.3.9-a.2, permanent loss of terrestrial mammal habitat, reduced productivity of the Teshekpuk Lake caribou herd; Section 4.3.10-b.1, permanent loss of habitat for endangered spectacled and Steller's eiders; Section 4.3.12, development along the coast could change the distribution of caribou in the summer, when the greatest numbers are harvested; habitat destruction would locally reduce or displace subsistence species; it is likely that impacts on wildlife and habitat will lead to permanent irreversible losses of caribou and other terrestrial mammals.

If BLM were to take action that would inflict such damage on our subsistence resources and lands, in the face of an express direction from Congress to protect that use and those areas, BLM does so in violation of the NPRPA. BLM therefore must choose the No-Action Alternative if it hopes to comply with this statute.

[12.002] B. If BLM Leases Additional Lands in NPRA, it Will Fail to Meet the Requirement of the Federal Lands Policy and Management Act to Provide for Multiple Use and to Protect the Environmental Values of Public Lands.

FLPMA requires that BLM manage public lands on the basis of multiple use and sustained yield unless otherwise specified by law. 43 USC §1701(7). The agency also must honor Congress's direction to manage public lands in a manner "that will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife..." 43 USC §1701(8). BLM disregards this mandate by proposing to expand oil and gas

development in the TLSA-an area Congress specifically singled out for protection in the NPRPA.

Congress's direction to BLM to foster multiple use and protect certain public lands in their natural condition is directly at odds with BLM's proposal to open the TLSA to oil and gas development. In fact, as BLM shows in its SEIS, the adverse effects of industrial activity in that sensitive biological area could shut down or greatly curtail subsistence use of the TLSA, leaving only one use-oil and gas extraction. [12.003] Furthermore, FLPMA requires that BLM manage public lands on the basis of multiple use and sustained yield unless otherwise specified by law. The NPRPA specifically refers to the TLSA as an area to be protected; therefore, when reading FLPMA and the NPRPA together, a reasonable interpretation is that Congress has specified only one use of the TLSA-subsistence use. In light of the above, oil and gas development in the TLSA must yield.

C. [12.004] If BLM Leases Additional Lands in NPRPA, it Will Violate the Requirement of the Alaska National Interest Lands Conservation Act to Set a Priority for Subsistence Uses of Public Lands.

Under ANILCA, BLM must give priority to subsistence use on Alaska's public lands. 16 USC 3111, 3114 (2000). In ANILCA, Congress expressly stated its intent that, in land use decisions, the BLM must give priority to rural Alaskans-the Native subsistence communities of the North Slope, who are dependent on fish and wildlife for food and other supplies. Congress reinforced its intent to protect and preserve subsistence uses by setting specific bounds on the range of BLM's discretion to limit subsistence uses on public lands in Alaska. Any such decision must be "consistent with sound management principles" and must include "reasonable steps . . . to minimize adverse impacts upon subsistence uses and resources." 16 U.S.C. 3120(a).

Congress set these limitations on BLM's authority in explicit recognition of the fact that people in rural Alaska have "no practical alternative means" to obtain food and other supplies if their subsistence resources are lost. 16 USC 3111(2) (2000). Thus, Congress tasked BLM with ensuring that rural Alaskans dependent upon subsistence for their livelihood will be able to continue their subsistence activities in a way that maintains their livelihood if BLM permits alternate uses, such as oil and gas development, on lands used for subsistence.

Far from following federal policy set forth in ANILCA to prioritize our irreplaceable subsistence resources, BLM has chosen to recommend the opening of the TLSA to oil and gas development. This is a derogation of BLM's obligations under ANILCA. Only a decision to exclude the TLSA from oil and gas development would carry out ANILCA's policy to prioritize subsistence..

II. BLM'S ANALYSIS OF PUBLIC HEALTH IMPACTS COMPELS THE AGENCY'S SELECTION OF ALTERNATIVE A, THE "NO-ACTION" ALTERNATIVE.

A. BLM Must Choose the No Action Alternative, Given Its Conclusion That the Predicted Loss of Subsistence Resources Will Have a Detrimental Effect on Public Health in Native Communities.

According to BLM, the adverse impacts of industrial activities under Alternatives B, C, and D on subsistence and sociocultural systems directly corresponds to the adverse impacts of those alternatives on public health in our arctic subsistence communities. In other words, the assurance of subsistence hunting opportunities is what sustains public health in the areas that BLM has targeted for oil and gas leasing. SEIS Section 4.3.19.2. In light of this conclusion and given the biological sensitivity and importance of the TLSA to our subsistence livelihood, BLM

must select Alternative A, and avoid leasing our most productive and critical terrestrial subsistence hunting area.

In the SEIS, BLM states that impacts to subsistence under Alternative D will include a larger area open for year-round occupation and development, which would include ecologically sensitive areas such as caribou calving and insect relief areas, goose molting areas, and areas used by denning polar bears. Habitat loss and degradation would be greater than under the No-Action alternative. Increases in predators that accompany human activities would result in an increase in predation of molting geese, eggs, and fledglings. Changes in overwintering and seasonal fish habitat caused by oil development could harm fish populations. BLM concludes that "[o]il and gas activities would inhibit subsistence users from harvesting in their traditional use areas, including areas previously unavailable for leasing." SEIS Section 4.6.12.

The profound impacts of even the No-Action Alternative-let alone the preferred Alternative-on subsistence will lead to multiple public health problems. In its section on Social Pathology, BLM notes that anxiety in our villages over the potential loss of our traditional diet exacerbates social pathological health outcomes, including drug and alcohol abuse, increased domestic violence, higher rates of suicide, and a higher injury rate. SEIS Section 4.6.19.2. BLM goes on to state that "data indicate a strong link between the integrity of subsistence and sociocultural traditions and health," and that "to the extent that oil and gas development have eliminated previously culturally and practically important areas from use, social pathology may have been exacerbated." *Id.*

Even as it proposes to develop oil and gas in our most biologically sensitive hunting areas, BLM reports the many benefits of a subsistence diet and lifestyle. Subsistence hunting alleviates food insecurity, another contributor to social pathology. According to BLM, food insecurity and hunger are considered to be severe health problems even before malnutrition or starvation occur, yet BLM is the proponent of Alternative D, under which BLM states that food insecurity and hunger would be likely to increase if significant decreases in harvest success occur. *Id.*

In addition to the benefits of a subsistence lifestyle on abating social pathologies as described above, subsistence foods also provide important physiological functions, including helping to keep Alaska Native rates of metabolic disease such as diabetes and hypertension very low in relation to that of the rest of the country. That said, as subsistence foods improve our health, store-bought foods deteriorate it. As modern influences have accompanied industry to our communities, so has a western diet made its way to our society. With it has come a rapid increase in diabetes. So while BLM describes the positive contributions of a subsistence traditional diet on both our social systems and our physical health, the agency documents a proportionate downturn in public health that is associated with the coming of industry to our communities and the threat of the displacement of our subsistence resources and hunting areas. *Id.*

The AEWC can attest that the intensity of the industrial pressure on subsistence food resources and hunting areas is compounded by increasing oil and gas activities offshore. Northstar, a gravel island oil development project in the Beaufort Sea, has displaced Nuiqsut bowhead whale hunters from traditional hunting waters near that project. This year, a federal court halted one major oil company's exploratory drilling plans in part because of the threat to our subsistence bowhead whaling.

Onshore, Nuiqsut is surrounded by oil pipelines from projects spidering out from Prudhoe Bay and closing in from the Alpine development project to the west of the village. Many terrestrial hunting areas are now unused by that community, who are wary of hunting around industrial

facilities. Those areas are lost opportunities, and represent a place where the community can no longer seek critical food resources.

BLM's proposed Alternative D will compound the problem of disappearing hunting areas, even with its "mitigation" of limited surface facilities north of Teshekpuk Lake. If BLM authorizes development of the TLSA, the public health problems that BLM reports in its SEIS are likely to escalate.

B. BLM's Proposed Mitigation Strategies for Public Health Impacts are Profoundly Inadequate; the Best "Mitigation Strategy" for Public Health is to Protect Our Traditional Hunting Areas - especially the Teshekpuk Lake Special Area - from Oil and Gas Development.

[12.005] BLM has set forth a list of example public health mitigation strategies that would be extremely ineffective in offsetting the impacts of the public health and social crises that would ensue if subsistence resources and hunting suffered in the manner that BLM predicts in other sections of the SEIS. Among the strategies, BLM lists proposals to pay hunters to hunt for traditional food for the community, build community freezers to make subsistence food supplies last longer, and give local grocery stores incentives to stock better food choices. See generally Appendix G.

First, the notion of paying a hunter to provide for his community runs counter to the very nature of subsistence. We do not need an incentive to hunt except that reward that comes from bringing subsistence food to our families and villages. Fundamentally, our community's social values could never encompass financial reward in exchange for providing for the community. We provide traditional foods our families and villages because at the heart of our subsistence livelihood are the provision for our communities, the sharing of food and other materials from our subsistence animals, and the hard work of preparing for the season's hunt. To suggest paying a wage to a subsistence hunter for his hunting activities in support of his community demonstrates that BLM fails in a very basic way to understand the nature of subsistence and its meaning to our people not only as a source of food but as a source of our identity individually and collectively.

[12.006] Next, that BLM would endorse or even suggest that a different, "healthier" selection of store-bought foods could replace our Native foods is alarming. As Congress recognized in its policy statements in ANILCA, our Native foods are irreplaceable. We cannot, and will not, accept substitute foods as mitigation. Also, a western "healthy" diet depends on a balance of fiber, fruit vegetables for certain vitamins. We generally do not eat fruits and vegetables. We obtain those vitamins and nutrients from the oils found our subsistence animals.

Even if we were to consider having to replace our traditional Native foods with store-bought foods, many of our families and elders cannot afford them. The cost of store-bought foods is prohibitive, and so a diet of such food is not even remotely an option for many of our people.

If BLM's proposed expansion of oil and gas leasing in Northeast NPRA could lead to a situation where our subsistence resources and hunting areas are so reduced that we must begin relying on store-bought food, there is no question that BLM should decline to lease in the TLSA, our most critical terrestrial hunting area and sensitive habitat for subsistence fish, birds and game. BLM therefore must select the No-Action Alternative.

CONCLUSION

Based on its own analysis, BLM is not in a position to recommend the opening of additional areas of the Northeast NPRA to oil and gas development. At this time, BLM's focus should be on working with the AEWCC, the North Slope Borough, and state and federal agencies to develop, implement, and evaluate mitigation measures necessary to ensure that development on NPRA lands currently subject to oil and gas leasing does not unreasonably interfere with subsistence uses of the NPRA. The only mitigation strategy that BLM should recommend to counter the adverse effects on public health from the threat of the loss of subsistence resources is the prevention of the loss of those resources. BLM can only ensure this result by declining to lease additional lands in NPRA, especially the critical subsistence resource land of the Teshekpuk Lake Special Area.

[Response to 12.001]

As noted in Chapter 1 in the subsection entitled "Authority" and in Chapter 2 in the subsection entitled "Formulation of the Alternatives and Mitigation Measures," all four alternatives presented in the Supplemental IAP/EIS meet the requirements of the NPRPA for all activities in the Special Areas to "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." (42 Federal Register 28,723; June 2, 1977).

[Response to 12.002]

The BLM has considered its responsibilities for multiple use management and considers that this Supplemental IAP/EIS provides a reasonable range of alternatives that meet its obligations under FLPMA and other relevant law and regulation. The alternatives present a different mix of protections, including lands withheld from oil and gas leasing, restrictions on permanent and temporary surface occupancy, and other temporal and geographic restrictions to protect resources and the uses of those resources.

[Response to 12.003]

The BLM has considered its responsibilities for multiple use management and considers that this Supplemental IAP/EIS provides a reasonable range of alternatives that meet its obligations under FLPMA and other relevant law and regulation. The alternatives present a different mix of protections, including lands withheld from oil and gas leasing, restrictions on permanent and temporary surface occupancy, and other temporal and geographic restrictions to protect resources and the uses of those resources.

[Response to 12.004]

The BLM has considered its responsibilities for multiple use management and considers that this Supplemental IAP/EIS provides a reasonable range of alternatives that meet its obligations under FLPMA and other relevant law and regulation. The alternatives present a different mix of protections, including lands withheld from oil and gas leasing, restrictions on permanent and temporary surface occupancy, and other temporal and geographic restrictions to protect resources and the uses of those resources. The IAP/EIS includes an analysis of potential impacts to subsistence as required by ANILCA Sec. 810; see Appendix A.

[Response to 12.005]

The strategies presented in Appendix G are provided as examples of measures that have been used elsewhere; some aspects of these measures may be reasonable to consider for adaptation to meet the needs in North Slope communities. BLM does not suggest the adoption of any specific

measure presented in Appendix G. The strategies presented in Appendix G are provided as examples of measures that have been used elsewhere. Appendix G is meant to serve as a starting point for a multi-lateral dialogue among stakeholders regarding the implementation of appropriate and effective measures that could be instituted to mitigate development-specific health effects identified in the EIS.

[Response to 12.006]

The BLM does not intend to suggest that store-bought foods could adequately replace Native foods. The BLM recognizes the tremendous importance of subsistence to the diet, culture, and health of Iñupiat communities (please refer to subsections on "Diabetes, Hypertension, and Associated Metabolic Disorders," "Food Insecurity and Hunger," and "Social Pathology" for a discussion of the potential health effects of impacts to subsistence resources). However, if impacts to subsistence resources were to occur despite mitigation for subsistence resources, it is important to review potential mitigations for the potential public health consequences as well.

COMMUNICATION NUMBER 13**From Arctic Slope Regional Corporation****Richard Glenn, Vice-President of Lands, speaker at Barrow Public Meeting****September 24, 2007**

I'd like to thank BLM for coming to Barrow and I'm glad that not only are you coming here but you are visiting other villages. The idea of going local first and going to those most locally impacted is a good one and I'm glad that you are making the trip to the North Slope communities that are closest to this issue. I'm not a caribou scientist, I'm a caribou eater. But I do have some comments on behalf of Arctic Slope Regional Corporation where I serve as Vice President of Lands and also some personal observations. When 1997 was here and ASRC provided comment for what was to be the Northeast NPRA leasing program, the general statement was to respect the lifestyle of the Iñupiat people and their subsistence needs. To work with the most closely impacted communities, and yet to oppose any set aside designation for any lands and trusting in the permitting process of our North Slope Borough community residents and eventually the -- what would be decided by the BLM in a leasing program. This was some difference between the North Slope Borough's position at the time and while we have a difference, we respect the difference, we still live together, we still represent the same base of people and so this is one of those instances where you find that we give each other some room and respect each others viewpoints.

Our statements are still the same in that set aside lands for a given purpose usually it's well intended but it ends up having a purpose greater than its intended purpose. And we see examples of this in the 1002 area of the Arctic coastal plain, in the gates of the Arctic National Park, and Tukukpuk (ph) lands and other areas around the North Slope where set aside lands have persisted long -- perhaps long beyond their original intent. The most recent example is the critical habitat for spectacled eiders which is just around the line, across the coast in what's called Ledyard Bay, somewhere east of Cape Lisburne and heading toward Point Lay. That said, I'd like to reinforce a couple of comments that some of our community members have stated. [13.001] The one area where I wish you'd take a little bit more of a conservative or protectionist approach is in the area of erosion. Because Cape Howkitch and Cape Simpson are both facing the east without the protection of barrier islands, those two portions of the coast which is just west of this area and also right in the middle of this area under discussion, they're suffering some of the highest erosion rates along the whole Alaskan coast line and they are clearly the highest coastal erosion rates in our region. With that being recognized, whatever estimate you're planning for coastal erosion, I think you should take a look at it and make it a little bit bigger. [13.002] And this would probably go for the edges of Teshekpuk Lake where large fetch (ph) means large waves and increased erosion rates. And as George Edwardson mentioned, one of the Legacy well sites which is kind of a polite name for Navy and Interior leftovers, is already finding itself threatened by increased erosion, the margin of Teshekpuk Lake. So that is one area where I would wish you to take a little bit stronger protectionist measure than you might. Don't assume today's erosion rate will be the same tomorrow, in fact, assume it's going to be increasingly greater.

In addition to a subsistence lifestyle, our North Slope residents depend on a healthy oil and gas industry in our region. And the problem is that oil is not where leases are sold, but the oil is where you find it. And it's for this reason that ASRC has consistently advocated for open leasing in the onshore areas, to the greatest degree possible. We know that our whole North Slope is stippled with Native allotments and traditional use sites, and also covered by biologically important areas for waterfowl, for caribou. This is -- this does not -- this is not limited only to the northeastern part of the Northeastern NPRA. In fact, if you were to ask me, I would say

that our subsistence use of the area has already been -- the area that is heavily used for subsistence has already been leased south of Teshekpuk Lake, east of Teshekpuk Lake, and west of Teshekpuk Lake. And also some of the most biologically important areas have already been leased. I'm talking about the Colville Delta, the Sag River Delta, both important fish and waterfowl habitats, and the Prudhoe, Kuparuk area where the Central Arctic caribou herd is known to exist and has since grown healthily since the development of industry there. We have allowed exploration in these sensitive areas and since we have allowed exploration there, I don't see the reason why we should not allow it here. Recognizing even that that the brant depend on these lakes for molting and the caribou depend on this important corridor on the east side of the lake for transitioning from insect relief areas to calving areas and further south for general forage and disbursement across the North Slope. I should say for the record what I've said in a few public settings and privately since we were visited by Henri Bisson right before he left his position and that is that we were impressed by his methods and his recommended solution for the northeastern part of the Northeastern NPRA. We support the larger lease tracts and the off limits nature of some portions of the area for reasons related to caribou migration or black brant molting. We thought that was a responsible balance and we told him so and we told that to Interior, we've told that to the North Slope Borough Mayor as well, and so it should be set for the record here in public. The science of industry's effect on molting geese and on calving caribou, whether it shows a positive or a negative effect, should be made known and clear -- clearly understood as development of this area is contemplated. And as Price Leavitt mentioned, drilling the Northeast NPRA won't solve America's energy needs, but by holding this criteria to any exploration and development area, you can shut down the oil and gas industry throughout the United States using the same logic. On the other hand, leasing this area just like leasing the rest of NPRA, even though it exists in our culturally important areas, our biologically important areas, offers our community the chance at the only economy that we have. Provided that it's done in a way that has worked with our residents, our Municipality, where community consultation is encouraged, the subsistence resources are protected, we feel that this area north and east of NPRA can be explored for and then once resources are located, questions can be made about its development.

A statement was made earlier that leasing has been taking place in NPRA and yet there's no well in production. And it's precisely this reasoning that says we should lease the areas with the highest hydrocarbon potential. Oil is where you find it, not where the leases take place. Thank you.

[Response to 13.001]

USGS has an ongoing study of coastal erosion that should address questions brought up in the comment. The effects of the absence of barrier islands will be identified. The need for mitigation will be examined taking into account the results of the USGS study.

[Response to 13.002]

USGS has an ongoing study of coastal erosion that should address questions brought up in the comment. The effects of the absence of barrier islands will be identified. The need for mitigation will be examined taking into account the results of the USGS study.

COMMUNICATION NUMBER 14
From Kuukpik Corporation, et al.
Isaac Nukapigak, Kuukpik President, et al.

November 6, 2007

VIA Hand Delivery

NE NPR-A Amendment Planning Team
Bureau of Land Management
Alaska State Office (930)
222 West 7th Avenue
Anchorage, AK 99513-7599
VIA Hand Delivery
Northeast NPR-A Supplemental
IAP/EIS Comments
ENSR Corporation
1835 South Bragaw Street
Anchorage, AK 99508

RE: Comments on the Supplemental Amended

Draft Northeast NPR-A EIS/IAP

Dear Mr. Ducker and ENSR:

I. Introduction:

This is the third letter Kuukpik Corporation, the Native Village of Nuiqsut, the City of Nuiqsut, and the Kuukpikmuit Subsistence Oversight Panel have jointly submitted to the BLM commenting on the BLM's drive to amend the 1998 Northeast National Petroleum Reserve Alaska Record of Decision ("1998 ROD"). Another letter commenting on the BLM's proposed change to the management of this area was also submitted to Department of Interior Secretary Gale Norton. We are not going to belabor points already made in our prior letters. These same basic points have also been made in oral comments during public meetings held in Nuiqsut. Those letters and oral comments are part of the administrative record for the BLM's drive to amend the management of the Northeast NPR-A.¹ Despite our prior comments, BLM systematically underestimates impacts or completely misses impacts in the Northeast NPR-A Draft Supplemental EIS ("Draft SEIS") and in its Alaska National Interests Lands Conservation Act ("ANILCA") Section 810 analysis.

[14.001] One key reason why impacts are systematically underestimated or completely missed by BLM is because BLM builds its analysis in the Draft SEIS on a completely unrealistic roadless development model. This flaw in the Draft SEIS is so fundamental that the impacts analysis throughout the Draft SEIS is completely undermined.

The roadless development model BLM uses in its analysis is laid out in Figure 4-28 of the Draft SEIS. This model looks a lot like the Alpine model proposed by industry in the mid-1990s. Draft SEIS Figure 4-28. That mid-1990s Alpine model (like BLM's model development) was a discrete roadless development with a minimal physical footprint in terms of gravel.² That model also had a minimal indirect footprint in terms of aircraft flying in and out, and vehicles using the road to CD-2.

However, the minimal impact roadless model of the 1990s has been all but discredited by the reality of how Alpine has developed and the high levels of activity that surround it long after activity was projected to decline sharply. Alpine was the first of its kind, and based on the Alpine experience, neither ConocoPhillips Alaska, Inc. ("CPAI"), the operator of Alpine, nor any other operator is going to want to build an Alpine- model oil field in NE NPR-A. **[14.001 cont'd]** Instead, oil companies are going to want to build permanent roads to access their facilities for a variety of reasons explained below. The fact that BLM continues to use an outdated and unrealistic model as its foundation for analyzing the impacts of future development reflects the systematic understating of impacts characteristic of BLM's approach in the Draft EIS, Final EIS, and now the Draft SEIS.

There are a number of reasons why basing analysis in the Draft SEIS on the "Alpine model" does not reflect how development is actually likely to occur in the Northeast NPR-A, and correspondingly, the impacts of that development. To start with, the "roadless" Alpine we see in the Colville River Delta today has little resemblance to that 1990's model. For instance, the Alpine of today exceeds the Alpine model of the mid-1990's in the number of aircraft taking off and landing at the Alpine airstrip. When permitting Alpine, agencies were told that the Alpine airstrip would have at most 40 flights per month during the busiest period of Alpine's construction, with far fewer flights during the operations phase of Alpine. Alpine Development Project: Environmental Evaluation Document, Sept. 1997, ("Alpine EED") p. 2-26. The actual number of flights taking off and landing at Alpine's airstrip is nothing like what was represented during Alpine's permitting. Figure 2.3.6-1 of the Alpine Satellite Development Plan Final EIS shows the use of Alpine's airstrip between May 2000 and February 2002. BLM already has a copy of this figure since BLM was the lead agency for the preparation of this EIS. For ease of reference, we are attaching a copy of this figure to this letter as Document No. 1. From this limited information one can tell that development of the Alpine Central Processing Facility and its satellite at CD-2 required more than 400 round trips in some months. Even after start-up of Alpine and CD-2, over 125 flights per month were necessary. This is many times greater than what was represented as the Alpine model. Despite our repeated requests for flight information that is up to date and that goes back to the construction of Alpine's airfield, CPAI has never provided this information.³ Based on our experience, we have not seen a drop in the number of flights landing at Alpine since February 2002. If anything, the number of flights using the Alpine airstrip has increased with the construction and development of additional Alpine satellites.

[14.002] BLM has made no effort use the benefit of years of actual experience at Alpine to estimate the number of the number of flights necessary to develop and operate its roadless development model. Rather, the Draft SEIS vastly under-estimates the number of flights that would be necessary to develop and operate a roadless facility in the Northeast NPR-A. Page 4-16 of the Draft SEIS explains why. This says that the number of flights used in the Draft SEIS analysis is based on BLM's 2004 projection for the development of "five satellite production pads for Alpine." But wait, that projection was only for the five proposed Alpine satellite production pads.⁴ BLM's projection does not include the number of flights necessary to develop and operate Alpine's wells and, more importantly, to develop and operate Alpine's Central Processing Facility. That doesn't make any sense. In order to predict the number of flights needed to develop and operate a realistic variant of the Alpine model with five satellites, the flights necessary to develop and operate the Alpine facility and its constructed and proposed satellites need to be added together.

It is hard to understand how BLM could so significantly underestimate the number of flights needed to develop and operate another facility that looks like Alpine on paper when BLM had

Figure 2.3.6-1 of the Alpine Satellite Development Plan Final EIS at its fingertips, and when we had already pointed out that the number of flights in and out of Alpine far exceed what we were told to expect when Alpine was just a model (see August 23, 2004 Comment Letter, footnotes 150 and 151). This mistake means that the actual impacts of the development scenario BLM uses in the Draft SEIS will be much greater than what is discussed in the Draft SEIS.

More important than how the Alpine we see today has greater impacts than the mid-1990s model is the difference between the BLM's development scenario and what development will actually look like in the future. We are certain that future development in the Northeast NPR-A will actually look nothing like the mid-1990s Alpine model or the development model discussed in the Draft SEIS. The bridge CPAI seeks to build connecting Alpine to the NPR-A illustrates perfectly how Alpine roadless style developments are not going to be built in the future. CPAI's proposed bridge makes Alpine the hub for development in the NPR-A. Right now the permit CPAI needs to construct its bridge is still being considered by the U.S. Army Corps of Engineers. North Slope Borough approval for the bridge is also necessary. So, a bridge crossing the Colville River is anything but certain. What is certain, though, is that the oil industry's development in the future will maximize the use roads and will minimize reliance on airstrips or roadless facilities.

We already discussed why BLM's roadless model was unrealistic on page 9 of our August 24, 2004 letter commenting on the Draft EIS. That discussion was obviously ignored. Instead of listening to our comments and looking at what is actually happening on the ground and at what development CPAI is proposing, BLM relies on four makeweight justifications why roadless developments are likely in the Northeast NPR-A. Those justifications for clinging to the mid-1990's styled roadless concept are listed on page 4-38 of the Draft SEIS.

The first justification is that "[t]he smaller field sizes predicted for the NPR-A probably could not support the high cost of long, permanent roads." Draft SEIS p. 4-38. At the heart of this first justification is a flawed premise that "smaller fields are predicted for the NPR-A". According to the Draft SEIS:

At least five of the post-1999 exploration wells drilled in the NPR-A have discovered oil and/or gas. The sizes of these discoveries have not been made public, but the operators have indicated that the oil reserves are at least equal to those of the Alpine field.

Draft SEIS p. 4-640. No one in the oil and gas industry considers Alpine's stated 429 million barrel reserve to be a "small field." In fact, Alpine is the third largest field discovered on the North Slope, behind Prudhoe Bay and Kuparuk. It is the largest onshore field discovered in North America in the past 15 or 20 years. Even the impressive stated 429 million barrel reserve for Alpine is a conservative estimate of Alpine's size since Security and Exchange Commission rules require a conservative approach to estimating oil and gas reserves.⁵ Likewise, the Alpine or larger fields that have already been discovered also probably exceed 429 million barrels. Stating that only smaller field sizes are predicted for the NPR-A unreasonably downplays the significance of the sizes of the fields that are actually known to exist.⁶

A second flaw in the BLM's first justification is in its prediction that the fields in the NPR-A will not support the "costs of long, permanent roads." This prediction is contrary to what is actually occurring on the North Slope. For instance, CPAI wants to build a roughly \$100 Million bridge across the Colville River. That CPAI would spend this much on a road bridge connecting Alpine's airfield to the NPR-A underscores that CPAI is betting on future roads in the NPR-A instead of roadless developments. For the cost of that bridge, CPAI could probably construct 100 miles of road (total bridge costs / estimated \$1 Million per mile to construct gravel roads)

reaching into the NPR-A. If the high cost of a bridge across the Colville is not a barrier to the bridge's construction, the costs of roads leading from that bridge will not be a barrier construction either.

The significance of CPAI's bridge in the way that future development will look in the NPR-A cannot be news to BLM since it was the lead agency for the Alpine Satellite Development Plan EIS.⁷ Despite BLM's past experiences with CPAI's plans for Alpine, the Draft SEIS carefully avoids discussion acknowledging that Alpine will become the NPR-A hub if CPAI builds a bridge crossing the Colville River. For example page 4-24 of the Draft SEIS says:

While some satellites, such as those proposed by ConocoPhillips (CD-6 and CD-7), could connect by gravel road to the existing Alpine CPF, we anticipate that development in the planning area would generally not be connected by road to areas outside of NPR-A.⁸

[14.003] But, the likely scenario is actually identified on Draft SEIS page 4-538 which says:

If oil and gas development occurs near the north shore of Teshekpuk Lake, and is connected by roads and a pipeline to the Alpine field, an important subsistence use area used by residents of Nuiqsut, Barrow, and Atkasuk could be avoided by subsistence users.

Correspondingly,

"Increased air and ground traffic could take place at the Alpine field . . ." Id.

Given that BLM also sees that CPAI may connect Alpine to developments in the Northeast NPR-A, we cannot help but wonder why is this the only place in the Draft SEIS we find mention of a road from Alpine to the Teshekpuk Lake area or the use of Alpine as the Northeast NPR-A hub. Having acknowledged the likely scenario that Alpine would be connected by road to a development as far away as the north shore of Teshekpuk Lake, the Draft SEIS needed to analyze and consider this development scenario instead of an unrealistic roadless model.

Another flaw in BLM's first justification for clinging to its roadless development concept is how the cost of long permanent roads is raised in isolation from the costs of not building roads. Roadless facilities depend on supplies brought in by ice roads during the winter. When Alpine was first proposed, it was anticipated that an ice road would be needed every year during construction and then every 3 to 5 years after that. Alpine EED p. 2-24. The reality is that an ice road has been built from Kuparuk to Alpine every year since construction on Alpine began. Therefore, one can expect that an annual ice road would also need to be built to any roadless facility in the Northeast NPR-A.

Ice roads typically cost between \$300,000 and \$400,000 per mile. Permanent gravel roads cost roughly \$1 Million the per mile. We think that when it comes to developing NPR-A, the oil and gas industry will do the simple math: spend \$1 Million per mile once to build a permanent road or spend roughly \$350,000 every year to build an ice road. After only 3 years, the costs of annual ice roads will exceed the cost of a permanent gravel road.⁹ On a purely economic basis, it will cost the oil industry more to not build a road. When the economic savings of a permanent gravel road is coupled with the operational limitations imposed by the ever-shortening period of time when ice roads can be constructed and used each season (Draft SEIS p. 4-23), and the distances between Kuparuk's road system and the NPR-A¹⁰, the one-time high cost of long permanent roads is not a rational reason to expect that roadless developments in the NPR-A will be preferred over roads to facilities developed in the NPR-A.

The scarcity of gravel in the NPR-A is the second justification BLM gives for assuming that road construction would be limited in the NPR-A. Draft SEIS p. 4-38. As we understand it, the search for gravel in the NPR-A has not really begun. Even though no one was looking for gravel, the Clover gravel deposit was practically stumbled upon during exploration drilling. So we think BLM's declaration that gravel in NPR-A is scarce is premature. Assuming that gravel is scarce, this does not limit road construction since gravel can be trucked into the NPR-A. If there is a limitation here it is in the cost of transporting the gravel. This extra cost needs to be considered in market conditions where the per barrel price for crude oil is higher than ever before (more than \$90 per barrel during the drafting of this letter.) In this market, the higher price of gravel is not necessarily a deterrent to road construction. The added cost of transporting gravel should also be compared against CPAI's willingness to invest roughly \$100 Million in a vehicle bridge across the Colville River, and the annual costs of resupply ice roads. With these factors in mind, if gravel is actually scarce in NPR-A, industry would probably still find roads economical.

The third reason why BLM assumes that roads will not be built in the NPR-A is that field construction activities are normally scheduled for the winter when overland travel is possible without gravel roads. This statement is correct, and irrelevant. Gravel is usually laid down for new roads and production pads simultaneously during the same winter construction season. The roads and the production pads are then given time to settle before either one is usable. Therefore, the function of permanent roads in the oil fields is not in construction. Rather, roads are used throughout the life of fields to routinely access well pads and to move drill rigs used for developmental drilling and then in well work-overs that take place over field life. Roads in the NPR-A would be no different.

The last reason why BLM assumes that roads will not be built is because "smaller fields in the NPR-A would not require the same level of supply/service operations as multibillion-barrel fields, such as Prudhoe Bay and Kuparuk River Unit." Draft SEIS p. 4-38. Again, the "small field" premise underlying this statement is incorrect. The premise that an Alpine size field requires less supply and servicing than Prudhoe Bay and Kuparuk is probably correct. But, it does not follow that this means roads are not industry's preferred way to access fields of any size. CPAI built a road to CD-4, CPAI wants to build a road to CDs 5, 6, and 7, roughly 8 miles of road were built from Kuparuk to Tarn, and another 15 or so miles of road were built from Tarn to Meltwater. The only reason a road was not built to CD-3 is because the sensitive habitat the road would have gone through made permitting a road hopeless. All of these fields are smaller than Alpine and smaller than the 5 fields in the NPR-A that are the size of Alpine or larger. The oil industry clearly prefers building roads when it is allowed to build by regulatory agencies.

BLM's four justifications for concluding that roads are not preferred by the oil and gas industry are just plain wrong. BLM has no good reason to cling to the roadless development model that it uses in the Draft SEIS. So, what should the development model used to assess impacts of the alternatives in the Draft SEIS look like? We think that it would have to look something like the Alpine that CPAI has already developed and is trying to expand. More than likely, that means as many miles of road originating at Alpine's airstrip and/or at some other airstrip in the NPR-A that industry can get away with. At best, this looks like Alpine with a road stretching into the NPR-A and one or two "roadless" central hubs in the NPR-A that are connected by roads to several central processing facilities and satellite fields. At worst, this looks like a roadless Alpine connected by road to fields located throughout the NPR-A.

Under either of these realistic development scenarios, it is not at all far-fetched to predict that if the five Alpine-sized fields already discovered in the NPR-A are developed and the oil industry

gets to build a bridge across the Colville River, then the industry is going to want to connect the resulting Alpine/NPR-A road network to Kuparuk and, correspondingly, the Alaska road system. Under BLM's 1998 ROD, Stipulation 48 prohibits such a road. This protects from the impacts of a thoroughfare connecting NPR-A to the road system outside the NPR-A.11 Unfortunately, BLM can't acknowledge this possibility because it is not able to see past its unrealistic development scenarios. Likewise, the Draft SEIS completely misses impacts on subsistence resources and to the culture and lifestyle of Nuiqsut's residents that abandoning Stipulation 48 for the more permissive ROPs would have.

We now want to turn to some ways that the Draft SEIS impacts analysis understates or misses impacts. But, we will keep coming back to BLM's unrealistic development model because its flaws are part of the reasons why BLM systematically understates or misses impacts in the Draft SEIS. Before getting to that discussion we will briefly introduce the organizations signing this letter and the significance of the Northeast NPR-A to our shareholders, constituents, and members.

II. Who We Are.

Our first comment letter addressing BLM's proposed change to the management of the Northeast NPR-A was our October 31, 2003 Scoping Letter. On pages 2-7 of that letter we gave BLM an extensive introduction to our organizations, our community, and our interests in the management of the Northeast NPR-A. We refer BLM to this prior letter for an in depth background of our organizations.

In quick summary, the organizations signing this letter are the four primary organizations in Nuiqsut. We represent the economic, subsistence, and governmental interests of the community of Nuiqsut at the local level. At that local level, it is clear that Nuiqsut's residents are concerned about the impacts of BLM's proposed change to the management of the Northeast NPR-A. To see this one needs to look no further than the comments made at the public meetings in the village for the BLM's planned change to the 1998 ROD. Overwhelmingly village residents have expressed their concerns about the impacts of this change. Most recently, during the October 11 public comment meeting for the Draft SEIS, about 50 people showed up to comment on the BLM's proposed change in management for the Northeast NPR-A. Every one of those commenting expressed their concerns about the impacts of a change in the management of the Northeast NPR-A. When this letter discussed the underestimated and missed impacts of amending the management of the Northeast NPR-A it will be clear that Nuiqsut's residents have good reasons to be concerned.

Kuukpik Corporation is the Alaska Native Claims Settlement Act Village Corporation for Nuiqsut. At last count, roughly 95% of those living in Nuiqsut were Kuukpik shareholders, or the spouse or offspring of a Kuukpik shareholder. This percentage may be slightly lower now because the increased oil and gas activities occurring around the village has brought a few new faces to the village. Ever since taking the lead in negotiating with industry to minimize the impacts of the Alpine development on people living in Nuiqsut, Kuukpik Corporation has been an active advocate for the preservation of the traditional way of life of Nuiqsut's residents.

The Native Village of Nuiqsut is the federally chartered native tribe for the Kuukpikmuit people. Kuukpik shareholders and their offspring generally comprise the enrolled members of the Native Village of Nuiqsut. Like Kuukpik Corporation, the Native Village of Nuiqsut is keenly interested in protecting the subsistence activities and way of life of its members.

The City of Nuiqsut is the municipal government for the community elected by the community at large. The City of Nuiqsut's concerns include the health and welfare of its constituents. The health and welfare of the City's residents is tied directly to the management of the subsistence range outside the village. The Northeast NPR-A makes up a substantial part of Nuiqsut's remaining subsistence range. Lastly, the Kuukpikmuit Subsistence Oversight Panel ("KSOP") is a panel of subsistence users established in an agreement between Kuukpik Corporation and ARCO (now ConocoPhillips Alaska, Inc. or "CPAI".) KSOP acts as the eyes and ears for conflicts between Nuiqsut's subsistence users and the oil and gas industry in the area around the village. Conflicts identified by KSOP are brought to Kuukpik Corporation and CPAI for resolution.

We know from our own experiences as individuals, and from the experiences of our shareholders, members, and constituents, how import healthy caribou populations are and the significance of areas where hunting can occur outside the shadow of industry. We know the connection between subsistence and our people's culture runs deep. As discussed in the next section of this letter, BLM is risking all of these by ignoring impacts in order to push through its desired change in the management of the Northeast NPR-A.

III. Impacts of the Planned Management Change

As we said at the beginning of this letter, we are not going to belabor points already made in our prior comments. However, we want to point out how some very serious impacts are underestimated or missed in the Draft SEIS.

a. Impacts to the Teshekpuk Lake Caribou Herd.

All of the action alternatives considered by the BLM open acreage in the Teshekpuk Lake area that was either not leased or closed to surface occupancy in the 1998 ROD.¹² According to the 1998 ROD, this area was either not leased, or surface occupancy severely restricted, because it:

encompasses important goose molting areas, caribou calving and insect-relief habitat, and all of Teshekpuk Lake. It is of special importance to subsistence users because of the caribou and fish resources in the area and the long-standing subsistence use of the area. 1998 NE NPR-A ROD, p.1.

One primary focus of our comments has been the importance of the Teshekpuk Lake Caribou herd calving in the Teshekpuk Lake area which is currently protected from surface development in the 1998 ROD. In our scoping letter we raised concerns that development in the Teshekpuk Lake Caribou herd's calving area would cause displacement. We also raised concerns that such displacement would have population level impacts. October 31, 2003 Scoping Letter, pp. 33 - 34.

In our letter commenting on the Draft EIS, we identified for the BLM that its EIS completely missed the significance of studies that showed a direct correlation between calf survival and the Teshekpuk Lake Caribou herd calving in its usual calving grounds. August 23, 2004 Comment Letter pp. 39-40. We also pointed out studies showing that caribou in the Central Arctic Herd have already been displaced from their usual calving areas by the development of infrastructure in the Kuparuk field. Id. The Teshekpuk Lake Caribou herd has not been displacing from its core calving areas because no development is permitted in this area - yet. The action Alternatives would all change that. **[14.004]** If development were to occur in the herd's core calving area, then animals in the Teshekpuk Lake herd can be expected to react with at least the degree of displacement that the Central Arctic Caribou herd has shown. Since the actual impacts are not known, a more conservative assessment would consider the likelihood that

animals in the Teshekpuk Lake Caribou herd will react with more displacement than the Central Arctic Caribou herd.

[14.005] Despite our prior comments, and despite the results of caribou surveys, BLM continues to refuse to accept that development in the Teshekpuk Lake Caribou herd's calving area will have significant impacts on the herd. Instead, BLM makes qualified statements in the Draft SEIS that say development in the Teshekpuk Lake Caribou Herd's calving area "could" have impacts on the herd's calving. Draft SEIS p. 4-753. This makes it sound like everything will be fine. This is far from the truth.

The differences in calving success rates for animals in the Teshekpuk Lake Caribou herd that calve outside the herd's usual calving area versus those calving in the herd's usual calving area are remarkable. In 1997, 8% of the caribou calving outside the herd's usual calving area calved successfully. Compare this to the 75% success rate of the animals calving in the herd's usual calving area. Successful calving was over nine times more likely in 1997 for the animals who made it to the herd's usual calving area. Between 1990 and 2003, caribou calving in the herd's usual calving area were 3.6 times more likely to calve successfully as compared to animals that calved before reaching the herd's usual calving area.¹³ It does not take a mathematician to tell that these are significantly different survival rates. If large numbers of animals from the Teshekpuk Lake herd are displaced from the herd's usual calving grounds by development or if large numbers of animals are delayed in getting to the calving grounds by industrial development, the herd is going to suffer at an overall population level.

Our letter commenting on the Draft EIS put these pieces together for the BLM. Our comments are not being taken into account. Instead of looking at what these studies tell about impacts of development in the Teshekpuk Lake Caribou herd's usual calving area, the Draft SEIS says:

The reduction in calving habitat use near oil development facilities could eventually limit the growth of the Arctic caribou herds within their present ranges and prevent herds from reaching their maximum population size that they could achieve without the presence of development.

Draft SEIS p. 4-754 (Emphasis Added.) Evidence that Teshekpuk Lake Caribou herd calf survival is between 3.6 and 9 times less likely if animals calve outside the usual calving area cannot be rationally twisted into terms of "growth" that "could" be reduced and a "maximum population size" not being achieved. The same page of the Draft SEIS goes on to say that reduced Teshekpuk Lake herd calving success is possible under Alternatives B, C, and D. This understates the risk to the Teshekpuk Lake Caribou herd. Under Alternatives B, C and D, significant reductions in Teshekpuk Lake herd calving success is assured when development occurs in the Teshekpuk Lake Caribou herd's calving area.¹⁴ This impact is supported by the scientific evidence. It cannot be ignored by the BLM or reasonably qualified as an event that could occur or that is possible.

In addition, the caribou calving area displacement impacts need to be considered in light of a realistic development model. We have already discussed in Section I of this letter how BLM uses a defunct roadless model in the Draft SEIS. The reality is that industry is going to want to build roads instead of roadless facilities. Roads cutting across the Teshekpuk Lake Caribou herd's calving area means more displacement than the Draft SEIS recognizes.

Another way that industrial development will impact the Teshekpuk Lake Caribou herd is by delaying the arrival of animals at the core calving area. Studies show that even when mitigation measures are employed such as separating road from pipelines by 500 feet, caribou movements, especially the movements of pregnant caribou, are still delayed. Draft SEIS p. 4-

159 Delayed movements can also impact the health of caribou by causing animals additional stress and upsetting their nutritional balance. Draft SEIS p. 4-160.

[14.006] The Draft SEIS utterly fails to consider delays in the movement of caribou caused by industrial development in the NPR-A as an issue. Instead, at one point the Draft SEIS says that:

[P]ipelines associated with lease sales under this supplement would not have associated roads, and should therefore have minimal effects on caribou movements once constructed. Draft SEIS p. 4-754.

Huh? This is not even based on the unrealistic development scenario that BLM is supposedly considering in the Draft SEIS. Figure 4-28 of the Draft SEIS has a diagram of the typical development scenario which BLM believes is most likely to occur. This scenario includes up to 5 satellite pads connected to a central processing pad with up to 50 miles of road and a pipeline running parallel to those roads. See Draft SEIS p. 4-28. Clearly, BLM believes that pipelines associated with lease sales under this supplement would have associated roads. It just hasn't analyzed what that means in terms of impacts on caribou calving and caribou movement.

Even if BLM analyzed the impacts of the development scenario shown in figure 4-28 of the Draft SEIS on caribou movements, that analysis would be as unrealistic as the unrealistic scenario depicted in figure 4-28. Whichever realistic variant of the Alpine model is ultimately developed in the Northeast NPR-A, its impacts on the movement of the Teshekpuk Lake Caribou herd will be much greater than the impacts of the development scenario BLM outlines in the Draft SEIS. This is because, as discussed in Section I of this letter, there will be many more miles of roads than the Draft SEIS predicts. That means more delay in caribou movements and, where those roads and pipelines are within the area where the Teshekpuk Lake Caribou herd calves, more herd displacement.¹⁵

[14.007] Other important factors unique to the Teshekpuk Lake Caribou herd that we have pointed out are not considered by BLM. We have pointed to the fact that the Teshekpuk Lake Caribou herd often overwinters on the Arctic Coastal Plain where BLM predicts the highest likelihood for oil and gas development. Other herds in the Arctic, such as the Central Arctic Herd, typically migrate farther towards interior Alaska during winter. We have expressed our concern that winter activities in the Northeast NPR-A will have a greater impact on the Teshekpuk Lake Caribou herd than winter activities farther to the east which take place in the absence of caribou from the Central Arctic Herd. August 23, 2004 Comment Letter p. 41.

BLM has never addressed this difference and the increased impact of winter activities on the Teshekpuk Lake Caribou herd as compared to other herds. But, BLM is happy to make a groundless assumption. After identifying that winter seismic activities have disrupted and displaced caribou from the Teshekpuk Lake Caribou herd, BLM says:

it has been assumed that these effects did not persist after exploration was completed, and there was no consequential effect on the abundance or productivity of the caribou. This assumption has not been scientifically tested, however, and conditions for winter survival vary from year to year.

Draft SEIS p. 4-749 (Emphasis added.) Where data does not exist about impacts, BLM should be making conservative assumptions about the impacts instead of assuming impacts simply do not exist.

Other than this guess, nowhere does the Draft SEIS discuss whether industrial activities during the winter will impact the Teshekpuk Lake Caribou herd animals who spend the winter on the coastal plain. This is unacceptable where the Teshekpuk Lake Caribou herd will be the first caribou herd on Alaska's North Slope to encounter oil and gas infrastructure during the winter months. To the community and probably to anyone else reviewing the administrative record, this again shows that the Draft SEIS is inadequate and incomplete.

These problems with the Draft SEIS ripple into the ANILCA Section 810 "analysis" in Appendix A of the Draft SEIS. One of the factors considered for each of the alternatives in the ANILCA Section 810 analysis is whether there would be a reduction in the "availability of subsistence resources caused by a decline in the population or amount of harvestable resources." Draft SEIS Appendix A, p. A-4. For all four alternatives, BLM concludes that there will not be a reduction in the availability of harvest resources (in the cumulative case, such a reduction may occur.) But, that conclusion draws from the flawed analysis of impacts to caribou that is in the body of the Draft SEIS. Draft SEIS Appendix A, pp. A-9, A-12, and A-15. Until BLM actually considers the serious population level threat to the Teshekpuk Lake Caribou herd if it is displaced from its core calving grounds by development, and until the BLM considers how realistic development scenarios will impact the caribou, it has failed in its task under ANILCA Section 810 to consider whether there will be a reduction in harvestable subsistence resources under any alternative.

BLM's missed or underestimated impacts in the Draft SEIS and ANILCA Section 810 Analysis is not limited to just impacts to caribou. As this letter discusses next oil and gas development impacts on subsistence activities are treated similarly.

b. Impacts to Nuiqsut's Subsistence Users.

There are at least three ways that impacts to subsistence activities would occur if BLM changes its management of the Northeast NPR-A. One is by impacting subsistence species, another is by shrinking the areas in Nuiqsut's traditional subsistence range where hunting can still occur outside the shadow of oil and gas infrastructure, and the third is by directly impacting subsistence hunting.

As we have discussed above in Section III.a. of this letter, the Teshekpuk Lake Caribou herd will very likely be negatively impacted at the population level if the BLM allows development in the Northeast NPR-A that displaces the caribou from their calving grounds or that delays their arrival to the calving grounds. Such a population level impact would also directly impact subsistence success by limiting the number of animals available for harvest. Or, even worse, impacts at the population level could result in management that severely limits the number of caribou that can be harvested or eliminates the harvesting of caribou from the Teshekpuk Lake herd completely.

[14.008] The possibility that construction of permanent oil and gas facilities might "reduce the TLH caribou population" and reduce the subsistence harvest is mentioned on pages 3-341-342 (Alt. B) and 3-574 (Alt. D) of the Draft SIES. The passing mention of impacts to the Teshekpuk Lake Caribou herd does nothing to quantify the level of a likely reduction in the Teshekpuk Lake Caribou herd. Nor is it even consistent with the discussion of impacts to the caribou in the Draft SEIS, which doesn't reach a similar conclusion. Had BLM analyzed the information it has using a realistic development scenario, then it would have to reach a much worse conclusion than the population of the Teshekpuk Lake Caribou herd might be reduced. **[14.009]** Additionally, the reduction in the Teshekpuk Lake Caribou herd is predicted only "until the caribou were able to habituate to the increased activity and infrastructure in the area." Id. This

ignores the fact that caribou that have habituated to the infrastructure in Kukparuk are still displaced from their traditional calving areas. Impacts to caribou will be long lasting and more extensive than discussed in the Draft SEIS. So would impacts to the subsistence harvest.

The bottom line is that a real analysis of the impacts of a change in the management of the Northeast NPR-A on our subsistence activities needs to look at how caribou will be impacted and then tie that impact to our subsistence activities. The Draft SEIS's identification that a reduction in the Teshekpuk Lake Caribou herd is possible doesn't come close to a real analysis.

Impacts to subsistence from opening the Teshekpuk Lake Area to development are not limited to just the caribou and other animals that we hunt in that area such as water fowl. For the first time ever we are being told that opening the Teshekpuk Lake Area to oil and gas development risks impacts to our hunting Bowhead whale. Draft SEIS p. 4-812 & 4-815. According to the Draft SEIS:

It is likely that the International Whaling Commission would perceive increased industrialization of the National Petroleum Reserve - Alaska and [the] rest of the North Slope, including development of coastal staging areas, heightened interest in adjacent offshore areas, and increased oil spill risks, as placing pressure on the endangered [B]owhead whale population. . . . Although the International Whaling Commission is unable to directly control industrial activities, they are able to control the Alaska Eskimo subsistence harvest quota and could reduce this quota as a means of protecting the species confronted with the effects of increased industrialization.

Draft SEIS p. 4-812 (emphasis added.) We also find, buried in the conclusion section for socio-cultural impacts under Alternative D, a statement that if marine traffic increases to the Point Lonely area, "Bowhead whales would be deflected and their behavior made more dangerous to hunters." Draft SEIS p. 4-583.16

Words cannot express how devastating a cut or elimination of our whale quota would be to the people of Nuiqsut. Whaling is the most important cultural and subsistence activity in the village. Harvesting of all other subsistence species is usually inversely proportional to the success of whaling. In years where whaling is very successful, fewer caribou and other subsistence species are needed to feed our people. When few or no whales are brought in, those years we need to take more land mammals, especially caribou. If whale quotas end we will be more dependant on caribou than ever before. At the same time, we are facing the decimation of the Teshekpuk Lake Caribou herd if areas around Teshekpuk Lake are opened for development. We are extremely concerned by this.

We cannot stress enough that BLM should do what it can to preserve our whale quota. That means responsibly managing the area along the coast in the NPR-A so that activities in the NPR-A have no impacts on the Bowhead whales. It is not enough to preserve a 3/4 mile strip along the coast. Proposed Stipulation K-9. It is no secret that climate change is accelerating Arctic coastal erosion. Draft SEIS pp. 3-32, 3-189. This is something that we have experienced in our lifetimes. The science indicates that several factors are increasing erosion rates, including less sea ice which allows larger waves to develop, increasing sea levels, and a deepening active layer over the permafrost. Draft SEIS 4-696. Erosion is going to reduce the 3/4 mile no surface occupancy strip to 1/2 mile and then 1/4 mile, and then to nothing. This will probably occur in our lifetimes, and if not in our lifetimes, then certainly within the lifetimes of our children.

Protecting Bowhead whales from additional stresses also requires careful limitations on marine traffic. Opening more area to leasing north of Teshekpuk Lake increases the likelihood that that area will be supplied from the coast instead using long distance overland movement of modules and material from existing coastal infrastructure. Measures protecting the Bowhead whale from the additional impacts of barges landing along the coast of the NPR-A need to be in place.

When it comes to protection of the Bowhead whales, long term thinking is needed, instead of a short term "get as much oil as possible" approach. We urge BLM to take risks to the Bowhead whale seriously and to implement all mitigation measures necessary to eliminate such impacts.

A second way our subsistence activities are impacted by development is by the displacement of our subsistence activities by oil and gas infrastructure. Unlike the impacts to the caribou, which in turn impact subsistence activities, displacement is an impact that is felt directly at the subsistence user level. Our past comment letters have clearly drawn the connection between oil and gas infrastructure and where subsistence activities are occurring, or more accurately, not occurring. See October 31, 2003 Scoping Letter p. 29.17

The Draft and Final EIS did acknowledge that hunters are avoiding areas occupied by oil and gas industrial development. But, as we pointed out in our letter commenting on the Draft EIS, this acknowledgment was pretty uninformative since it did not tie the degree of infrastructure avoidance to the amount of infrastructure predicted in the Northeast NPR-A. **[14.010]**

Additionally, BLM did not discuss in the Draft EIS how opening the Teshekpuk Lake area that was set aside in the 1998 ROD would effectively eliminate an area where subsistence users could hunt without falling in the shadow of oil and gas development. August 23, 2004 Comment Letter pp. 47- 48. **[14.020]** Nor did BLM discuss how hunters' avoidance of infrastructure in the Northeast NPR-A translates into increased costs for fuel and tools (snowmachines, etc.), as well increased time spent on subsistence activities and the risks associated with subsistence users traveling farther and into less familiar areas. Id.18 The Draft SEIS fails to take our comments into account and therefore suffers from the same flaws as the Draft EIS.

Perhaps the most striking way in which BLM fails to consider in the Draft SEIS our past comments about the impact of oil and gas infrastructure on where hunting occurs is in how it analyzes mitigation of this phenomenon. There may be ways to mitigate this impact on Nuiqsut's subsistence users. Accordingly, we asked that BLM use its drive to change the management of the Northeast NPR-A as a tool to analyze the root of this problem, and to even find a workable solution. October 31, 2003 Letter p. 30. Instead of attempting to find useful mitigation measures, BLM announced, without seeking our input, that ROPs H-1 and H-2 which require consultation with the community would suffice as mitigation. BLM expressed in the Draft EIS that:

ROPs (e.g. H-1 and H-2) would minimize conflicts between subsistence uses and oil and gas related activities. Draft EIS 4-231

And,

Required operating procedures H-1 and H-2 are subsistence-specific mitigation procedures designed to provide opportunities for participation in planning and decision-making to prevent unreasonable conflicts between subsistence users and oil and gas-related activities including seismic operations. Draft EIS p. 4-232 and 233.

In no uncertain terms our letter commenting on the Draft EIS told BLM that keeping us informed about impacts will not minimize subsistence user avoidance of infrastructure. August 23, 2004 Letter pp. 51-53. We are the ones who would be involved in the consultation BLM envisions. Accordingly, we would know whether consultation would be effective at minimizing impacts on us. No one else is in as good a position as the people of Nuiqsut to tell BLM that its consultation requirement would not work to resolve subsistence user avoidance.¹⁹ We thought that the Draft EIS's conclusions about the effectiveness of consultation at mitigating impacts to subsistence activities were absolutely preposterous. August 23, 2004 Letter pp. 51-53.

With the benefit of our input, what then does BLM's Draft SEIS have to say about the effectiveness of consultation in mitigating impacts on subsistence users?

ROPs (e.g. H-1 and H-2) would be effective in minimizing conflicts between subsistence uses and oil and gas-related activities. Draft SEIS 4-345.

And

Required Operating Procedures H-1 and H-2 are subsistence-specific mitigation procedures designed to provide opportunities for participation in planning and decision-making to prevent unreasonable conflicts between subsistence uses and oil and gas related activities including seismic operations. Draft SEIS 4-347, 4-578.

This language is exactly the same as the language in the Draft EIS. There are none so blind as those who don't want to see, and BLM clearly doesn't want to see.²⁰ We didn't make comments to the BLM on the serious problem of our traditional subsistence range shrinking, or make comments about how the mitigation BLM proposed would not be effective, only for those comments to fall into an administrative record black hole. BLM is not even putting window dressing over its outright ignoring our prior comments.

The BLM's failure to listen to us couldn't be more plain. Or more stunning! This failure to listen to our prior comments is also found in the ANILCA Section 810 analysis. That analysis says:

Required Operating Procedures H-1 and H-2 would be the primary mitigation measures in place to ensure adequate access to traditional hunting areas by the residents of Nuiqsut, Barrow, and Atkasuk in the Teshekpuk Lake Special Area.

Draft SEIS pp. A-10 (Alt. B) & A-13 (Alt. C) (Emphasis added). A slightly different statement is made with respect to Alternative D, but the message that consultation will "help alleviate access issues" remains the same. Draft SEIS p. A-15. In light of our comments that consultation is not, and has not been, effective it is unreasonable to believe that consultation with us will "ensure adequate access."

[14.011] BLM's conclusions, cited above, that ROPs (e.g. ROP H-1 and H-2) would be effective in mitigating conflicts essentially are a slap in the face of those in Nuiqsut who made comments that BLM's ROPs will not be effective. Who would know better whether consultation works than the leading organizations and individuals in the community that is more affected by oil and gas development than any other community across the entire North Slope? This refusal to acknowledge or address reality and past experience is one more example of BLM's tendency to reach conclusions in the Draft SEIS and the ANILCA Section 810 Analysis without doing what is necessary to support the conclusion it wants to draw.

The Draft SEIS offers a new mitigation measure that appears directed towards impacts of development on where subsistence activities occur in the newly added sections on public health.

Draft SEIS pp. 4-265, 4-382, 4-493, 4-614.²¹ That mitigation would entail three phases: (1) study of subsistence uses in an area where construction is proposed prior to the construction; (2) monitoring the impacts on subsistence activities once development begins, and, (3) where monitoring shows impacts, the BLM may order changes in construction or operation.

On its face, this new measure has some appeal, but, we think that its application would have little practical mitigating benefit. The first phase, study of subsistence uses, is something that should be done in order to support the NEPA planning process, as well as the ANILCA Section 810 analysis, for any development in the Northeast NPR-A. If putting the study of subsistence uses in the format of a mitigation measure is what it takes for BLM to require such study prior to construction, then we support this part of the new mitigation measure.

The second phase of this new mitigation measure calls for monitoring of impacts to subsistence activities caused by the new development. It is already clear that subsistence activities all but cease in areas occupied by new development. So it is hard to grasp what the monitoring is going to find, besides the absence of subsistence activities in the area of the new development. If monitoring better documents the scope of the areas around oil and gas infrastructure where subsistence activities cease or are impacted, then it would at least have value when planning future development projects.

The last phase of the new mitigation measure, adjustment of on going oil and gas development activities to address observed impacts to subsistence activities, is probably not going to bring the subsistence use back to a developed area. Theoretically, adjustment could be helpful, but BLM would have to have the will to take actions that are detrimental to oil and gas development, and not simply be a facilitator for the oil and gas industry. As BLM's blyth conclusions and assumptions regarding the effectiveness of consultation demonstrates, that will to act has been consistently lacking for years and is not something we want to rely upon in the future.

Indeed, the new mitigation geared toward subsistence impacts adds little if any new subsistence activity protection. We would prefer that the BLM maintain the current management, which we know is going to at least preserve an area where we can hunt without encountering development, instead of trading this for consultation and the illusion something effective will be done to mitigate impacts after subsistence users have been displaced.

A third way that oil and gas development is impacting subsistence activities is by impacting the hunt itself. Since subsistence activities take place away from oil and gas infrastructure, the primary impact to the hunt comes from aircraft. Air traffic reduces harvest success since, in our experience, caribou are skittish when they hear or see aircraft. The BLM duly catalogs in the Draft EIS and the Draft SEIS that air traffic interferes with subsistence activities. Draft EIS p. 4-227 & 228; Draft SEIS p. 4-341, p. 4-571.

What BLM does with this information is disappointing to say the least. As we commented in our August 23, 2004 Comment Letter, noting that this impact can occur without tying it to any reasonable prediction about the different level of air traffic under the various alternatives is uninformative. August 23, 2004 letter p. 43.

BLM has done nothing in the Draft SEIS to make analysis of impacts to the subsistence hunt caused by air traffic more informative. It almost looks like BLM tried to make a reasonable informed prediction about this impact in the discussion of Alternative B's impacts on subsistence. BLM at least makes a prediction about the number of flights under Alternative B on the same page where it notes that overflights impact subsistence harvest success. Draft SEIS

p. 4-341. Yet, [14.012]with respect to Alternative B, the Draft SEIS does not tie the number of flights to impacts to harvest success. Even if the number of flights discussed on Draft SEIS p. 4-341 were analyzed in conjunction with the impacts of air traffic on the success of subsistence hunters, the predicted impacts would be underestimated because the Draft SEIS is based on a prediction of flights that is far below what can be expected in reality. This under-estimation is discussed in Section I of this letter.

[14.012 cont'd] The discussion of the impacts of air traffic on subsistence hunting under Alternatives A, C, and D is completely worthless. Actually, we can find no discussion about how air traffic to a roadless facility would reduce the success of subsistence hunters anywhere in the discussion of the impacts of Alternative A.²² That doesn't stop the discussions of the impacts of Alternatives C and D from being compared against the non-existent discussion of impacts under Alternative A. See Draft SEIS 4-455 (Alt. C), and 4-571 (Alt. D).

BLM's failure to consider how air traffic impacts subsistence hunter success is yet another way BLM's Draft SEIS fails to analyze impacts of oil and gas developments. This failure to consider air traffic's negative impacts on subsistence harvests is carried through to the ANILCA Section 810 analysis which is based on the analysis done (or should we say that was not done) in the Draft SEIS.

c. Socio-Cultural Impacts.

BLM's failure to consider the impacts to caribou and failure to consider impacts on subsistence cumulates in its failure to consider the socio-cultural impacts that would be felt in the village if BLM changes the management of the Northeast NPR-A. Our scoping letter on BLM's proposed change to the management of the Northeast NPR-A pointed out how understanding the socio-cultural impacts being felt in the Village of Nuiqsut was critical to BLM's NEPA process. October 31, 2003 Scoping Letter pp. 32-33.

When we made our scoping comments Alpine had already been in operation for 6 years and CPAI had only done the initial assessment portion of the socio-cultural impacts study promised in the 1997 Alpine Development Project: EED (see p. 2-41.) The initial assessment, although only a snapshot, showed some pretty disturbing trends in the village such as changes to subsistence success rates, sharing behavior, alcoholism and drug use.²³ The "multi-year socio-cultural trends study to be undertaken by a qualified expert(s) in social trends assessment" that was promised as a mitigation measure for the impacts of Alpine had not yet begun. Alpine EED p. 2-41. Four years have passed since our October 31, 2003 Scoping Letter and the multi-year socio-cultural study that was promised as a tool for "long-range planning" and as a "basis and data for community planning and potential impact assessment" is no where in sight. Id.

Without the benefit of a study of the socio-cultural impacts of oil and gas development on Nuiqsut BLM's Draft EIS skipped over the serious gaps in the data about the socio-cultural impacts. Instead of filling the prevalent data gaps, the Draft EIS cobbled together discussion of socio-cultural impacts that was, in a word, meaningless. So, our comments on the Draft EIS pointed out how the discussion in that document needed improvement. August 23, 2004 Comment Letter pp 44-46. For example, statements in the Draft EIS about "increased stress" and a "decreased sense of well being" did nothing to bring into focus what psychological impacts were already felt in Nuiqsut, much less convey expected impacts. Statements in the Draft EIS that there would be economic consequence because subsistence users would need to travel some undetermined distance to successfully harvest caribou were useless because they were not tied to any actual prediction of the economic impacts. Id.

Even though we pointed out how the discussion of socio-cultural impacts in the Draft EIS was meaningless, nearly the exact same language is used in the Draft SEIS to discuss the socio-cultural impacts of all of the action Alternatives. Compare Draft EIS p. 4-234 with Draft SEIS pp. 4-349 (Alt. B), 4-461(Alt. C.), 4-581 (Alt. D.)²⁴ In other words, BLM still has no idea about how oil and gas development has impacted Nuiqsut, nor does BLM have any idea how those impacts would change under any of the action Alternatives laid out in the Draft SEIS.²⁵

We find it ironic and troubling that BLM is content with such a meaningless "analysis" of socio-cultural impacts when 10 ago CPAI promised a multi-year socio-cultural trends study that could be used for an actual analysis of these impacts. What is the message BLM is sending to the oil industry here? Ignore your promises, perpetuate data gaps so we can make only vague unsupported statements in our long range planning documents, and we will give you more leasing and make development easier for you. This is outrageous The message we receive loud and clear is that BLM will facilitate oil and gas development without actually looking at how this impacts the people of Nuiqsut. This is even more outrageous!

[14.013] The new public health discussion that has been added to Draft SEIS is a step in the right direction because the Draft SEIS starts giving socio-cultural impacts in the village more than the short shrift found in the Draft EIS. But, these new sections are too general since the impacts of oil and gas development within Nuiqsut have not been studied. The study of Nuiqsut is important because no other community on the North Slope has seen so much of its subsistence range occupied by oil and gas development. Nor has any other North Slope village gone through the experience of having oil and gas development occur as close as Alpine and Alpine's satellites. Social ills (substance abuse, nutritional problems, and violence, etc.) occurring in Nuiqsut now, and in the future, are occurring in a unique environment.

[14.014] The new public health sections also recognizes that many impacts that are felt in Nuiqsut are tied to subsistence activities in our subsistence range. In this section we see that the Draft SEIS says:

Overall, however, in the face of expanding development, particularly development of important subsistence areas, it is likely that there would be substantial unmitigated impacts to health and social determinants of health.

Draft SEIS p. 4-381. We think this conclusion is pretty accurate. But, like so many other places in the Draft SEIS, BLM reaches a controversial conclusion without analysis. In order to truly understand the differences in public health (or socio-cultural) impacts between the Alternatives, the ways that expanding development impacts subsistence activities needs to be understood. As discussed in Sections III.a and III.b of this letter, impacts to subsistence areas and subsistence species have not been adequately analyzed in the Draft SEIS, and to the extent any analysis has been done, the analysis underestimates impacts since the analysis is based on an unrealistic roadless future development scenario. This is yet another area in the Draft SEIS where the foundation for analyzing impacts is lacking.

III. Differences Between Stipulations and Required Operating Procedures.

The differences between the stipulations adopted in the 1998 ROD and the ROPs that BLM wants to adopt have been a point of contention between BLM and the community. We doubt that there is any real benefit to laying out in this letter the differences we have already discussed on pages 10 - 13 of our October 31, 2003 Scoping Letter and on pages 25 - 36 of our August 23, 2004 Comment Letter.

BLM has duly recorded in the Draft SEIS that we have made comments about the differences between the 1998 ROD Stipulations and BLM's proposed ROPs. See e.g. Draft SEIS p. 4-584. However, our comments discussing these differences are still met by BLM's constant assertion that the level of protection will be the same. So long as BLM maintains this "belief" and "perspective" (Draft SEIS p. 4-584) and never analyzes whether its conclusion is correct it can continue making this statement in support of amending the management of the Northeast NPR-A. This results-driven approach is inconsistent with this NEPA process and inconsistent with ANILCA Section 810, which require BLM's analysis of the impacts of its proposed leasing on subsistence species and subsistence activities.

[14.015] The differences in the amount of protection afforded by BLM's ROPs and the 1998 ROD Stipulations that we have addressed in our prior letters are real. This letter also points out some very real differences. Abandoning 1998 ROD Stipulation 48 will have wide-ranging impacts since this would facilitate the building of roads throughout the NPR-A. Those roads have impacts that are not considered in the Draft SEIS. Additionally, abandoning Stipulation 48 paves the way for a road from Kuparuk and the rest of the Alaska road system to the NPR-A. The impacts of a road cutting through some of the last remaining undeveloped areas to the east of the Colville River should be considered before Stipulation 48 is abandoned. Also, as this letter has already pointed out, a Stipulation that establishes a 3/4 mile set back along the Northeast NPR-A coast will not provide the same level of protection to the Bowhead whale or to our subsistence hunting as the current management protecting a far greater area along the coast.

BLM needs to do more than make assertions that ROPs would provide the same level of protection as the 1998 ROD Stipulations. BLM needs to actually look at the differences and then address in the NEPA process and ANILCA Section 810 process how the level of protection differs.

IV. Authority for Amending the 1998 Record of Decision.

[14.016] Nuiqsut, our organizations, and we as individuals, remain convinced that BLM has no authority or reason to amend the Northeast NPR-A 1998 Record of Decision. We don't make this statement lightly because BLM, just like any other government agency, should be reasonably expected to act only within its authority and only when justified. But, we have looked in detail at what BLM has cited as its authority and reasons for initiating this amendment process. See October 31, 2003 Scoping Letter pp. 13-27, August 24, 2004 Comment Letter pp. 3-19. Our detailed review has found nothing but red herrings and makeweight arguments. BLM's past reliance on the 2000 amendments to Energy Policy Conservation Act ("EPCA") is a perfect example of this. We looked at the part of EPCA BLM was citing as its authority for amending the Northeast NPR-A 1998 ROD and explained in our August 23, 2004 Comment Letter how EPCA was not authority for BLM's amendment. Now, BLM has removed reliance on EPCA from the Final EIS and the Draft SEIS altogether.²⁶

The BLM's justifications and reasons that remain are really no more supportable than BLM's past reliance on EPCA. These merely provide the thin veneer covering the Presidential policy changes that drive this amendment process. **[14.016 cont'd]** We have explained why a change in Presidential policy does not legally support reversing the protections put in place in the 1998 ROD, such as BLM's decision to not make areas around Teshekpuk Lake available for leasing and/or surface occupancy. See August 23, 2004 Comment Letter pp. 19 - 21. That explanation is un-rebutted by BLM.

Let's assume for a moment BLM can amend management of the Northeast NPR-A based on the National Energy Policy Development Group ("NEPDG") recommendation BLM cites as its authority. Specifically, the NEPDG recommended that the government:

consider additional environmentally responsible oil and gas development based on sound science and the best available technology, through further lease sales in the National Petroleum Reserve - Alaska.

Draft SEIS p. 1-4. If BLM is going to act pursuant to this recommendation, BLM needs to follow the recommendation. Following the recommendation means doing what it takes to consider additional environmentally responsible leasing based on sound science. As our prior comment letters and the comments in this letter point out, BLM has not yet done that since it has failed miserably at considering the impacts of additional leasing on either the physical or human environments.

The wording of the NEPDG's recommendation that the BLM relies upon as justification to initiate changes to the management of the Northeast NPR-A is not an accident. According to Vice President Dick Cheney's letter transmitting the NEPDG's recommendations to the President:

As you directed us at the outset of your Administration, we have developed a national energy policy designed to help bring together business, government, local communities and citizens to promote dependable, affordable and environmentally sound energy for the future.

May 16, 2001 Letter from Dick Cheney to President Bush, attached as Document No. 2. Direction to promote environmentally sound energy development comes from the very top, the President himself. NEPDG's recommendation to consider environmentally responsible leasing in the NPR-A is consistent with this recommendation. Any action BLM takes pursuant to this recommendation also needs to be consistent with the President's direction. So far, BLM's approach to the management of the Northeast NPR-A has not been consistent with the President's direction since BLM's focus has been on facilitating oil and gas development without balancing this with what is environmentally responsible. Nor is BLM's analysis or proposed change in management backed by sound science.

It is also telling that Vice President Cheney's letter says that the NEPDG's recommendations are designed to bring together government and local communities. There is no doubt that BLM's proposed change in the management of the Northeast NPR-A and BLM's failure to consider the community's concerns already has strained the relationship between the local community and the BLM. If a management plan is adopted which has greater impacts on the people of Nuiqsut than the 1998 management plan (and make no mistake, all of the action Alternatives discussed in the Draft SEIS will increase impacts) this will drive a wedge between the BLM and the local community. If BLM were following the NEPDG's recommendation this result should not happen.

V. Conclusion

We, and the BLM, are fortunate that the Federal District Court ordered supplementation of BLM's Final EIS. This gives BLM another chance to consider what course it should take. Now that there is a new Alaska State Director, and a new project manager responsible for the

management of the Northeast NPR-A, BLM can step back and take a fresh look at the management of the Northeast NPR-A and whether changes to this management are needed. As part of this look, we ask that BLM's decision makers give thought and consideration to whether proceeding with this amendment is justified. Our comments made in this letter today, as well as our prior comments that seemingly have collected dust in the administrative record, also need to be considered. Additionally, we ask that BLM's new decision makers consider whether advancing oil and gas special interests to the serious detriment of the local people is really what BLM wants to do, or is consistent with what BLM is required to do.

KUUKPIK CORPORATION

DATE BY: ISAAC NUKAPIGAK

ITS: PRESIDENT

NATIVE VILLAGE OF NUIQSUT

DATE FOR: LEONARD LAMPE

ITS: CHAIRMAN

CITY OF NUIQSUT

DATE BY: CARL BROWER, SR.

ITS: MAYOR

KUUKPIKMIUT SUBSISTENCE OVERSIGHT PANEL

DATE FOR: THOMAS NAPAGEAK, JR.

ITS: PRESIDENT

cc: Edward S. Itta (North Slope Borough Mayor)

Rex. A. Okakok, Sr. (North Slope Borough Planning Director)

Arnold Brower (ICAS)

1 Our prior comment letters are our October 31, 2003 Scoping Letter; our August 23, 2004 Draft EIS/IAP Comment Letter; and our February 28, 2005 Final EIS/IAP Comment Letter. All of these letters are part of the administrative record leading up to BLM's latest Draft SEIS. We can provide copies of these letters upon request.

2 For example, Figure 4-28 minimizes gravel footprint by combining an airstrip with roads between the Central Processing Facility's pad and satellite fields. Alpine has a similar configuration. CPAI has sought to undo this footprint minimizing configuration at Alpine because of conflicts between aircraft and vehicles. See January 3, 2002, U.S. Army Corps of Engineers, Public Notice of Application for Permit, for Alpine Satellites CD-3 and CD-4, p. 2 ("To avoid the existing dual use (aristrip/runway) of the Alpine runway, the applicant has

proposed to construct 1,050 feet (0.2 miles) of new roadway ..."), see also sheet 6. We seriously doubt that the oil and gas industry would combine a road and an airstrip again.

3 Based on BLM's satisfaction with its prior estimation of the number of flights necessary to develop and operate the Alpine Satellites (see Draft SEIS p. 4-16) it is apparent that BLM has not asked for up to date flight information at Alpine to aid in its preparation of the Draft SEIS.

4 We aren't agreeing that the number of flights BLM projects for the development and operation of the five Alpine satellites is anywhere close to accurate. Now that CD-3 and CD-4 have been developed, this projection could be tested objectively by looking at changes in the number of flights using the Alpine airstrip during the construction and operation these satellites. BLM has not done that since the Draft SEIS is relying on projections made prior to the construction of these two satellite fields.

5 The North Slope has a history of understated reserves. Prudhoe Bay's estimated reserves were revised upwards several times.

6 BLM must predict more than just these 5 Alpine size or larger fields in the Northeast NPR-A if the area around Teshekpuk Lake is opened to leasing and further development. Afterall, the likelihood of finding more oil in the Northeast NPR-A is the whole reason BLM wants to change the Northeast NPR-A's current management. See August 23, 2004 Comment Letter pp. 3-21 (discussing BLM's other bogus justifications for initiating this amendment process.)

7 That EIS considered CPAI's proposed development featuring Alpine as the transportation hub for planned development in the Northeast NPR-A as well as a "Full Field Development" model that included hypothetical fields in the NPR-A. Several of the alternatives discussed in Alpine Satellite Final EIS connected Alpine to the hypothetical fields via miles of new roads. See Alpine Satellite Final EIS, Figures 2.4.1.2-1, 2.4.2.2-1, 2.4.3.3-1.

8 Elsewhere, the Draft SEIS assumes that no road would extend from Alpine and its satellites into the NPR-A. See. e.g. Draft SEIS p. 4-815

9 Even if an ice road is necessary every 3 years, the costs of ice road construction would exceed the cost of building a permanent road after 9 years.

10 There are roughly 40 miles of roadless area between Kuparuk and the Northeast NPR-A. The distance between Kuparuk and exploration wells such as Puviaq and Trailblazer is at least twice as vast.

11 BLM's interpretation that Stipulation 48 allows the Colville River Bridge in the Alpine Satellite Development Plan Final EIS because Alpine was part of the NPR-A planning area is nothing less than a sleight of hand. This sleight of hand got around Stipulation 48 without ever examining the impacts under NEPA of doing so. See e.g. Alpine FEIS p. 2-61, 2-109. But, even this sleight of hand would not allow the Alpine/NPR-A road system to connect up to the North Slope's existing road system. That is why we think BLM and CPAI want to get rid of Stipulation 48 altogether and why they are using this amendment process to do so.

12 All action Alternatives considered during this process, whether at the Draft EIS, Final EIS, or the Draft SEIS stage have opened additional lands to leasing and development under BLM's proposed ROPs. BLM's results driven approach to this entire process has caused BLM to fail to consider all of the reasonable alternatives. For example, **[14.017] BLM has never considered alternative ROP packages. [14.018] Nor has BLM considered alternatives that would reduce**

impacts below the 1998 ROD level. We have already commented on this failure on pages 21-25 of our August 23, 2004 Comment Letter. We are not going to repeat that discussion here.

13 The Alaska Department of Fish and Game studies showing these differing calving survival rates are cited in footnotes 134 and 135 in of our August 24, 2004 Comment Letter.

14 The differences in the action Alternatives may equate into different levels of impacts on the Teshekpuk Lake Caribou herd. BLM does not even get to this level of analysis since analysis addressing the impacts to the Teshekpuk Lake Caribou herd, i.e., the foundation for comparing the differing levels of impacts under the Alternatives, is missing altogether.

15 Even a roadless development would have far more aircraft using the airstrip(s) than what is predicted in the Draft SEIS. (See discussion in Section I of this letter.) Those aircraft flights cause caribou to react, which can further delay caribou movement or cause additional displacement from calving grounds.

16 [14.019] This quoted language was found in the conclusion for the discussion of socio-cultural impacts under Alternative D. Like so many other conclusions in the Draft SEIS, there is no supporting analysis. There are no similar unsupported conclusions in the discussions of the socio-cultural impacts under Alternatives B and C. The likelihood that barges would be used for development under these other two action Alternatives is the same as under Alternative D.

17 In 1998 BLM had also recognized that oil and gas development was causing some displacement or subsistence users and BLM recognized the need to pay close attention to this impact. 1998 NPR-A IAP/EIS, p. IV-H-22.

18 [14.020 cont'd] The Draft EIS did identify these impacts in the abstract. However, no effort was made to understand the current level of these impacts or how the level of impacts would change under the action Alternatives.

19 We've had 10 years of "consultation" on Alpine and its satellites and can knowledgeably state based on that experience that consultation seldom produces changes in impacts to where subsistence hunting takes place. We remember well the oil company engineer who told Kuukpik several years ago that if a proposed change to a project didn't produce an extra barrel of oil, the oil company was not going to do it unless a government agency made them do it. If "consultation" has any chance of working as mitigation pro-active ongoing agency involvement is absolutely necessary. We're sorry but we just don't see BLM filling the role of a pro-active agency when it comes to protecting subsistence activities. BLM's modus operandi seems focused on giving the oil industry pretty much what it wants.

20 Despite its assertion that consultation will be effective at minimizing subsistence user avoidance of oil and gas infrastructure, even BLM doesn't always believe that consultation will be effective since it states that:

Under Alternatives B-D, development would be allowed throughout most of one of the prime subsistence areas in the region, and there is a substantial chance that subsistence harvests may decline as a result of development, primarily because of displacement of subsistence resources or hunters.

Draft SEIS p. 4-862 (emphasis added.) Maybe BLM does see that its statements touting the effectiveness of consultation are mere puff.

21 We find it interesting that BLM proposes adding this mitigation to any further lease sales under Alternative A. Draft SEIS p. 4-265. It appears that BLM is at least attempting to take a step that makes the existing management under the 1998 ROD better at protecting subsistence. We asked the BLM to explore alternatives providing greater protection than the 1998 ROD in our October 31, 2003 Scoping Letter (p. 38.) But we have been told throughout this process that strengthening mitigation measures was not consistent with BLM's goals to open more area in the Northeast NPR-A to oil and gas leasing. (Draft EIS p. 2-10.) It seems that BLM has reconsidered whether it can consider more protections for subsistence. Therefore, BLM should also reconsider whether it has analyzed all of the possible alternatives in the Draft SEIS.

22 There is a discussion of the impacts of non-oil and gas related air traffic and its impacts under Alternative A. Draft SEIS 4-195. That discussion, like the discussion of oil and gas related air traffic in Alternative B, does little more than state an impact is likely to occur, without making any effort to quantify the impact.

23 We believe that BLM has a copy of the "Sociocultural Impacts of the Alpine Field on the Colville River Community of Nuiqsut: An Initial Assessment" prepared by Circumpolar Research Associates since BLM has a copy of our March 6, 2002 letter to the U.S. Army Corps of Engineers commenting on whether an EIS was necessary for the permitting of Alpine Satellites CD-3 and CD-4. The study is attached to that letter as document number 5.

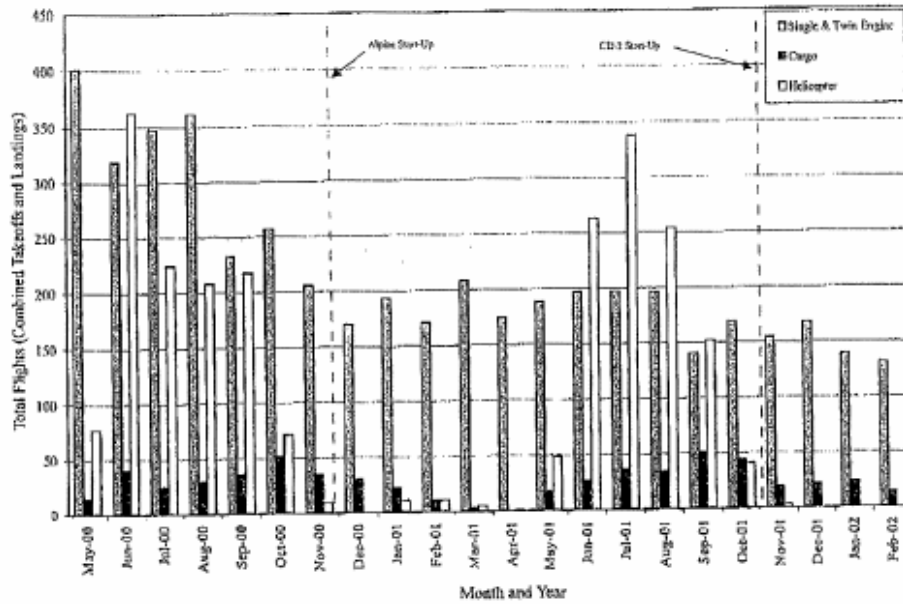
24 **[14.021]** Like the Draft EIS, rather than analyze impacts to the sharing of subsistence resources, the Draft SEIS makes the bare conclusion that "[a]s harvests decrease, resources would no longer be available in amounts suitable for sharing resulting in changes in social organization and cultural values". Compare Draft EIS p. 4-236 with Draft SEIS p. 4-352 (Alt. B) and Draft SEIS p. 4-463 (Alt. C). (This conclusion is not included in the discussion of socio-cultural impacts of Alternative D. We think that this must be an oversight because Alternative D is not so vastly different from Alternatives B or C that its subsistence related impacts would be wildly different.) In our letter commenting on the Draft EIS we already discussed how stating the exact same conclusion, without providing the analysis necessary to reach this conclusion, looked like a way to slip something controversial into the EIS. August 23, 2004 Comment Letter p. 46. BLM is trying to slip the same controversial conclusion into the Draft SEIS without conducting the analysis necessary to support it.

[14.022] 25 At one point we find that the Draft SEIS says:

As long as core Inupiat values continue to be passed from generation to generation as they currently are, an increase in the Inupiat population results in a strengthening of the culture as a whole.

Draft SEIS p. 4-820. This illustrates how poorly BLM understands what is at stake here. Passing core Inupiat values from generation to generation only in the abstract will result in major changes to our culture. Our children cannot effectively learn the lessons that we have learned from subsistence activities using books or computer programs. Nor will our children learn that sharing subsistence resources earns them respect in our culture if they are worried about getting enough food to feed their own families, or if they are buying their food from the grocery store. Our culture may be passed on from generation to generation, but only as a relic, and not as the viable and vibrant culture we have today. This is an impact that BLM is not addressing.

26 BLM's citing to EPCA for authority to proceed with amending the 1998 ROD was such a blatant red herring that we think BLM knew it couldn't use EPCA as authority for its amendment and keep a straight face if arguing before a court.



Note: Construction flights only, does not represent routine operations that were initiated near the end of major construction.

Source:
PAI, 2002a

Figure 2.3.6-1
Historical Flight Frequency

Document No. 1



May 16, 2001

The Honorable George W. Bush
President of the United States
The White House
Washington, D.C. 20500

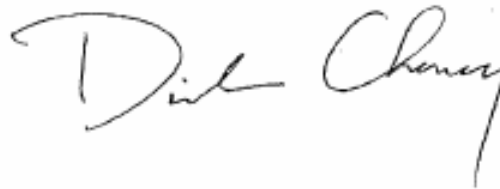
Dear Mr. President:

On behalf of the National Energy Policy Development Group, I submit for your consideration our National Energy Policy report. As you directed us at the outset of your Administration, we have developed a national energy policy designed to help bring together business, government, local communities and citizens to promote dependable, affordable and environmentally sound energy for the future.

The report reflects the requirements and philosophy you set out for our work. It envisions a comprehensive long-term strategy that uses leading edge technology to produce an integrated energy, environmental and economic policy. To achieve a 21st century quality of life -- enhanced by reliable energy and a clean environment -- we must modernize conservation, modernize our infrastructure, increase our energy supplies, including renewables, accelerate the protection and improvement of our environment, and increase our energy security.

We submit these recommendations with optimism. The tasks ahead are great but achievable. To meet our energy challenge, we must put to good use the resources around us and the talents within us. It summons the best of America and offers a healthier environment, a stronger economy and a brighter future for the American people.

Sincerely,



Enclosure

Document No. 2

[Response to 14.001]

The BLM has considered the arguments regarding whether it is reasonable to project that oil and gas development in NPR-A will occur with isolated sets of road-linked processing and production pads that are themselves not linked to the existing larger oil development infrastructure at Prudhoe Bay or to other isolated sets of processing and production pads. The Bureau continues to consider such a scenario the most likely way to develop oil and gas in NPR-A. We consider the arguments provided in the "Transportation" section, "Roads" subsection, in Chapter 4 to be valid. Such a scenario represents how Badami and Alpine have been developed.

[Response to 14.002]

The text on air traffic under the logistics subsection of the basic assumptions section of Chapter 4 has been modified to better describe the air traffic associated with the Alpine Central

Processing Facility.

[Response to 14.003]

The cited sentence did not present what is considered a likely development, but rather an unlikely hypothetical. The passage in the Sociocultural impact section has been edited to clarify the intent of the sentence.

[Response to 14.004]

The DSEIS acknowledges that displacement may occur and that it may decrease caribou productivity. The text has been revised in the cumulative section to make this point more clear and to state the possibility of negative population level effects on the TLH.

[Response to 14.005]

The DSEIS acknowledges that displacement may occur and that it may decrease caribou productivity. The text has been revised in the cumulative section to make this point more clear and to state the possibility of negative population level effects on the TLH. The discussion in the DSEIS also includes the results from Carroll et al. (2005) regarding TLH calving success within and outside of the no leasing and no surface occupancy areas of Alternative A. It is not the intent of the BLM to understate or ignore these risks, but to clearly recognize their existence while being unable to state precise outcomes due to the uncertainties involved. Those uncertainties include just what development will occur and where, and what effects climate change may have on calving caribou.

[Response to 14.006]

The BLM agrees that a reasonable development scenario would include both roads and pipelines, although not all pipelines would be associated with permanent roads. The text of the SEIS has been revised to clarify that pipelines would have either no permanent roads associated with them, or roads would be built with a minimum separation from pipelines of 500 feet. The important consideration from the perspective of caribou is the height of a pipeline and the distance between it and any nearby road. There has been adequate summer research on caribou response to pipelines in the absence of roads to conclude that pipelines at least 5 feet above the ground and at least 500 feet from a road do not significantly hinder caribou movements. Less research results are available during winter when snow lies on the ground, but the data available indicate that pipelines 7 feet above the ground do not significantly hinder caribou movements. See Lawhead et al. (2006) for a review. Required Operating Procedures for Alternatives B, C and D state that pipelines shall be elevated a minimum of 7 feet and separated from roads a minimum of 500 feet except where not feasible within narrow land corridors between lakes or where pipelines and roads converge at a pad. The BLM expects that enforcement of these requirements will preclude interference of caribou movements by these infrastructure features.

[Response to 14.007]

The BLM acknowledges that in most winters a majority of the TLH remains on the coastal plain. See Map 3-20 and text section 3.3.7.1. The BLM's assumption regarding the effects of seismic exploration on wintering caribou is based on a lack of evidence that caribou survive the winter better in the absence of seismic exploration than in its presence. The BLM conducts caribou research and monitoring in cooperation with ADFG and the NSB, and the NSB is currently attempting a quantitative study of this issue. It is difficult to conduct, however, because success requires the correct combination of activities (over-wintering caribou and seismic exploration) in time and space. The researchers cannot control any of these variables. Aside from off-road travel such as during seismic exploration, industrial presence during winter

would include infrastructure and associated on-pad activities and noise, and aircraft traffic. Air traffic over caribou winter ranges would be required to fly at least 1000 feet above ground. Pipelines would be required to be at least 7 feet off the ground, to account for snow depth. Reactions of caribou to other fixed installations are expected to be similar to their reactions to North Slope villages, including Barrow. Caribou have been known to remain in close proximity to human activity in villages during winter. Nonetheless, it is true that the effects of oil development facilities on caribou winter behavior and survival are not known for Alaskan North Slope caribou. The text of the cumulative effects section for terrestrial mammals has been revised to discuss this issue and to state the potential for adverse consequences to caribou survival and productivity. The BLM has considered the threat of potential impacts to the population level of the TLH as a result of development under all alternatives, and discusses the results of each alternative's analysis in the ANILCA 810 evaluation. However, the potential impacts that were identified and discussed were found not to result in a significant restriction to subsistence as per the criteria outlined on page A-4, i.e. a substantial reduction in population. Given the development scenario as presented within the plan, the BLM cannot quantitatively state the probability that a substantial reduction in population would occur, only qualitatively that it might occur. If any development proposal is submitted to the BLM in the NE NPR-A, a thorough environmental analysis of the proposed development will occur including another ANILCA 810 evaluation.

[Response to 14.008]

The discussion in the DSEIS includes the results from Carroll et al. (2005) regarding TLH calving success within and outside of the no leasing and no surface occupancy areas of Alternative A. It is not the intent of the BLM to understate or ignore these risks, but to clearly recognize their existence while being unable to state precise outcomes due to the uncertainties involved. Those uncertainties include just what development will occur and where, and what effects climate change may have on calving caribou. The impacts to caribou in the subsistence section TLH are taken directly from the caribou sections of Chapter 4, as it is customary to discuss impacts to subsistence in two broad categories: 1) impacts to the subsistence resources themselves; and 2) impacts to the subsistence users of the resources. In order to address the first (impacts to the resource), the discussion comes from the primary text for said resource (i.e., caribou, fisheries, birds, etc.).

[Response to 14.009]

The DSEIS acknowledges that displacement may occur and that it may decrease caribou productivity. The text has been revised in the cumulative section to make this point more clear and to state the possibility of negative population level effects on the TLH.

[Response to 14.010]

The impacts of making additional acreage available for oil and gas leasing in the areas west and north of Teshekpuk Lake on subsistence is discussed for every action alternative in the SEIS. See the sections entitled Oil and Gas Exploration and Development Activities within Chapter IV Environmental Consequences Alternative B: Subsistence, Alternative C: Subsistence and Alternative D: Subsistence for this discussion.

[Response to 14.011]

The BLM means no disrespect to the residents of Nuiqsut and is grateful for the continued participation of the community in our planning processes. However, the assertion that consultation with affected communities is not effective in mitigating conflicts is in opposition to recommendations made by many other residents (including such entities as the AEWC, ASRC and the NSB) that consultation is a valuable tool not only for bringing the issues of the conflict

to light, but also for brainstorming solutions to these conflicts. Finally, the BLM does not claim that mitigation will totally eradicate a conflict or impact. Instead, the goal of mitigation is to lessen whatever negative effect may result.

[Response to 14.012]

The discussion under Alternative A of impacts to subsistence uses from aircraft is found in the section entitled Effects of Disturbances-Aircraft Use under Activities not Associated with Oil and Gas Exploration and Development. Because aircraft use is commonly associated with research (as well as oil and gas activity), this is the first place in the text that the effects of aircraft use is described in detail in the SEIS. From here, the subsequent discussion regarding aircraft use associated with oil and gas activity refers back to this detailed description. At this time, there is much testimony from residents regarding the fact that aircraft use is a major disruption to subsistence harvesters, and this discussion is included in the SEIS. However, there is no data at this time to indicate a reduction in harvest levels for various resources as a result of aircraft disturbances. In fact recent caribou harvest numbers appear to be well within the range of harvests that occurred prior to oil and gas exploration (and associated flights) in the NPR-A. The purpose of Chapter 4 is to identify impacts as a result of proposed actions. Since we know from testimony from residents of Nuiqsut and other North Slope communities that aircraft does disrupt hunting opportunity on a case-by-case basis, this is what we have focused on in the discussion of impacts. Because the data that we have regarding the number of caribou harvested does not seem to indicate a reduction in overall harvest by the community, we do not focus on this as an impact.

[Response to 14.013]

As the comment highlights, there are unfortunately no studies which directly address the question of health impacts of the development that has occurred to date on the community of Nuiqsut. NEPA requires that agencies utilize the best existing data to complete an impact analysis. Accordingly, BLM has relied on the existing data, data from other populations that may be generalizable to the North Slope, and accepted principles of health and illness to analyze the potential health effects of the proposed action.

[Response to 14.014]

The impacts to subsistence are discussed at length both in separate sections devoted to subsistence impacts for each alternative and in Appendix A. The statement in the public health subsection is informed by the subsistence discussion and is a reasonable conclusion based upon potential subsistence impacts and current public health scientific literature.

[Response to 14.015]

Alternatives B, C, and D would not authorize a road connecting to the road network outside the NPR-A. While they do not prohibit such a road as does Stipulation 48 of Alternative A, this is largely a distinction without a difference. Regardless of which alternative is adopted in the ROD, an EIS would be required for BLM to authorize a road connection to the road network outside the planning area. The BLM, moreover, considers such a road as speculative (see Chapter 4's discussion of speculative developments under the cumulative impacts section). As such, it is inappropriate for the Supplemental IAP/EIS to consider its impacts.

The 3/4-mile coastal setback applies to all areas along the coast of the planning area, not just the area north of Teshekpuk Lake.

[Response to 14.016]

The authority for undertaking this IAP/EIS rests on several Federal laws, including the Naval

Petroleum Reserves Production Act and the Federal Land Policy and Management Act. For more discussion of the authority for undertaking this IAP/EIS, see the subsection entitled "Authority" in Chapter 1. The IAP/EIS is undertaken consistent with these and other relevant laws and regulations.

[Response to 14.017]

The stipulations and ROPs present a range of potential protective measures. These have evolved through the original IAP/EIS in 1998, and the Amended and Supplemental IAP/EIS processes in response to public and agency comments and internal review by BLM. In addition, potential mitigation measures were introduced in the Supplemental IAP/EIS.

[Response to 14.018]

The BLM maintains that the Draft Supplemental IAP/EIS considered an appropriate and legally sufficient range of alternatives to meet the purpose and need described in Chapter 1.

[Response to 14.019]

This statement was included under Alternative D at the request of the North Slope Borough, a cooperating agency. The statement has been revised to read "Bowhead whales could be deflected or their behavior made more dangerous to hunters if marine traffic increases in the near shore areas of the Beaufort Sea, including the barging of equipment to staging areas in the Northeast NPR-A (NSB 2004)" and is included in all action alternatives in the Final SEIS.

[Response to 14.020]

The discussion regarding avoidance of infrastructure is found in the Development and Permanent Facilities Section of Chapter 4 under Alternative A: Subsistence. Currently, the only information that we have regarding the increase in costs and risk associated with subsistence harvesting is in the abstract—namely, through testimony by residents of Nuiqsut and other communities on the North Slope. It discusses information collected by Pedersen (2000, 2001) regarding the percentage of harvests that occurred at distances from infrastructure. The BLM uses this information as support for the statement that hunters avoid areas of infrastructure, thus allowing us to state that areas where facilities will be proposed will result in avoidance of those areas by harvesters. However, at this stage (leasing) the BLM does not know where development will be proposed within the planning area, making site specific assertions impossible. Once development is proposed, the BLM is required to do a comparable planning effort to this SEIS, including an analysis on subsistence use, an ANILCA 810 evaluation, etc.

[Response to 14.021]

The BLM does not understand why this statement is considered controversial by Kuukpik Corporation. The discussion from Chapter 3 Affected Environment: Sociocultural Systems indicates the importance of sharing resources within communities as well as with other communities, and characterizes this as a key cultural value, as well as a component of social organization. Any reduction in the amount of resources harvested corresponds to less resources available for sharing, thus the identification of a potential impact. The failure to include this statement in the conclusion for Alternative D was an oversight, and has been corrected in the final.

[Response to 14.022]

The BLM does not understand why you characterize this statement as being "only in the abstract." The BLM is in no way implying that books and computers should be used as replacements to learning about your culture and values, especially given that the Iñupiat culture remains vibrant and alive right now. The BLM does recognize what is at stake here, and takes seriously our commitment to provide the least impact possible to your subsistence way of life.

COMMUNICATION NUMBER 15
From Kuukpik Corporation

Issac Nukapigak, President, speaker at Nuiqsut Public Meeting October 11, 2007

Thank you. First I would like to welcome BLM and Entrex. And thanks for coming to the village to hear our testimony and concerns about the Supplemental EIS on the Northeast NPR-A planning area.

For the record, Isaac Nukapigak. I'm one of the original resettlers of Nuiqsut, and the current president of Kuukpik Corporation, which is for Nuiqsut under the Land Claim Act. I'm also a whaling captain, and the current vice president of the -- the Whaling Captain Association, which was organized and operate under the umbrella of Alaskan Eskimo Whaling Commission.

I make these comments as a resident of Nuiqsut, as the president and the whaling captain, and most importantly a lifelong -- as a subsistence user in the Northeast NPR-A.

Kuukpik, the Whaling Captain Association, and myself personally, and, I think it is safe to say, pretty much the entire community of Nuiqsut oppose any changes to the management plan and the decision adopted as part of the '98 Northeast NPR-A. Specifically, we don't want to see additional land opening for lease -- leasing, especially these lands to the northeast of Teshekpuk Lake. We oppose any changes to the stipulation adopted in the '98 Record of Decision, and we specifically oppose adoptions of the proposed ROPs. We support Alternative A, which is no-action alternative.

I want to make it clear to BLM that our subsistence activity -- activities are already seriously impacted by oil and gas development going all around the village of Nuiqsut. Any extended leasing would cost even greater destruction to our subsistence activity and our culture.

I want to focus today on how BLM, in both the amended IAP/EIS, and in this Supplemental IAP/EIS, is underestimating past -- future subsistence impact from oil and gas development. These patterns of underestimating of impact on -- on subsistence resources and activity around the community of Nuiqsut must not continue.

We have explained in the past comment letters testimony to the BLM of the presence of the oil and gas prevent subsistence activity in area farther greater than the footprints of the paths, roads, pipeline.

[15.001] Third or -- third, where more of our traditional subsistence rates is aggravate by oil and gas infrastructures, in effect, they're no longer available for sub- -- for subsistence. This makes the remaining subsistence land even more critical, and more intensive use than in the past. This makes the area around Teshekpuk Lake that was not open to lease, and developing '98 NPR-A management plan even more important. It is the area we can go hunt that's outside the shadow of industry.

[15.002] BLM had largely accept these points, but then proceed to critically underestimate how badly leasing the NPR -- the NPR-A Teshekpuk Lake area and allowed development would impact our subsistence activity. As a result, the supplemental EIS does not adequately address the cumulative impact of any plan that open more area -- to more area in the NPR-A northeast for development.

[15.003] One way that BLM underestimate impact on subsistence is by overestimating the effectiveness of measures that BLM claim that would mitigate -- that would mitigate the impact. In the EIS, we see that BLM assure over and over, after the consolidation with the committee will mitigate the impact of -- to subsistence.

This is nonsense.

Telling us about the impact doesn't mean that the impact -- the impact will go away. Too -- too -- all too often the substance advisory panel is told what BLM plans to do, rather than being asked, before the decision is made, whether its partial proposal is a good idea. The decision to reopen the '98 Northeast NPR-A Environmental Impact Statement is a classic example.

Keeping us informed about industry activity in our subsistence race that -- that reduce the impact of those activity on subsistence. BLM need to stop. **[15.004]** BLM -- I'll say again -- BLM needs to stop ignoring us and accept that consolidation re- --consolidation requirement does not mitigate, does not mitigate the impact to subsistence.

[15.005] BLM also underestimate the impact of allowing oil and gas in the area around Teshekpuk by ignoring that lively -- that likely impact to our subsistence species. Specifically the Teshekpuk herd is an important source of caribou that we harvest as they migrate from the west.

Studies shows that if BLM adopt the plan that allowed development in the Teshekpuk herd calving area, the herd will calve some place at least. Scientific show that if the caribou from the Teshekpuk herd -- Lake have their calving outside the calving area, the survival rate of the calves is much lower than when the herd is calving at traditional calving area on the northeast of Teshekpuk Lake. This is extremely serious threat to size of the herd and the number of animals that will be available for us to harvest.

[15.006] BLM had all this information, but conclude that development in the calving area will not have a great impact on caribou and on us. This conclusion is wrong. It is not supported by either scientific or know by traditional knowledge.

[15.007] Bowhead whaling. Bowhead population is still recovering from the past commercial whaling harvest. The supplemental EIS recognize, for the first time, that development along the coast and offshore may threaten the recovery of the bowhead whale population from past commercial whaling. As a result, that could cut our quota -- our whaling quota. Words cannot express to BLM how much a cut in that quota would impact our subsistence harvest and our way of life.

In order to preserve our whaling quota, BLM must remove the area northeast of Teshekpuk Lake, and along the coast, of oil and gas leasing, and make it clear for the rest of the federal government, including Minerals Management Service, that no oil and gas development that could prevent recovery of bowhead population should be allowed.

[15.008] The impact on subsistence also underestimated by BLM, because BLM used incorreced assumptions in the EIS about what future development would be like. BLM makes its future development projection using a model of a roadless. Alpine development was presented by the industry in the 1990s. We know that Alpine development of today is not the Alpine development that the oil industry promises. The level of activity and the impact of the activity are much greater than the industry will promise when the permit for Alpine was sought. The gravel footprints of Alpine keep expanding. Probably ten times more planes and helicopters landing in Alpine than was projected. Industry will keep tell -- talking about

roadless development, but propose to connect to Alpine for future NPR-A development with a bridge across the Niqliq Channel and the road.

We have told that BLM that there is a difference between development and -- and projection, and that development that is reasonable expected. This has been falling of a deaf ear. I want to make that change. **[15.009]** The threats to our subsistence activity -- activities also threaten our sur- -- our survival as Inupiat. Subsistence and our culture ties together. Without whaling, without adequate caribou pop -- population, and without the generous sharing of these resources, our culture will die, because BLM underestimate the impact of large development around the Teshekpuk Lake on -- on our subsistence activity. BLM has not adequately addressed the cumulative impact that's open a new area for development in NPR-A -- on the Northeast NPR-A, which will have our culture and our subsistence resources.

The bottom line of my comment on the impact of -- to subsistence and the culture of these, us who live in the NPR-A, is simple. BLM should not open the Teshekpuk Lake area for new leasing and development. **[15.010]** We know the impact of such a decision will be greater than the BLM currently estimate. Until BLM understand these impact, it cannot adequately complete the EIS, nor can BLM prepare to analyze required by Section 810 of ANILCA.

I also wanted BLM to know the current stipulation that was adopted in 1999 -- 1998 Record of Decision is far better at protecting subsistence and resources in the N -- in the Northeast NPR-A land. The -- the performance-based standard that BLM said it want to implement. The '98 stipulation gave us guidance, it gives firm guidance to industry, and therefore a firm protection.

The '98 stipulation give us the performance-based operating procedure -- procedure that BLM wants to switch to provide less guidance, and, on the face, to provide less protection. And the current management granting greater inconsistent discretion what protection will apply to partial protection allowing greater potential for abuse and oil -- oil industry political enforce on what is the -- on what is supposed to be a nonpolitical process.

We have explained all of this to BLM in our past comment letters on both the Northeast and the Northwest NPR-A planning area. BLM continue to ignore our explanation and our agreement. **[15.011]** Instead, BLM conclude that the protection was just as strong, but failed to come up with any reasonable explanation of how that could be so. As part of the supplemental EIS, BLM need to actually analyze.

I'm on my last page.

The difference between the '98 stipulations and the performance-based management that BLM wanted to implement on the Northeast NPR-A. Once that analyze is done, you should be giving the opportunity to review and make comment. BLM should not change the current management of the Northeast NPR-A which was adopted in the '98 Record of Decision.

As the BLM knows, the current management is a result of the lengthy negotiation and agreement between public agencies, the Native communities, the industry, and the environ- -- and then the environmental group. There is no reason to change this management plan. And there is every reason to make it. Kuukpik Corporation will submit more detailed written comments by the deadline. I encourage everyone here to make a written comment to BLM as well. I thank BLM and Entrex for coming here to take our testimony. Thank you.

(Translation given by Mr. Nukapigak.)

Second Testimony:

Yes. I'd -- I'd like to make my last remark pertaining to your -- to your proposed -- your intent propose to admit these Supplemental Integrated Action Plan Environment Impact Statement.

We're talking about 4.6 million acres. And -- and these stipulations that's been implemented, these were our assurance protections that we worked so hard with collaboration with the agencies and our municipal governments. With -- with these four alternative that you're proposing, your -- your -- the way I see it is that your -- what -- your plans, by setting up these standard performance-based procedures is weakening our stipulate -- our protections. Our livelihood is being jeopardized by what you guys are proposing.

Just recently, yesterday, I don't know if you heard it on the news, or if you read it on the paper, one of the most proactive explorer with its partners, Conoco Philips with its partners, Anadarko, partnering out the resource relinquished their leases in where you're proposing to -- for a lease sale, because there's take -- indicated in paper, there is no economic oil and gas that can be found.

We're talking 300,000 acres of their holding lease rights that they relinquished rights in that path. Right in that area where you proposed to open up for potential additional lease sale to occur. A major -- just think about it, a major player in -- in oil and gas in the nat- -- in this nation because of high costs of exploration.

Conoco Philips has been -- have been the one -- like I say, was the major player, and was -- and notified BLM that they're relinq- -- they're relinquishing their lease rights. Forty-one tracts. A total of 300,000 of acres has been given back to BLM, because they indicated very well there is no potential economic oil and gas in that area.

Which indicate that I'm worried of these protections that we have worked so hard from this community which is going to be stripped, which will jeopardize my subsistence livelihood down the road, or my next generations that we are dealing with.

I mean, that's -- is the kind of a Russian roulette that our federal government is playing with our subsistence livelihood. You know very well that we can't -- you know, you have to be a competitor, a very competitive to be in that business market. And when you have so many competitors out there that could easily walk over you and have to compete, which means that we have -- we -- we lose a bit.

I mean, my folks have to look at other source, a subsistence. You guys are playing. You are jeopardizing our subsistence lifestyle by -- by -- by trying to omit in the Supplemental EIS. I think it's about time that federal government needs to wake up. We're -- like what -- just like what Bernice say, we're -- we're part of America. We even know -- we know that the nation needs the -- the energy. We understand that. But there needs to be a balance. There needs to be a balance between economic, at the same time protection of our subsistence lifestyle.

You strip your proposed amending the -- the Northeast NPR-A. It's not a balance. You're taking away a piece of my subsistence livelihood by trying to omit these guaranteed stipulations of our guaranteed protection to our subsistence livelihood with this based performance measures, which gives an industry that much more comfort.

What about us? Why don't you give me some of that much comfort by leaving those stipulations alone? I think that's a compromise. Thank you.

[Response to 15.001]

The discussion regarding avoidance of infrastructure is found in the Development and

Permanent Facilities Section of Chapter 4 under Alternative A: Subsistence. Currently, the only information that we have regarding the increase in costs and risk associated with subsistence harvesting is in the abstract—namely, through testimony by residents of Nuiqsut and other communities on the North Slope. It discusses information collected by Pedersen (2000, 2001) regarding the percentage of harvests that occurred at distances from infrastructure. The BLM uses this information as support for the statement that hunters avoid areas of infrastructure, thus allowing us to state that areas where facilities will be proposed will result in avoidance of those areas by harvesters. However, at this stage (leasing) the BLM does not know where development will be proposed within the planning area, making site specific assertions impossible. Once development is proposed, the BLM is required to do a comparable planning effort to this SEIS, including an analysis on subsistence use, an ANILCA 810 evaluation, etc.

[Response to 15.002]

The impacts of making additional acreage available for oil and gas leasing in the areas west and north of Teshekpuk Lake on subsistence is discussed for every action alternative in the SEIS. See the sections entitled Oil and Gas Exploration and Development Activities within Chapter IV Environmental Consequences Alternative B: Subsistence, Alternative C: Subsistence and Alternative D: Subsistence for this discussion.

[Response to 15.003]

The BLM does not claim that mitigation will totally eradicate a conflict or impact. Instead, the goal of mitigation is to lessen whatever negative effect may result.

[Response to 15.004]

The BLM means no disrespect to the residents of Nuiqsut and is grateful for the continued participation of the community in our planning processes. However, the assertion that consultation with affected communities is not effective in mitigating conflicts is in opposition to recommendations made by many other residents (including such entities as the AEWC, ASRC and the NSB) that consultation is a valuable tool not only for bringing the issues of the conflict to light, but also for brainstorming solutions to these conflicts. Finally, the BLM does not claim that mitigation will totally eradicate a conflict or impact. Instead, the goal of mitigation is to lessen whatever negative effect may result.

[Response to 15.005]

The DSEIS acknowledges that displacement of calving caribou cows from areas near roads is likely, that calving success of TLH cows is significantly lower in areas removed from the Teshekpuk Lake Surface Protection Area, and that the result of displacement may be a decline in productivity. The text has been revised to make that point even more clear, and to state that negative population level effects are one potential outcome.

[Response to 15.006]

The DSEIS acknowledges that displacement of calving caribou cows from areas near roads is likely, that calving success of TLH cows is significantly lower in areas removed from the Teshekpuk Lake Surface Protection Area, and that the result of displacement may be a decline in productivity. The text has been revised to make that point even more clear, and to state that negative population level effects are one potential outcome. The ANILCA Section 810 analysis for the cumulative effects on subsistence in the DSEIS concluded there would be a significant restriction of subsistence use due to a decrease in resource abundance, significant alteration in the distribution of subsistence resources, and a significant restriction on the access of subsistence users to those resources.

[Response to 15.007]

The BLM understands how devastating a cut in the whaling quota would be to the residents of the North Slope, and has including discussion regarding this in the Cumulative Impacts: Subsistence section in Chapter 4. It is result of impacts such as this that the BLM found that the cumulative case may result in a significant restriction to subsistence in the ANILCA 810 evaluation.

[Response to 15.008]

While the analysis as presented in the SEIS does characterize the future developments as roadless, this refers to the fact that there will be no gravel road connecting the area of development to outside of the NPR-A. However, the BLM recognizes the fact that each development will have a number of in-field roads between production wells and central processing facilities. Each alternative has a certain amount of estimated road mileage associated with it, as seen in Table 4.2-G Estimated Surface Disturbance for Oil-related Activities under each Alternative.

[Response to 15.009]

The cumulative impact analysis provides a legally sufficient analysis of potential impacts. Quantitative estimates of impacts have not been identified for all resources and uses because of the great predictive uncertainties associated with complex ecological factors and because, even if environmental systems were less complex, there is great uncertainty surrounding which potential development may occur and in what manner. Note that in 2003 the National Research Council stated, "It is impossible to characterize future development infrastructure and activity in areas that have not been fully explored. Until exploration has occurred, the amount, distribution, and exact nature of any extractable hydrocarbon deposits remain unknown. But the amount, distribution, and type of hydrocarbon deposits profoundly influence the nature and extent of development infrastructure, thus how many roads and pipelines will be needed, and how much activity will occur and when it will occur." (NRC, 2003, p. 116)

[Response to 15.010]

The cumulative impact analysis provides a legally sufficient analysis of potential impacts. Quantitative estimates of impacts have not been identified for all resources and uses because of the great predictive uncertainties associated with complex ecological factors and because, even if environmental systems were less complex, there is great uncertainty surrounding which potential development may occur and in what manner. Note that in 2003 the National Research Council stated, "It is impossible to characterize future development infrastructure and activity in areas that have not been fully explored. Until exploration has occurred, the amount, distribution, and exact nature of any extractable hydrocarbon deposits remain unknown. But the amount, distribution, and type of hydrocarbon deposits profoundly influence the nature and extent of development infrastructure, thus how many roads and pipelines will be needed, and how much activity will occur and when it will occur." (NRC, 2003, p. 116)

[Response to 15.011]

The BLM does not agree that the stipulations and ROPs considered in this IAP/EIS remove or weaken the protections provided in the 1998 ROD. The agency maintains that the alternatives under consideration fully meet the requirements to protect the lands and resources as required by law and regulation. The Supplemental IAP/EIS examines the effectiveness of the stipulations and ROPs for each resource/use and for each alternative. These descriptions can be found in Chapter 4's discussion; particularly see the discussion entitled "Effectiveness of Stipulations and Required Operating Procedures" for each resource/use for each alternative and in Tables 2-2 and 2-3 in Chapter 2. Descriptions of the effectiveness of potential mitigation measures are

provided immediately following the discussions of the potential mitigation measures as they are introduced in Chapter 4.

COMMUNICATION NUMBER 16
From Ukpeagvik Iñupiat Corporation
Anthony Edwardsen, President & CEO

29 October 2007

Thomas P. Lonnie
BLM, State Director
Thru: ENSR
Northeast NPR-A Supplemental IAP/EIS Comments
ENSR Project Office
1835 South Bragaw Street, Suite 490
Anchorage, AK 99508

Subject: UKPEAGVIK INUPIAT CORPORATION COMMENTS TO MITIGATE IMPACTS - NE NPR-A

Dear Mr. Lonnie,

Per Federal Register Notice of Availability (AK-930-07-1310-DS), Ukpeagvik Iñupiat Corporation provides the following comments to assist the Bureau of Land Management in the development of the final Supplemental Northeast National Petroleum Reserve Alaska Amended Integrated activity Plan/Environmental Impact Statement. The Supplement to the Amended IAP/EIS is being developed in response to the 25 September 2006 decision by the U.S. District Court for the District of Alaska that vacated the January 2006 Record of Decision and enjoined the Secretary of the Interior from further action for a planned lease sale in the NE NPR-A under that ROD. The BLM will conduct additional analyses to address the deficiencies indentified by the court and update relevant sections of the Amended IAP/EIS. The current Federal Register Notice states the BLM will consider comments specifically aimed at mitigating cumulative impacts to the area.

INTRODUCTION:

Ukpeagvik Iñupiat Corporation represents corporate and socioeconomic interests of our shareholders number nearly 2,400 Iñupiat residents of Barrow, Alaska. We are a Village Corporation developed under the guidelines of the Alaska Native Claims Settlement Act and have surface title to roughly 220,000 acres adjacent to NPR-A. Our business profiles include among others, general and specialty construction and project management, remote camp logistics and fuel supply, engineering, technical services, marine transportation, oilfield services, telecommunications, insurance, and lodging, office and vehicle rental on Alaska's North Slope. UIC Oilfield Services provided NW NPR-A logistics support services from both our Cape Simpson Industrial Port and Borrow facilities during the 2005-2007 exploration seasons. Currently, UIC is expanding oilfield support services with our recently launched Umiat Operations Center at the southern, Colville portion of NPR-A.

With Prudhoe Bay oil production in decline, it is very important to the State of Alaska and North Slope economies that appropriate new frontier areas be leased, explored and developed. North Slope oil and gas development currently funds more than 80% of the State of Alaska's budget. UIC's shareholders and other North Slope residents benefit from State programs. North Slope production also provides a large and important property tax base for the North Slope Borough government. Borough tax revenue is used to provide education and many other

essential public services and facilities to eight North Slope Villages, to our shareholders, and to other Borough residents. Oil and gas related activities are the primary private sector economy in the Arctic. Oil development creates jobs for our shareholders as well as oilfield services contract opportunities for UIC, its subsidiary companies, other Village and Regional Corporations, and other North Slope businesses.

POTENTIAL MITIGATING MEASURE:

[16.001] Currently, we are working closely under a very successful partnership with the United States Air Force (USAF), North Slope Borough (NSB), and Bureau of Land Management (BLM), to transfer Pt. Lonely, Alaska, Short Range Radar Station property to the NSB and UIC to create an industrial port supportive of future oilfield services. This joint effort seeks the beneficial reuse of existing infrastructure in the NE APR-A to reactivate an existing port of entry aimed to provide necessary oil-field logistic service operations. Utilizing Pt. Lonely's current industrial footprint will mitigate cumulative impacts to the Teshekpuk Lake Special Area (TLSA). At present, UIC anticipates Right of Entry to Pt. Lonely under Air Force authorization and will begin upgrading those facilities during the 2008-09 timeframe to prepare for the future NE NPR-A leasing and exploration activity.

Pt. Lonely, as an industrial site, is distinctively located to provide future support for the NE NPR-A oil and gas exploration and production activities in such a way that will reduce cumulative impacts in the TLSA and surrounding regions. Most unique are the immediate capabilities to provide certified build fuel service, large, active runway and apron surfaces, communications, equipment and machinery lay down, equipment maintenance shop, warm storage, hangar and full service man-camp facilities. UIC recommends using this existing, operation site as the staging area and port to support sustainable, less intrusive and proven exploration methods that include ice roads, ice pads, mobile man-camps, and other modern mitigation measures. Pt. Lonely will act as nexus for input and output of all oil and gas exploration and production activity and material, minimizing the footprint in the TLSA. As the only port within NE NPR-A, we also recommend drilling mud and other materials that require special handling and export be moved through Pt. Lonely.

[16.002] Additionally, Umiat, along with Colville River, is being refurbished to enhance existing oilfield services as exploration companies continue to find additional satellite fields in that area. UIC encourages the use of Umiat, as another existing industrial center, to act as a nexus for activity, thereby mitigating cumulative impacts to the Colville River Special Area.

[16.003] Encouraging the use of existing infrastructure for all oil and gas exploration will help meet the need to provide "maximum protections" of the environment described in the 2005 Final Amended IAP/EIS. We believe use of Pt. Lonely, Umiat Operations Center and the Cape Simpson Industrial Port are key elements to reducing industry's footprint, and recommend all operators be encouraged to utilize these existing facilities.

HISTORICAL PERSPECTIVE:

The oil industry has made important progress in recent years in reducing the footprint of energy exploration and development in the Arctic through better land use planning, management, and remarkable advances in technology. UIC is confident that the experience gained over the past thirty years of successful oil development at Prudhoe Bay and in the Central Arctic, together with a record of diligent and responsible regulation by Federal, State, and local agencies to protect the environment and natural resources, provides a strong foundation on which to proceed. Upon this foundation UIC is also confident BLM will continue

to administer a balanced and responsible oil and gas leasing program in the NE NPR-A planned area. Access to TLSA oil and gas today is vital to develop the key infrastructure needed to promote economically feasible development of NE NPR-A in the near future.

Some presentation of data, identification of issues, and expressions of concern by certain parties may create the impression that is a virgin wilderness area, filled with exotic animal species and untouched by the hand of man. Obviously, the facts are different. The northern one-third of NPR-A is an area heavily used by Iñupiat people who live in four Villages located within NPR-A and two villages located near NPR-A. There are hundreds of allotments, cabins, and hunting and fishing camps scattered throughout NPR-A, including the NE NPR-A Planning area. Additionally, Federal oil and gas exploration conducted between 1944 and 1981 resulted in very extensive seismic surveys and the drilling of 109 exploratory wells all across NPR-A. Drilling many of these wells also involved the construction of gravel airstrips, camp facilities and roads from airstrips to the drilling pad sites. It is important that this current review of the NE NPR-A be rooted in history and reality, based upon the competent studies previously conducted by BLM and other agencies.

It is also very important that any future proposed oil and gas lease sales in the NPR-A be based upon consultation with local residents on ways to minimize impacts on subsistence resources and the traditional use of the Iñupiat people. Six of the eight Villages on the North Slope are located within or near NPR-A's 23 million acres. The Iñupiat people who are residents of these Villages make extensive use of NPR-A for subsistence hunting, fishing, trapping, plant gathering, and for cultural and traditional purposes. Many Iñupiat people have cabins and subsistence camps within NPR-A that they and their family members have used for generations. These subsistence and traditional uses must be recognized and appropriately accommodated in BLM's planning process.

CONCLUSION:

UIC is favorable to exploration and production in NPR-A. However, our shareholders, including our local Barrow Senior Citizen's Advisory Council, are adamant in taking reasonable measures to protect access to vital subsistence resources needed to meet our natural requirements and cultural traditions for generations to come. Furthermore, UIC is dedicated to balancing core Iñupiat Values towards land management with the realistic needs of economic development for the region. With this in mind, UIC recommends Alternative D be considered for guiding the new Record of Decision. Alternative D provides a balanced approach by allowing access to the North and East of Teshekpuk Lake while utilizing appropriate stipulations and required operating procedures. We are also in favor of a possible phased lease approach concept described in the Supplement's introduction. Designing this approach with the support of local residents will provide future adaptability for industry, business services, and address some issues of access and protection for our renewable resources.

Thank you for considering UIC's comments.

Respectfully submitted,

Anthony Edwardson

President & CEO
Ukpeagvik Iñupiat Corporation

[Response to 16.001]

Use of existing infrastructure is consistent with stipulations and ROPs considered in the alternatives, such as Alternative A's stipulation 67 and ROP E-5 and Stipulation K-6 for the other alternatives. These facilities, however, may not be the most appropriate in all cases.

[Response to 16.002]

Use of existing infrastructure is consistent with stipulations and ROPs considered in the alternatives, such as Alternative A's stipulation 67 and ROP E-5 and Stipulation K-6 for the other alternatives. These facilities, however, may not be the most appropriate in all cases.

[Response to 16.003]

Use of existing infrastructure is consistent with stipulations and ROPs considered in the alternatives, such as Alternative A's stipulation 67 and ROP E-5 and Stipulation K-6 for the other alternatives. These facilities, however, may not be the most appropriate in all cases.

COMMUNICATION NUMBER 21

**From The Wilderness Society et al. Eleanor Huffines et. al
et. al, Submitted on behalf of several orgs**

Alaska Center for the Environment * Alaska Wilderness League* Audubon Alaska

National Audubon Society * Natural Resources Defense Council

Northern Alaska Environmental Center* REDOIL * Sierra Club

The Wilderness Society * Wildlife Conservation Society * World Wildlife Fund

November 6th, 2007

ENSR Corporation
Suite 490
1835 South Bragaw Street
Anchorage, Alaska 99508

Jim Ducker
Bureau of Land Management
Alaska State Office
222 West 7th Avenue
Anchorage, Alaska 99513-7599

via fax and hand delivery

RE: Comments on the Draft Supplemental Integrated Activity Plan and Environmental Impact Statement for the Northeast Planning Area of the National Petroleum Reserve-Alaska.

Alaska Center for the Environment, Alaska Wilderness League, Audubon Alaska, National Audubon Society, Natural Resources Defense Council, Northern Alaska Environmental Center, REDOIL, Sierra Club, The Wilderness Society, Wildlife Conservation Society and World Wildlife Fund submit the following comments on the Draft Supplemental Integrated Activity Plan and Environmental Impact Statement (DSEIS) for the Northeast Planning Area of the National Petroleum Reserve- Alaska (NPRA or Reserve) prepared by the U.S. Department of the Interior (Interior) Bureau of Land Management (BLM), and released for public review August 20, 2007.

To date, BLM has not adequately considered the substantive scientific and legal information detailed in our previous comments and those of other scientific and conservation organizations, Alaska Native organizations, local communities and the public. We incorporate all of those comments from the public again by reference here, including our letters commenting on the 1998 Northeast IAP/FEIS and ROD dated 03-12-98, scoping for the Northeast Amended IAP/EIS dated 10-31-03, the Northeast Amended DEIS IAP/EIS dated 8-20-04 and scoping for the Northeast Supplemental IAP/EIS dated 1-08-07.

Our organizations seek effective protection for the nationally and internationally recognized wildlife habitats and subsistence resources found in the Reserve. We support some oil and gas development in the Reserve but not at the expense of all other values. The most biologically rich and recognized wildlife and wilderness values of the region are not permanently protected. A

more balanced approach to the management of these natural resources is needed to protect the most sensitive areas and cultures.

I. SUMMARY OF KEY CONCERNS AND RECOMMENDATIONS

Upon review of the above referenced DSEIS, we have found egregious failings in the analysis. As written, the DSEIS needlessly violates the law and the agency's trust responsibility. It is devoid of scientific rationale and places the wildlife, fish and subsistence resources of the Teshekpuk Lake Surface Protection Area at significant risk.

* **[21.001]** The DSEIS fails to demonstrate that oil and gas development in the Teshekpuk Lake Surface Protection Area is warranted or permissible. The DSEIS fails to consider a sufficient range of alternatives, excluding more protective alternatives that may be warranted given new information about the sensitivity of the Teshekpuk Lake Area and threats posed to wildlife from climate change and increased oil activity in the Arctic.

* **[21.002]** CEQ requires a cumulative effects analysis to be a quantitative analysis of the impacts to resources, ecosystems and human communities not simply a list of actions and receptors. The DSEIS fails to clearly articulate, analyze, and model the relative probability of cumulative effects of each of the alternatives and fails to complete the required ecosystem-level approach to quantifying cumulative impacts. The DSEIS' qualitative discussion does not constitute an analysis and is inadequate for evaluating this significant action.

* **[21.003]** The best available science and methodology has been omitted from some of the most important analyses. There is important new information on various wildlife species, as well as information about climate change that must be considered and incorporated into the cumulative effects analysis in a quantitative way.

* **[21.004]** The evaluation of potential impacts from oil development activities in the DSEIS is based upon a series of proposed development scenarios that are incomplete and unrealistic when evaluated in the context of existing development in the region. As a result, the nature and extent of potential direct, indirect and cumulative impacts are significantly understated. A generic discussion of resources and potential impacts like those contained in the DSEIS cannot suffice as the required site-specific analysis.

* The proposed stipulations and required operating procedures for mitigating impacts from oil and gas development are insufficient to protect surface resources and value. **[21.005]** The DSEIS fails to evaluate the effectiveness of the proposed mitigation measures for each alternative and fails to provide scientific rationale for weakening the stipulations from the 1998 Northeast ROD.

* **[21.006]** BLM is nearly a decade into the original Northeast Plan yet there is no scientific baseline from which to monitor and measure the effectiveness of the plan and the stipulations. This was a fatal flaw in implementation of the original Northeast Plan and it has not been resolved in this DSEIS. BLM should reinstate the Research Monitoring Team.

* A fundamental purpose of NEPA is to "stimulate the health and welfare of man" (42 USC § 4321). Inclusion of the Health Impact Assessment (HIA) in the DSEIS represents a positive step forward in protecting public health and fulfilling the fundamental intent of NEPA.

[21.007] The DSEIS fails to cure fundamental flaws in the cumulative impact analysis. In the litigation that served as the impetus for this NEPA process, the U.S. District Court for the District of Alaska found that opening additional areas in the Northeast NPR-A to leasing could

facilitate increased development in the Northwest and further stress wildlife populations with habitat in both planning areas. The DSEIS fails to address the increase in infrastructure and development that would flow from opening nearly the entirety of both the Northwest and Northeast planning areas to oil development. The DSEIS also fails to take any kind of comprehensive look at the impacts to wildlife and habitats in the Northwest planning area and how impacts in the Northwest would exacerbate the impacts from opening the sensitive Teshekpuk Lake habitat to oil activities.

In the nine years since the release of the 1998 IAP/EIS and ROD, we have accumulated additional information and analyses that require BLM to be more restrictive and protective in the Northeast Planning Area, not less. To fulfill the agency's trust responsibility's, BLM must choose the No Action Alternative as the preferred action or complete a new supplemental IAP/EIS that adequately addresses the many significant failures in this document including the totally inadequate cumulative effects analysis.

II. FAILURE TO COMPLY WITH LAWS GOVERNING MANAGEMENT OF THE RESERVE

A. NATIONAL PETROLEUM RESERVE PRODUCTION ACT (NPRPA)

In the National Petroleum Reserve Production Act of 1976, Congress expressly recognized that the unique cultural, natural, fish and wildlife, scenic and historical values of the Reserve should be protected, and therefore transferred jurisdiction of the Reserve from the Secretary of the Navy to Secretary of the Interior. The National Petroleum Reserve Production Act directed the Interior Secretary to designate the Teshekpuk Lake, Utukok River Uplands, Colville River (and other areas yet to be determined) as Special Areas. Congress further directed the Interior Secretary to "assure maximum protection" for the subsistence, recreational, fish, wildlife, historical, and scenic values of the Special Areas (42 U.S.C. §§ 6502-03).

In 1998, the Final Environmental Impact Statement and Record of Decision (ROD) for oil and gas leasing in the Northeast Planning Area further recognized the unique values of the TLSPA by designating the Teshekpuk Lake Surface Protection Area (TLSPA) which protected fish and wildlife habitats within an area 857,860 acres in size. This included a 588,998 acre no-lease area and a southern band of 268,861 acres with no-surface activity. In so doing, the Secretary determined that such measures were necessary to meet the maximum protection obligation of the NPRPA. "The decisions in this ROD provide the maximum protection for the significant subsistence, recreational, fish, wildlife, historical, and scenic values of these Special Areas consistent with the requirements of the NPRPA for exploration of the Reserve" (1988 ROD at 14).

[21.008] There is no new scientific information or rationale to justify this complete reversal from the 1998 Northeast ROD. Leasing the Arctic Coast without a careful analysis of the impacts and without permanently protecting key areas is unwise and inconsistent with the statute.

B. FEDERAL LAND MANAGEMENT POLICY ACT (FLPMA)

Further, BLM is obligated to manage the public lands consistent with the concept of multiple use. The definition of multiple use (43 U.S.C. § 1702(c)) obligates BLM to prioritize the national public interest in our public lands in terms of both current and long-term needs. These needs (and uses) are both market and non-market based. BLM must consider the "relative" value of resources and cannot authorize a particular use based purely on the contribution of that use to the economy. All management is bounded by the mandate to prevent "permanent impairment of

the productivity of the land and the quality of the environment." Under this provision, once a use runs its course, the land must be reclaimed to its original baseline health and integrity.

The counterpart provision to multiple use is sustained yield (43 U.S.C. § 1702(h)). It requires BLM to emphasize the long-term management potential of our public lands to satisfy the needs of both current and future generations. Needs are satisfied only to the extent that they do not permanently impair the productivity of the land or quality of the environment. Resources that may become more valuable as time passes include wilderness, wildlife habitat, and watershed protection.

The unnecessary or undue degradation provision (43 U.S.C. § 1732(b)) reads:

In managing the public lands the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands.

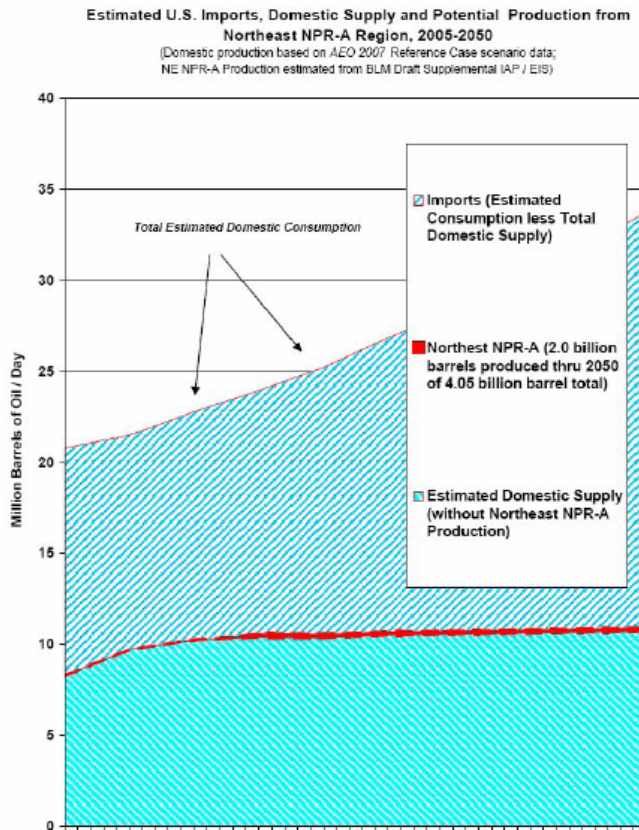
The impacts of an action are unnecessary if the BLM could avoid harm to the land or the environment, or if the BLM's actions are ill-advised (for example, the costs outweigh the benefits, the resources harmed are rare, or the action is not sustainable (43 U.S.C. § 1732(b)). The impacts of an action could also be undue even where those impacts are considered necessary (e.g. unavoidable) to the proposed action. This type of situation could arise if the action permanently impairs the productivity of the land or quality of the environment. It could also arise where the action has an exceptionally high negative impact on other resources, or, similarly, where the action prevents the public from realizing other resource values

Despite acknowledging this legislative direction and authority in FLPMA, BLM fails to balance short and long-term costs and benefits. **[21.009]** The DSEIS fails to adequately disclose the extent to which resource uses result in significant losses of lands for wildlife habitat, subsistence, watershed protection and wilderness. In the DSEIS only the No Action Alternative satisfies the unnecessary and undue degradation provision.

III. INADEQUATE PURPOSE AND NEED

[21.010] BLM states that "the purpose and need to amend the 1998 Northeast NPRA IAP/EIS is to address the Nation's need for production of more oil and gas through additional leasing in the northeast portion of the NPRA" (DSEIS at ES-1). However, BLM's summary estimates of petroleum produced from this area, as presented in its August 2007 DSEIS demonstrate that the development of the Northeast Planning Area would do relatively little to address the nation's energy needs.

BLM anticipates that oil fields in the region would produce for 10 to 50 years, and that production would continue through most of the century. Total petroleum is estimated to range from 2.9 billion to 4.05 billion barrels, depending on the management alternative selected. BLM believes these figures constitute "realistic estimates for impact analysis" (DSEIS at 4-49). In contrast, the United States is on track to consume approximately 400 billion barrels of oil by mid-century (U.S. Energy Information Administration (EIA) Annual Energy Outlook 2007, p. 156). Assuming the region produced half of BLM's estimate by that time - approximately 2.0 billion barrels - the region would contribute only one-half of one percent of the nation's total petroleum needs during this period.



IV. INADEQUATE RANGE OF ALTERNATIVES

BLM should consider a new range of alternatives. A new EIS process without consideration of new alternatives is a hollow gesture. The Ninth Circuit has stated that consideration of alternatives is "the heart of an EIS." *Navajo Nation v. U.S. Forest Service*, 479 F.3d 1024, 1054 (9th Cir. 2007) (quoting 40 C.F.R. § 1502.14). **[21.011]** To fix the problems with the last IAP/EIS, BLM needs to consider the full cumulative impacts of oil leasing, exploration, and development in the Northwest Planning Area and increased activity in the Northeast Planning Area and develop appropriate alternatives in light of these cumulative impacts. The District Court recognized this stating, "Upon remand and consideration of the cumulative effects of the development in the Northeast Planning Area and Northwest Planning Area, it may be necessary to further amend the stipulations and ROPs in the leases, in particular those associated with opening the TLSA."

NEPA requires that, "to the fullest extent possible," agencies must "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. 4332(2)(E)(2000). To fulfill this requirement, the agency must prepare an EIS that "rigorously explore(s) and objectively evaluate(s) all reasonable alternatives" to the proposed action. 40 C.F.R. 1502.14(a). Because the consideration of an appropriate range of alternatives is so important to the NEPA process "the existence of a viable but unexamined alternative renders an environmental impact statement inadequate." *Resources Limited Inc. v. Roberston*, 35 F.3d 1300, 1307 (9th Cir.1993).

[21.012] Here, BLM failed to consider a reasonable range of alternatives. BLM should have considered more protective alternatives. Since 1998 there have been significant developments that require reconsideration of BLM's rejection of the more conservation oriented alternatives rejected in 1998. In the nine years since the release of the 1998 IAP/EIS and ROD, we have accumulated additional information and analyses that require BLM to be more restrictive and protective in the Northeast Planning Area, not less. Despite the growing environmental and social concerns documented in The National Academy of Sciences National Research Council report Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope, millions of additional acres have been made available to the oil and gas industry on the North Slope without any additional environmental protections.

For all of these reasons, [21.013] if BLM elects to go forward with this process, it must reformulate its alternatives to consider more protective alternatives that deal with the cumulative impacts of increased development in the Northwest and Northeast. [21.014] In addition, the agency should include and analyze Alternatives B and C from the 1998 IAP/EIS. BLM must also include and analyze alternatives BLM failed to consider in the 1998 IAP/EIS and this DSEIS. To comply with NEPA, FLPMA and NPRPA, BLM must consider an alternative that includes permanent protection for the Teshekpuk Lake Special Area, Colville River Special Area and other biological hot spots in the Northeast Planning Area. [21.015] In addition, BLM should consider an alternative that addresses the inadequacies of 1998 ROD stipulations detailed in our March 12, 1998 Northeast Planning Area draft IAP/EIS comments hereinafter incorporated by reference.

V. FAILURE TO COMPLETE A SITE -SPECIFIC ANALYSIS

[21.016] The decision to offer leases based on a general EIS violates clearly established NEPA law requiring site specific analysis before development rights are granted.

NEPA and its implementing regulations require that an EIS be a "detailed" statement. "See 42 U.S.C. 4332". "What is required is information sufficient to permit a reasoned choice of alternatives so far as environmental aspects are concerned." *Natural Resources Defense Council v. Morton*, 458 F.2d 827, 836 (D.C. Cir. 1972). Settled case law holds that "detailed" means "site-specific." "Site-specific analysis is essential to meaningful environmental analysis." *California v. Bergland*, 483 F. Supp 465, 483 (E.D. Ca. 1980), *aff'd and rev'd in part sub nom. California v. Block*, 690 F.2d 753 (9th Cir. 1982). An EIS cannot be the basis for federal action if it fails to consider the individualized, 'on the ground' effects on local environments. . . . [and] does not provide the detailed analysis of local geographic conditions necessary for the decision-maker to determine what course of action is appropriate under the circumstances.

Natural Resources Defense Council v. Morton, 388 F. Supp. 829, 833, 838-9 (D.D.C. 1974) (emphasis added), *aff'd without opinion* 527 F.2d 1386 (D.C. Cir.), *cert. denied* 427 U.S. 913 (1976); see also *Natural Resources Defense Council v. Hodel*, 819 F.2d 927, 928 (9th Cir. 1987) (Morton is "the leading case in this area" holding that NEPA requires "assessment of the environmental effects . . . in specific areas."); 40 C.F.R. § 1502.14 (EIS must "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decisionmaker and the public.").

Although the Ninth Circuit upheld BLM's approach in the Northwest NPR-A, see *NAEC v. Norton*, 457 F.3d 969 (9th Cir. 2006), the Court based its decision on the fact that the government could not know where over the vast planning area exploration and development were likely to occur. Here, the proposed action focuses on opening a smaller previously

protective sensitive area to leasing precisely to accommodate the industry's interest in exploring and developing this area. In this circumstance, a fully site-specific analysis is necessary.

[21.017] The DSEIS for the Northeast Planning Area is not site-specific. A generic discussion of resources and potential impacts like that contained in the DSEIS simply cannot suffice as the required site-specific analysis. Under different circumstances the broad-scale approach that BLM has taken in the DSEIS might possibly be acceptable in a programmatic EIS, if the programmatic EIS does not purport to become the basis for authorization of discrete activities, such as oil and gas leasing, in particular areas of the Reserve. This DSEIS, however, does not claim to be a programmatic EIS, but forms the basis for a leasing program. Based on this NEPA process, BLM will issue leases that authorize oil and gas exploration and development. Accordingly, the choice among alternatives will have direct, on-the-ground impacts that must be considered on a site-specific basis. The DSEIS will establish the lease stipulations and ROPs that are intended to protect surface resources when exploration and development occur. Decisions such as these will impact the environmental and subsistence resources directly and, therefore, must be considered on a site-specific basis.

The leases BLM is planning to issue in the DSEIS represent an irretrievable commitment of resources because the lessee is given the right to develop oil and gas. Courts have established that oil leases, such as those proposed here, that do not preclude surface occupancy represent an irreversible and irretrievable commitment of resources. See *Bob Marshall Alliance*, 852 F.2d at 1227; *Burford*, 848 F.2d at 1451; *Sierra Club v. Peterson*, 717 F.2d at 1414. As the court found in *Burford* it is too late to perform site specific analysis after the commitment has been made. BLM has already made the choice to give the oil companies the right to develop oil. Promises to conduct future NEPA analysis are only relevant if the agency retains the authority to say "no" to development.

Accordingly, **[21.018]** if BLM intends that the DSEIS be the basis for authorizing oil and gas leasing in particular areas of the Reserve, it must be scaled so that it is site-specific. An adequate site-specific analysis cannot rely on a hypothetical development scenario not tied to any particular location and a general, region wide assessment of total affects. BLM must instead assess the impacts of potential oil exploration and development on all the resources of particular areas. Until this analysis is done, the DSEIS may serve as programmatic planning document, but cannot be used as a basis for entering into oil and gas leases.

VI. INADEQUATE DESCRIPTION OF OIL AND GAS EXPLORATION AND DEVELOPMENT

As discussed above, a hypothetical development scenario not tied to particular locations cannot serve as the basis for a NEPA required site specific analysis. Furthermore, **[21.019]** BLM's hypothetical development scenario is incomplete and unrealistic when evaluated in the context of existing development in the region. As a result, the nature and extent of potential impacts are significantly understated. **[21.020]** The DSEIS fails to describe adequately potential scenarios for oil field exploration and production activities and infrastructure in Northwest NPRA, Northeast NPRA and offshore. The requisite analysis necessary to authorize exploration and development leases is not provided. The DSEIS should prepare an expected, minimum, and maximum development scenario and prepare a cumulative effects analysis for each.

The DSEIS presents an incomplete view of expected industrial activity, and fails to provide a full hypothetical development scenario upon which to conduct a scientifically modeled cumulative impact analysis.

[21.021] The maps and text in the DSEIS claiming to constitute the "hypothetical development scenario," and the cumulative impact analysis does not reflect the latest information on seismic activities, exploration drilling, locations of leases sold onshore in Northeast and Northwest NPRA and offshore in Beaufort and Chukchi Sea. This description also needs to be updated to reflect changed assumptions and new stipulations which allow substantially more permanent infrastructure and activities than the 1998 ROD.

PIPELINES. [21.022] BLM retains the same incomplete pipeline map in its section on basic assumptions, merely changing its name to "Speculative future pipeline corridors" (Figure 4-2, p. 4-35, DSEIS) from "Future pipeline corridors" (Figure IV.A.1.b-7). Many of hundreds of miles of pipelines will result according to BLM, yet most of the potential geographic locations, extent, and network of new pipelines required for development were not shown, particularly for the TLSPA, or Teshekpuk Lake and Colville River Special Areas.

Industrial infrastructure could sprawl throughout the areas north, east, and south of Teshekpuk Lake in Alternative D (see attached map, "Potential Teshekpuk Lake Development allowed under BLM ROD (Alaska Center for the Environment Conservation GIS, January 2006)", with no limit on pipelines for the 7 large lease tracts north of the lake and unlimited pipelines allowed throughout the Goose Molting Area under Alternative D, including in the Goose Molting "No-surface occupancy area," (Stipulation K-4, p. F-19, DSEIS). This sharply contrasts with a strict prohibition on pipelines for the TLSPA in Alternative A with "no exceptions" (p. 1, and p. 35 Stipulation #31, 1998 ROD). Similarly, pipelines and exploratory wells are allowed in Alternative D's Teshekpuk Lake Caribou Habitat Area (both the Southern Caribou Calving and Caribou Movement Corridors around Teshekpuk Lake (Stipulations K-9 and K-10, p. F-24, DSEIS), despite so-called "surface occupancy restrictions." And while other permanent structures are "prohibited," under the new, looser provisions for granting waivers compared with the 1998 ROD, these stipulations can be waived like the Fish Creek buffer has been for ConocoPhillips' Alpine Satellites project.

[21.023] The DSEIS did not provide complete information on the possible geographic locations for potential major pipeline trunk lines, or feeder lines within fields upon which to do a cumulative impact analysis. Furthermore, **[21.024]** this DSEIS pipeline map only shows roughly 70 possible new pipeline corridors within the Northeast NPRA, therefore omitting consideration of most of the pipelines BLM includes in its chart - 230 miles of gathering lines and 162 miles of Sales oil pipelines for Alternative A, and 320 miles of gathering lines and 162 miles of sales oil pipelines for Alternative D (Table 4.2-G).

Significantly, **[21.025]** the DSEIS does not show potential pipelines even half-way across the Northeast NPRA heading west, or north or east of Teshekpuk Lake, despite the allowance for such pipelines, so it is presumed that no quantitative modeling for impacts of such lines was done. Ironically, BLM has ignored its own analysis tools presented in the Alpine Satellites Development Plan Final EIS (BLM September 2004), such as the Full-Field Development scenario (e.g. Fig. 2.4.4-2, BLM September 2004), Simply repeating that here would be insufficient as it only covered the eastern most part of the Northeast Plan area.

[21.026] The scenario fails to grapple with the network of pipelines that would fragment habitat across the Northwest planning area and the Teshekpuk Lake area. This is an egregious error considering that the District Court's remand was based on BLM's failure to deal with these types of cumulative impacts. BLM also fails to map pipelines for the Northwest NPRA where it lists 295 miles of sales pipeline and 300 miles of gathering lines (p. 4-649, DSEIS). The Northwest NPRA FEIS also failed to fully map all such pipeline across the Northwest NPRA, although it did present some connecting trunk lines (but not gathering lines) from the edge of

Northwest NPR-A across part of the Northeast NPR-A and with one oil pipeline and two different gas lines passing by Nuiqsut, yet none going into the north and east or southeast of Teshekpuk Lake (Map 108, Hypothetical pipeline routes for the NW NPR-A development Scenario, Vol. 3, Northwest NPR-A Final IAP/EIS, November 2003). Furthermore, the Northwest NPR-A mapped pipeline routes do not even connect to known oil or gas fields. In neither the Northwest FEIS nor this DSEIS were the impacts to the community of Nuiqsut from such major routes evaluated. Furthermore, these potential routes were insufficient to model potential effects of pipelines that could connect many of the leases present in Northeast and particularly in the far western reaches of the Northwest NPR-A. This must be done, since BLM presumes in its analysis based on the oil resource potential that oil throughout these parts of the planning areas may be developed.

[21.027] Significantly, the Interior Department has evaded consideration of the cumulative environmental effects of a major oil pipeline traversing NPR-A from the Chukchi Sea coast to the Trans-Alaska Pipeline, despite the fact that the Chukchi Lease Sale 193 FEIS reveals that such a line would be made necessary by the Chukchi lease sale. the Department of Interior has failed to address these impacts in this DSEIS, in the Northwest FEIS, or and in the Chukchi Sea Sale 193 FEIS (p.4-6502007). It has not presented a map of such a route of the large common-carrier trunk pipeline and proposed pump stations in any of the documents.

[21.028] If construction of such a pipeline from the Chukchi Sea "could help support development within Northwest NPR-A, [just] as development in Northwest NPR-A could help the economics of a development in the Chukchi Sea" (p. 4-650) as BLM claims, evaluation of the impacts of this major transportation network integral to both leasing plans needs to be done. It is not enough to dismiss its major impacts by asserting that such development would "exceed the combined development described for each area separately... or that such infrastructure could be "less than additive," (p. 4-650, 4-651) especially without any scientific or economic modeled analysis. As well, BLM has ignored analysis of needed pump stations "every 100-miles" along the Chukchi Sea pipeline (p.4-651, DSEIS).

As Justice Thomas R. Berger wrote in his landmark study, Report of the Mackenzie Valley Pipeline Inquiry (1977), the cumulative effects of building a major pipeline route to access previously remote resources are not limited to the direct or indirect impacts to wildlife but instead changes the landscape both ecologically, socially, economically and culturally in sweeping ways that need to be addressed:

"The decisions we have to make are not... simply about northern pipelines. They are about the protection of the northern environment and the future of northern peoples..." The cumulative impact of all these developments will bring immense and irreversible changes ... --Justice Thomas R. Berger, 1977

Instead, BLM casually dismisses the huge ramifications and inter-related effects of such a major connecting route from the Chukchi Sea across the NPR-A. This is a serious problem with its cumulative impact analysis.

In its presentation of development activities considered in the cumulative case, BLM recognizes that in the Beaufort Sea, "alternatives B, C, and D all make development of a pipeline and other infrastructure north and east of Teshkepuk Lake more feasible" (p.4-653, DSEIS), but it fails analyze such impacts in detail. It fails to address such impacts from existing (or potential new leases that will be offered by the state each year) state Beaufort Sea leases along Smith Bay at Cape Simpson, or federal OCS leases further offshore in the Beaufort Sea north of Smith Bay, and how the combination of pipelines, shore-bases at pipeline landfalls, and other facilities on

land, as well as potential spills in marine waters, may affect sensitive coastal wetlands identified as important to a variety of migratory birds, including the threatened spectacled eider.

Past Interior Department analyses created maps of hypothetical development infrastructure.

Interior Department agencies have used maps of hypothetical development scenarios to model or present certain impacts in prior Arctic Alaska leasing EISs, despite BLM's repeated claim that 'the timing and location of future commercial-sized discoveries cannot be accurately predicted until exploration of those reserves occurs,' (p. 4-12, DSEIS)

[21.029] BLM failed to address the effects of infrastructure integral to OCS oil development on these sensitive NPRA habitats, nor did BLM provide a quantitative analysis of the activities that such pipelines would invite into the TLSA and how this would add to the impacts from the Northeast NPRA potential oil development.

[21.030] Similarly, BLM has mapped "hypothetical fields" and "hypothetical transportation corridors" as an integral part of its environmental impact analysis in NPRA in the past (BLM, Final EIS on oil and gas leasing in the National Petroleum Reserve in Alaska, February 1983). For instance, in its 1983 EIS, BLM explained that "to facilitate discussion of the likely types and level of impact which could result from NPR-A development, several hypothetical oil fields were developed and combined into analytical cases" (p. 55, BLM 1983); see also Figures 1-3 in Shepard, S., K. Bennett, and J.K. Gilliam, National Petroleum Reserve in Alaska (NPR-A) Technical examinations TE-1: An analysis of the type and likely level of NPR-A oil Development(s), October 1982, BLM. We do not suggest that these exact maps would be relevant to the analysis today, but that BLM should not rule such a technique out of hand as it has done in the DSEIS.

And more recently, BLM portrayed a Full Field Development (FFD) scenario in its analysis of impacts from the Alpine Satellites Development Plan for development of two oil fields within NPRA public lands, one on private lands within the external boundary of the Reserve, and two new fields on state lands (BLM, September 2004, Alpine Satellite Development Plan FEIS). The mapped FFD includes the original two Alpine pads, plus the 5 proposed sites, 22 additional new ones, 150 miles of permanent roads, 8 airstrips and two gravel mines (e.g. Figure 2.4.4-2, Alternative D: FFD Pad, Road, and Pipeline locations, BLM 2004). For illustrative purposes, the Conservation GIS Center combined maps showing the existing sprawl of North Slope oil and gas fields with the BLM's FFD infrastructure, as well as the development that may be allowed in the Teshekpuk Lake Surface Protection Area under Alternative D, and the BLM's 2006 ROD (see map Oil & Gas Exploration and Development in America's Arctic: Existing and potential infrastructure and activities; available in the Arctic Ocean and North Slope Map Atlas, third edition, Northern Alaska Environmental Center, www.northern.org).

SEISMIC SURVEYS [21.031] BLM has not assessed the combined effects of onshore seismic surveys with those of offshore surveys especially those conducted nearby or which present combined disturbance to subsistence resources or activities of Nuiqsut, Barrow, or other communities. The seismic map (Figure 4-6) has not been corrected since the prior Northeast FEIS, in that it still does not include seismic survey activity in the Northwest NPRA, the state and federal waters of the Beaufort Sea nor the Chukchi Sea, nor the total number of seismic surveys from all sources tabulated and those occurring during the same time periods, or affecting the same wildlife considered together. **Furthermore, [21.032]** it fails to include the extensive routes traversed across the tundra by cattrains for those surveys, or to show the connecting support bases.

BLM assumes that infrastructure and activity amounts are proportional to amount of oil produced without any scientific basis.

[21.033] BLM states that "a fundamental assumption of these scenarios is that the level of future activities is directly related to the petroleum-resource potential made available for leasing and development," (p. 4-12, DSEIS), without any supporting scientific basis.

[21.034] BLM lumps all of the potential onshore production within Northeast NPRA as simply "undiscovered onshore" resources (Table 4.7-E, p. 4-644, DSEIS) except two known fields listed under Present Development and Production (Lookout (CD-6) and Spark (CD-7) which are separate fields though they are being planned as Alpine satellites - their oil quantity is not given, nor does it state these are within NPRA.

BLM has not quantified all of the sources of impact needed for the cumulative impact analysis.

[21.035] In Table 4.2-E, BLM estimates certain industry activity levels in the Northeast NPRA for each alternative (p.4-50, DSEIS), but it fails to present the additive picture necessary to conduct its analysis for the cumulative case. For instance (only existing infrastructure is listed for the cumulative North Slope development, not present or reasonably foreseeable future development numbers on Table 4.7-F, p. 4-645, DSEIS). Furthermore, it does not present any comparisons for such potential infrastructure within the Teshekpuk Lake or Colville River Special Areas, or information about the proximity of such infrastructure to threatened or rare species which could help elucidate differences in impacts to sensitive habitats or important subsistence use areas.

[21.036] BLMs data for the Northwest NPRA (p.4-649, DSEIS) should not be isolated from the Northeast NPRA for the cumulative effects analysis. **[21.037]** Furthermore, BLM did not add in comparable estimates for infrastructure and activities for the Beaufort and Chukchi Sea developments. Some of this data is available to present a more complete picture, such as charts for various lease sales presented by MMS (e.g. Table IV.A-4, summary of basic exploration development, Production and Transportation assumptions for all alternatives, MMS, Beaufort Sea FEIS, Vol. III, 2003), although just as with the NPRA, MMS has failed to provide a meaningful hypothetical scenario by presenting a map for most facilities for its cumulative impact analysis, or to tabulate all the basic sources of impact.

SPILLS of crude oil and other toxic substances could also pose greater risks than were evaluated. The, TLSPA, TLSA, Teshekpuk Lake, Colville River Special Area, Colville River, coastlines, lakes, smaller rivers , streams, watersheds and migratory wildlife would be more vulnerable to impact than the assumptions BLM relied up because significant events have transpired since then.

[21.038] The oil spill analysis described in Appendix K relied on outdated information that does not include the largest crude oil spill to ever take place on the North Slope, the March 2006 pipeline spill caused by corrosion and poor maintenance and management practices. **[21.039]** The EIS should also review information regarding the long-term nature of such practices relating to chronic toxic spills (e.g. see Alaska Department of Environmental Conservation, GC-2 Oil Transit Line Release, first discovered on March 2, 2006).

http://www.dec.state.ak.us/spar/perp/response/sum_fy06/060302301/060302301_sr_index.htm), situation reports. U.S. Senate and Natural Resources, Senate Hearing. 109-766, BP Pipeline Failure, September 12, 2006, <http://www.access.gpo.gov/congress/senate/senate08ch109.html>, accessed November 11, 2007; R.A. Fineberg, August 3, 2006, BP in Alaska, Beyond Propaganda, a disturbing decade of poor environmental performance; R.A. Fineberg, March 15, 2006, BP

North Slope Spill Reveals a history of substandard environmental performance; USA Today, BP spill highlights aging oil field's increasing problems, August 14, 2006; http://www.usatoday.com/money/industries/energy/2006-08-14-bp-cover-usat_x.htm, accessed November 4, 2007;).

The magnitude of these pipeline integrity and spill problems that BLM has ignored in its analysis are reflected by the recent fine in which BP agreed to pay \$20 million and plead guilty to a misdemeanor violation of the federal Water Pollution Act as part of a major settlement with the federal government (\$373 million BP plea deal includes spill fine, Anchorage Daily News, October 25, 2007; U.S. Department of Justice, Press Release on October 25, 2007, British Petroleum to pay more than \$370 million in environmental crimes, fraud cases: Charges Result from 2005 Texas Refinery Explosion, Alaska Pipeline Leaks and Attempt to Manipulate Markets. <http://anchorage.fbi.gov/doj/pressrel/2007/environmentalcrimes102507.htm>, accessed November 4, 2007.

[21.040]

A major oversight is that BLM's cumulative spill analysis failed to consider the cumulative impacts of potential spills in the Chukchi Sea despite proposed Sale 193 scheduled to take place in February 2008, two more lease sales planned within the next five years, and seismic operations having taken place over the past two summers (see <http://www.mms.gov/alaska/cproject/Chukchi193/Chukchiindex.htm>; <http://www.mms.gov/alaska/cproject/ArcticMultiSale/ArcticMultiindex.htm>; <http://www.mms.gov/alaska/re/recentgg/recentgg.htm>.) Migratory birds using the TLSA, and coastal wetlands across the NPRA, migrate north through the Chukchi Sea and would be vulnerable to spills; of particular note is that Chukchi Sea waters in Ledyard Bay are designated critical habitat for the threatened spectacled eiders and therefore could face combined risks of spills there as well as in the nesting habitats and Beaufort Sea feeding and migration areas.

[21.041] The spill analysis also ignored chronic, smaller spills and those from toxic substances besides crude oil that can kill wildlife or degrade habitats (see Appendix K, DSEIS; also Alaska Department of Environmental Conservation, Summary of oil and hazardous substance spills by Subarea (July 1, 1995 - June 30, 2007), http://www.dec.state.ak.us/spar/perp/docs/10year_rpt/10Yr_Subareas_FINAL.pdf accessed November 4, 2007).

[21.042] The effects of a major oil spill in coastal or marine waters could be devastating to waterfowl flocks in lagoons, ringed seals, and polar bears due to the difficulty of cleaning up crude oil and therefore there could be cumulative effects to the species relying on the TLSA. National Research Council. 2003. Cumulative environmental effects of oil and gas activities on Alaska's North Slope. Washington DC: National Academies Press. P.106; 123. The National Academy of Sciences noted that "no current cleanup methods remove more than a small fraction of oil spilled in marine waters, especially in the presence of broken ice," said the National Academy of Sciences (National Research Council. 2003 P.15). The oil industry flunked oil spill drills off the coast of Prudhoe Bay and in 2000, Alaska Department of Environmental Conservation found BP had violated state oil response plan requirements for the Northstar field because it was unable to effectively mobilize booms, deploy skimmers and other equipment and ill-prepared to even test equipment (Alaska Department of Environmental Conservation. January 18, 2000. Letter to BP Exploration (Alaska) Inc. and ARCO Alaska Inc. on ADEC-Minerals Management Service Joint Evaluation of the Fall 1999 North Slope Drills and Exercises; Alaska Department of Environmental Conservation. May 11, 2000. NorthStar

operations Oil Discharge Prevention and Contingency Plan, Compliance Order by Consent to BP Exploration (Alaska) Inc. Consent Order No. 00-162-50-1456.)

[21.043] The DSEIS also fails to address the spill potential for increased barging to the NPRA. For example, a barge tanker struck an iceberg near the western boundary of the Arctic Refuge enroute to Kaktovik and lost 68,000 gallons of fuel oil; no response was mounted despite oily sheen on the water near the coast and migrating birds (NOAA Response Report. August 21, 1988. Crowley barge tanker 570, Flaxman Island, Beaufort Sea Alaska.) While it is unclear whether this barge supported industrial or village fuel needs, it points to the risks of barge tankers that have not been addressed by MMS.

The Teshekpuk Lake and Colville River Special Areas could be subject to significant infrastructure and activities from adjacent land and offshore areas that would increase cumulative harm but were not assessed.

Due to their geographical locations at the eastern and northern boundaries of the Northeast NPRA area, the Teshekpuk Lake and Colville River areas face particular stresses from exploration and development activities outside the Northeast NPRA planning area added to development at their periphery.

The Teshekpuk Lake Surface Protection Area will be subject to increasing activity in support of offshore exploration and development and noise disruption from adjacent activities. **[21.044]** A key element of the cumulative impacts analysis that BLM has failed to consider is the "deficit in marine protected areas," as scientific studies have noted across the Arctic. This is a key feature to incorporate into the cumulative impact analysis of how impacts of un-zoned offshore oil and gas drilling in the Beaufort Sea and Chukchi Sea combine to increase risks to many species such as threatened spectacled eider, rare yellow-billed loons, and other species feeding and migrating in marine habitats and depend on habitats both in the TLSPA as well as elsewhere across the Northeast and Northwest NPRA that will have increased risks due to the changes in the Northeast NPRA plan (see Vital Arctic Graphics: People and global heritage on our last wild shores, 2007, UNEP, <http://www.vitalgraphics.net/arctic.cfm>, accessed November 11, 2007).

OFFSHORE DRILLING AND PRODUCTION FACILITIES ON LAND. There will be pressure to allow directional drilling into adjacent state and federal OCS waters from land. **[21.045]** While BLM presumes such activity for its own offshore acreage, "prospective offshore areas under NPR-A jurisdictions could be reached using directional drilling techniques from onshore pads..." (DSEIS, p. 4-46), it does not address such onshore drilling production sites or pipeline landfalls and associated pipelines that may traverse the Teshekpuk Lake Surface Protection Area, or other NPR-A shorelines. We note that there are substantial areas of leases in Harrison Bay state waters adjacent to the eastern coast of the Teshekpuk Lake Special Area, and also in Smith Bay bordering the northwest part of the TLSPA shoreline, the sensitive Ikpiuk River delta and the northeast part of the Northwest NPRA (see attached map, Current and Proposed Oil & Gas Leases on Alaska's North Slope, September 11, 2007). Furthermore, **[21.046]** BLM does not assess the likelihood of how many wells might be drilled from the shores of the NPRA into offshore areas, and whether such drilling may just be the first step to further exploitation of offshore oil and gas resources that could not be reached from land, and therefore increased risk to species using both areas could result.

STAGING AREAS The former Lonely staging area along the TLSPA coastline and within the TLSPA (comprised by a former military DEWline site and acreage leased by BLM to Cook Inlet Regional Corporation (and operated as a staging area without site-specific NEPA review for such activity) has been used as a staging area for seismic and exploratory drilling in the

Northeast and Northwest NPRA and Beaufort Sea. [21.047] There has never been any comprehensive site-specific full NEPA review for use of the Lonely site for the purpose of staging onshore oil and gas operations, including designing stipulations or other mitigation measures to reduce impacts to denning polar bears, molting geese, or caribou insect relief habitat. When the Lonely site leased to Cook Inlet Regional Corporation (CIRI) was used as a major staging area for the 1983 Mukluk offshore OCS exploratory well drilling, BLM did minimal NEPA review, according to BLM files on the topic (pers. Comm. Pamela A. Miller, Northern Alaska Environmental Center).

In recent years, there has been new staging use of the Lonely site, despite long-standing and unresolved problems, including lack of cleanup of this site, and the Lonely Formerly Used Defense site including an abandoned landfill leaching diesel-range oil (measured at 2,570 mg/kg in the soil) into the lagoon along the northern coast of the TLSA was plagued by conflicts over who is responsible for site clean up and restoration (including the U.S. Air Force, Navy, CIRI, Marathon, and others), according to the Alaska Department of Environmental Conservation (ADEC, March 2005, Contaminated Sites Program, Camp Lonely Landfill, http://www.dec.state.ak.us/spar/csp/sites/camp_lonely.htm). Site cleanup is still not complete, and Benzene exceeded the water quality standards (TAH) in the adjacent surface water, according to ADEC (http://www.dec.state.ak.us/spar/csp/search/csites_report.asp?Reckey=200436X117001).

[21.048] BLM describes "year-round" use at the Lonely "base camp" and staging area, but it fails to quantify the pre-leasing and post-leasing exploration and development uses that may occur in this area within the TLSA during sensitive wildlife periods, as well as the existing and continuing contamination problems. While stating that it is an "existing pad" (p.4-15, DSEIS), BLM does not describe the existing size of the gravel pads at the DEWline and CIRI-leased site nor project the future size. BLM could quantify past uses of the land it owns because of its permitting role, as well as the past and existing contamination of these sites.

[21.049] Staging area geographic locations, and evaluation of cumulative effects of operations at alternative locations is critical, but was not comprehensively done. While the DSEIS listed some predicted aircraft flight numbers (p. 4-16), it did not substantiate how it derived those levels, nor map or describe where the flights would travel. It also did not quantify the flights that would take place from staging areas in NE NPRA (Lonely, Inigok) to support exploration and development operations in NW NPRA or offshore in the Beaufort Sea. BLM must consider aircraft flight routes across the TLSA and the CRSA in support of various types of operations both onshore and offshore in order to assess potential impacts to wildlife.

[21.050] The DSEIS fails to analyze the cumulative impacts from substantially increased year-round AIR TRAFFIC, barging traffic, increased risks of fuel spills along the coast and into the wetlands and ponds adjacent to the Lonely staging area to support NPRA and offshore operations.

[21.051] Barging traffic could also significantly increase at Lonely to support onshore and offshore operations. BLM also should be able to predict barging traffic since barges at the DEWLine station 'provides high ground which can best be accessed by barge at higher tides,' (p. 4-15, DSEIS). The period for barging shipments "mid-July to late-September" (p. 4-15, DSEIS) directly overlaps with the timing of goose molting restrictions (Stipulation #54, June 15 to August 20 fixed-wing restrictions, 1998 ROD; Stipulation K-4.g., p. F-20, DSEIS. If there are barged shipments of supplies and equipment, there will need to be people to offload and guard it at the staging area and so additional aircraft support would likely be needed. [21.052] There are no stipulations or ROPS specifically addressed to minimize the effects of Lonely or other

staging bases, barge landfalls, or ports other than weak mention of causeways, [21.053] nor an cumulative impact assessment of all barging or barging combined with other noise disturbances.

[21.054] BLM understates the likely increase in impacts from use of the Lonely staging area to wildlife habitats and populations. While use of this existing gravel pad would not appear to be completely precluded by the TLSPA restrictions in Alt. A, under the other alternatives, it is likely that cumulative impacts would greatly increase because exploratory drilling and production activities would most likely rely on the closest support site to the northern part of the TLSPA - e.g. Lonely to receive goods and people via aircraft, barge, or boat, and it would likely be used to over-summer exploratory drilling rigs and seismic equipment so as to be able to mobilize more quickly from the supply location, therefore greater vegetation surface disturbance from the overland moves, greater water withdrawals from construction of more ice roads supply and noise disturbance which could harm molting geese and caribou. The DSEIS did not address cumulative impacts from use of Lonely staging area on TLSPA, versus an alternative which did not allow use of that site and if it is expected that the Simpson and Lonely sites would both be needed and would they be ultimately connected by road for efficiency sake since Lonely is described as a better barge landing site.

[21.055] Cape Halkett private ASRC land at the northeast tip of the TLSPA could be used for substantial staging and production sites for onshore or offshore development including transportation routes not bound by the restrictions on BLM, yet could affect BLM land. This cumulative impact was not assessed to the TLSPA.

[21.056] Other staging sites are currently being used and their impacts should be analyzed. BLM stated that "it is likely that the first development operations in the planning area initially would be staged out of existing facilities at the Greater Prudhoe Bay Unit or Kuparuk River Unit (p.4-25, DSEIS). While those areas may be involved, the BLM ignores the fact that existing exploration operations, including industry monitoring, has operated out of the Alpine oil field camp as a base of operations, and ConocoPhillips's development plan for Alpine Satellites centered its operations for the new field development within NPRA (CD-5 on ASRC lands, CD-6 and CD-7) from the existing Alpine field. [21.057] The cumulative impacts to wildlife in the Colville River delta from development and production operations need to be analyzed.

[21.058] Nuiqsut, particularly its airport, is also being used as a staging area for much exploration activities and future use at that site needs to be analyzed as it could have significant impacts to the community.

GRAVEL MINING AND HAULING. [21.059] BLM still has not identified any sources of gravel for production (or exploratory pads), airports, and roads within the NE NPRA (4-27, DSEIS, except a questionable source "Clover" identified for the Alpine Satellites project. If there are not local sources, there will be high levels of traffic from barges to "coastal staging areas" and hauling "from existing mine sites east of the Colville River." (p.4-25, DSEIS). [21.060] Massive gravel hauling operations would contribute cumulative effects from noise and pollution in the marine environment if barging was done, add to the effects at Lonely staging area, and impact the Colville River resources due to extensive hauling across the river. Colville River Special Area could be affected by travel from mining gravel from the river bed or mines on adjacent lands. [21.061] One source BLM mentions is that "bedrock outcrops could be blasted and then crushed..." (p. 4-28, DSEIS), yet it does not identify the location of such rock crops so that analysis of cumulative impacts to wildlife populations such as nesting raptors and other birds, archeological sites, cultural sites, traditional land use sites, visual resources, or wilderness values is possible.

Marine contamination of wildlife habitats. Offshore drilling activities can have cumulative impacts on wildlife which use both the marine areas for feeding or migration and also depend on tundra wetlands for nesting, molting and other activities.

Drilling waste disposal. **[21.062]** In its assumptions under-girding the impacts analysis, BLM only describes disposal of drilling wastes through injection disposal wells, but neglects to analyze impacts from offshore exploratory drilling waste disposal which in many cases is direct to marine waters. EPA's current general permit for exploratory drilling allows dumping of drilling wastes and cuttings in most locations in the Beaufort and Chukchi OCS waters (see Arctic Oil and Gas General Permit (effective June 26, 2006 -- June 26, 2011; <http://yosemite.epa.gov/r10/water.nsf/NPDES+Permits/General+NPDES+Permits#Oil%20and%20Gas0>). EPA has issued general NPDES permits to Shell Oil Inc. to dump drilling wastes into the marine waters from exploratory wells drilled on any of its leases in the Beaufort Sea, some of these are located in the OCS offshore the NPR-A.

Other recent exploratory drilling operations dumped drilling muds and cuttings in the Beaufort Sea including in the OCS (e.g. McCovey well; Warthog well in Camden Bay off Arctic National Wildlife Refuge coast). Recently, drilling muds were spilled into the Beaufort Sea at the Colville River delta, just east of the NPR-A and up current from its coastal waters; the Oooguruk project dumped drilling wastes contrary to the terms of its permit (Jim Carlton, EPA Pursues Report that oil crew dumped polluted mud in Alaska, Wall Street Journal, October 19, 2005).

There is reason to be concerned about effects of drilling waste disposal into marine waters. A study of shallow arctic marine sediments found persistence of barium, chromium, lead and zinc at elevated levels two to four years after exploratory drilling wastes were discharged into low energy environments of coastal lagoons in the Beaufort Sea (Snyder-Conn, E., D. Densmore, C. Moitoret, and J. Stroebele. 1990. Persistence of trace metals in shallow Arctic marine sediments contaminated by drilling effluents. *Oil and Chemical Pollution* 7: 225-247). This has the potential to affect wildlife habitats such as the threatened spectacled eider, yellow-billed loon which is under consideration for ESA listing, and potentially marine fish and mammals.

[21.063] BLM also fails to address the cumulative impacts from NPR-A "legacy wells" (from past government drilling programs) including contamination has yet to be cleaned up properly, and may not be done for decades at the current rate of funding.

BLM assumes "state-of-the art technologies" will be used for its project scenarios, despite the agency's approval of activities not meeting this criteria already in the Northeast NPR-A.

As discussed above, a hypothetical development scenario not tied to particular locations cannot serve as the basis for a NEPA required cumulative impact analysis. Furthermore, **[21.064]** BLM's hypothetical development scenario is incomplete and unrealistic when evaluated in the context of existing development in the region, as we detail below. As a result, the nature and extent of potential impacts are significantly understated.

BLM already granted exceptions to stipulations despite industry claims of technology improvements. In the first development proposal for the NPR-A, Industry requested exceptions from important stipulations these were granted by BLM in its plan approval (Rebecca W. Watson, Assistant Secretary Land and Minerals Management, November 8, 2004, Alpine Satellite Development Plan EIS Record of Decision). ConocoPhillips' proposed development described in Alternative A violated key stipulations from the 1998 ROD that were attached to the leases and established for the stated reason to minimize effects on the environment yet BLM allowed this (see Watson, 2004 ROD).

BLM failed to uphold the requirements of its current land use plan in its approval of the oil development plan. In the Alpine FEIS analysis, 3 of the 4 action alternatives violate the Northeast NPRA Plan (BLM, September 2004, Alpine Satellite Development Plan FEIS; see also Arctic Connections letter dated June 10, 2004 to U.S. Department of the Army, Corps of Engineers, Alaska District, re: U.S. Army Corps of Engineers, Alaska District, Reference Number POA - 2004 - 253 - 2, Waterway Number "Colville River.") Alternatives A, C and D violated the 1998 Plan/ in the following ways:

- * Judy and Fish Creek buffer zones will be violated. In Alt. A and C one pad and associated roads and infrastructure will be located within the 3-mile setback established around the Judy and Fish Creek LUEA established for fish habitat where no permanent facilities were to be built.

- * In Conoco Phillips' proposed action Alternative A full-field development scenario, half of the production pads on BLM lands are within setbacks established by the 1998 ROD.

- * A road system of over 25 miles of gravel roads will be connected to a road system outside NPR-A violates Stipulations # 41 and #48- "Permanent roads (i.e. gravel, sand) connecting to a road system or docks outside the planning area are prohibited and no exceptions may be granted." In Alt. A, the proposed road from CD-5, 6, and 7 connects to the Alpine road system, which is outside the planning area.

- * Alt. A, violates Stipulation 32, "lessees shall use maximum economically feasible extended-reach drilling for production drilling to minimize the number of pads and the network of roads between pads." The production pad CD 5 is only about 3.2 miles from the existing Alpine pad, CD2; and CD3 are only about 5 miles from the main Alpine pad. Furthermore, no economic analysis is provided to justify why extended-reach drilling is not feasible for moving pads out of the buffer zones. There was not one alternative analyzed with no permanent facilities in the buffer zones (including all future field expansions).

- * The full-field development analysis for the proposed action Alt. A. would include production pads in the Teshekpuk Lake Special Area, on lands currently off limits to surface activity and oil and gas leasing, and a second pad would also be located in the LUEA for caribou and the LUEA for spectacled eider breeding (the FFD was not part of the approved development plan, but used as part of the impact analysis).

[21.065] In its review of the Alpine satellites development project, BLM found that ConocoPhillips' proposed Alpine satellites project (Alt. A), as well as Alt. B & C "would significantly restrict subsistence use for the community of Nuiqsut" (BLM, September 2004, Alpine Satellite Development Plan FEIS). Although the agency concluded that Alt. D "roadless" development is the only alternative evaluated that would fall below the level of significantly restricting subsistence use for Nuiqsut and the other communities, it did not require use of that alternative. These effects from a pending development project in NPR-A were not adequately addressed in the cumulative impacts analysis.

Summer exploration drilling. [21.066] BLM states that exploration and delineation drilling "would be conducted entirely during the winter months (January to mid-April) in most portions of the planning area," (p.4-21, DSEIS), implying that there would be ONLY winter drilling, yet due to confusing sentence grammar this could state that in some portions of the planning area the drilling could occur at other times. While Alternative A Stipulation # 25 required winter-only exploration in the Special Caribou Stipulations Area (except for from production pads and albeit with loopholes due to the exceptions clause), Alternatives B,C, D have dropped that

timing restriction. In addition, [21.067] BLM has also decided to allow permanent gravel roads to be built for exploration yet the significance of this decision was not even analyzed. BLM must thoroughly analyze the allowance of any summer exploratory activities.

While BLM claims that the "Arctic Platform... has potential use for the NPRA although this is unlikely due to the "pioneering" nature of this technology (p. 4-21 DSEIS), it has added the definition "temporary platform" (Appendix F, p. F-5, DSEIS) which is a loophole in the permanent facilities definition wherein BLM could allow summer exploration or production drilling and operations even potentially in very sensitive areas (see above discussion). [21.068] It is inconsistent for BLM to explain in the assumptions for its impact analysis one thing, that "surface use of this technology could allow operators to perform exploration drilling outside the winter season... The Arctic Platform concept may have promise for exploration drilling and as a production unit... it is still in the experimental or developmental stage and... it is assumed that this drilling system will not be used" (p.4-22 DSEIS), and yet fail to incorporate this change in a quantitative way into its impact analysis when it has modified the Stipulations to allow it.

VII. INADEQUATE CUMULATIVE IMPACTS ANALYSIS

** Please note that there are other significant deficiencies in the DSEIS cumulative impact analysis that are detailed throughout other sections of these comments.

As defined in the DSEIS, cumulative impacts are the impacts on the environment which result from the incremental action combined with the impacts of other past, present and future actions. Cumulative impacts can be either additive or synergistic. Cumulative Effects Analysis (CEA) is not intended to be a list of actions and receptors; it is intended to be a quantitative analysis of the "impacts to resources, ecosystems and human communities that may be affected and used towards developing an adequate understanding of how the resources are susceptible to effects" (CEQ 1997). [21.069] This DSEIS lists how some past, present and future actions are likely to accumulate with regards to specific resources (Soils, Vegetation, Birds, etc.) but there is no ecosystem-level approach to quantifying cumulative impacts. In revising the IAP/EIS, BLM was to incorporate the impacts of development in the Northwest Planning area, providing further impetus for conducting an ecosystem level CEA. When key natural resources on the Arctic Coastal Plain (ACP) are likely to experience large scale and long term impacts, including the entire ecosystem that provides summer habitat for the caribou that subsistence users depend on, molting goose habitat and T&E species habitat, the BLM must take a more quantitative, comprehensive approach to CEA. The lack of quantitative analysis stems primarily from two missing principles of CEA: (1) use of best science and forecasting and (2) focus on what is needed to ensure long-term productivity or sustainability of the resource (p. 8, CEQ 1992). Without adherence to these principles, there is no way to assess the differential impacts of the alternatives presented in the DEIS or determine the efficacy of the Stipulations and ROPs for the alternatives.

[21.070] The CEA needs to apply the best science and forecasting techniques to assess potential catastrophic consequences in the future and to insure the long-term sustainability of the sensitive biological resources within the ACP. The BLM only goes so far as using two methods out of the set of seven primary methods for developing the conceptual causal model for a cumulative effects study of ecosystem-level effects, including (1) gathering information and (2) checklists to identify potential cumulative effects (p. 50, CEQ 1992). The next steps, which BLM has failed to do in a comprehensive and quantitative manner in this DSEIS, include development of (3) matrices to determine the cumulative effects on ecosystems by combining individual effects from different actions; (4) networks and system diagrams to trace multiple, subsidiary effects on various actions that accumulate upon ecosystems; (5) models to quantify

the cause-and-effect relationships leading to cumulative effects; (6) trends analysis to assess the status of ecosystems over time and identify cumulative effects problems, establish appropriate environmental baselines, and project future cumulative effects; and (7) overlay maps and GIS analysis to incorporate local information into cumulative effects analysis (p. 50, CEQ 1992).

Table 2-3 Summary and Comparison of Effects by Alternative in the DSEIS is primarily a checklist of potential impacts that only provides assessment of the alternatives relative to one another by resource. **[21.071]** There is no matrix to bring together the cumulative impacts of past, present and future actions on all resources nor, more importantly, on the ACP as an ecosystem. Where in this document does the BLM quantitatively analyze how the impacts from oil and gas development, other development and climate change affect the soils, water, vegetation, terrestrial mammals and subsistence users as the interconnected ecosystem that it is? Thus, how can the BLM assure that lease stipulations for the different alternatives will achieve the desired level of protection, especially for biologically sensitive areas?

[21.072] Entirely missing from the DSEIS are thresholds that establish at what point(s) could impacts approach a level at which the entire ecosystem is altered beyond an acceptable level. Thus, if any alternative other than A is chosen, how will the AO administer the ROPs and Stipulations outlined in Table 2.2? For example, how will the AO assess stipulation K-4 regarding Development Standard F (strategies to minimize ground traffic disturbance under Alternative D) without a goose monitoring program and an understanding of the thresholds at which disturbance is determined to be unacceptable? Having a vehicle monitoring plan (as identified in Stipulation K-4, Alternative D) is not a plan for assessing impacts to biologically sensitive areas and the wildlife within. This is just one example of the lack of comprehensive, quantitative, data-based actions that any alternatives could allow. It also highlights the inadequate manner in which the BLM has assessed and synthesized science pertaining to some specific biological resources and the ACP ecosystem due to the absence of monitoring programs. The idea of bringing together stakeholders in a workshop to discuss relevant biological issues, as described in Stipulation K-4, is an important step in BLM keeping abreast of the latest science, however, where is BLM coming together with these partners to implement comprehensive monitoring programs prior to development?

The 1998 ROD for the Northeast Plan stated that a Research and Monitoring Team (RMT) would coordinate research and monitoring projects related to the effectiveness of stipulations and surface resource impacts. The ROD further stated that monitoring would be undertaken to determine the status of the various resources in the planning area, to ensure compliance with and enforcement of the plan decisions and with stipulations attached to separate land use authorizations, and to measure the effectiveness of protective measures. Unfortunately, **[21.073]** BLM dissolved the RMT and there has clearly been a lack of follow through on developing a comprehensive monitoring program for the Northeast NPR-A. BLM has failed to establish adequate ecological baselines and, to our knowledge, still does not have an operational monitoring plan for this sensitive area. Reinstatement of the RMT with adequate funding is needed in order to insure that all stipulations and ROPs for the chosen alternative will meet their stated goals.

[21.074] Spatial connectivity is characterized by threshold dynamics, and small perturbations near threshold could have large effects. How does each alternative affect the fragmentation of wildlife habitat, and thus, population viability? Recent literature suggests that wildlife populations in general may be sustained in larger numbers in larger patches than in connected fragmented patches (Falcy & Estades 2007). Where does BLM incorporate such analysis into its CEA? Where is the discussion of principles of wildlife and conservation biology within the DSEIS pertaining to a quantitative assessment of habitat fragmentation for all key species?

This is necessary in order to identify the differences between alternatives and substantiate the effectiveness of the proposed Stipulations and ROPs designed to maximize protection of key resources.

[21.075] We propose that a quantitative CEA incorporate at least the following components or similar analyses as these methods yield:

1. A Resource Selection Model that incorporates wildlife movement monitoring data with landcover classification;
2. Population Viability Analysis that incorporates subsistence harvest and predator demands with wildlife population census data;
3. Establish Disturbance Coefficients that incorporate wildlife responses to industrial and other human activities;
4. Climate Change Scenarios that capture changes in temperature and precipitation in order to develop an understanding of the stability and trajectories for change of physical and biological resources on the Arctic Coastal Plain;
5. Model Habitat Availability: a) under the current non-development scenario; b) under a short-term minimum development scenario; c) under a future maximum development scenario including impacts of gravel roads that link North Slope communities; (d) under a gas pipeline development scenario; and e) model each scenario using a range of climate scenarios.

These data belong in a spatially explicit analysis (i.e. GIS based) of cumulative effects, and should be interpreted within the best scientific understanding of wildlife and conservation biology. This type of quantitative ecosystem-level analysis will result in a truly quantitative, substantial set of results upon which BLM can base its conclusions and decisions. The conclusions provided in the CE sections of the DSEIS are inadequate at capturing all of the impacts described and fail to provide any thresholds. Thus, the CE section of the document as it stands, is useless to the public and to land managers and policy makers that are charged with making science-based decisions in order to provide maximum protection during development of the Northeast NPRA.

[21.076] Clearly, the absence of an ecosystem level analysis makes it impossible to assess the efficacy of the Stipulations and ROPs in maximizing protection of resources. Because of the interconnectedness of all the physical, biological and social resources, the BLM must go further than independently considered them in the DSEIS. Some fundamental principles of ecosystem ecology underscore the importance of incorporating an ecosystem-level analysis into the CEA in the DSEIS. One of these principles is that ecosystems depend on heterogeneity at all scales, so, how will the BLM ensure that industrial development does not fragment ecosystems into patches that are missing key elements? Further, ecosystem composition (what and how much) and configuration (how it is arranged) must be distinguished from each other but considered together. Again, addressing this principle requires the BLM to examine and model different cumulative effects scenarios and use these analyses to guide selection of a viable development alternative that provides real protection for resources. And further, all patches and places are not equal. Just as there are "keystone species", there are keystone landscape elements. Some places may just be too valuable to risk development, and in the Northeast NPRA, these have been identified as Special Areas, which are to be provided with the "maximum protection measures" for all actions (42 C.F.R. § 2361.1(c)).

CLIMATE CHANGE IN CUMULATIVE EFFECTS

As science is increasingly showing, climate change clearly has the potential for catastrophic consequences in the Arctic with thermokarst and coastal erosion impacts already beginning to physical alter the landscape and changes in temperature and precipitation are altering landcover and habitat. Yet BLM attempts to dismiss incorporating climate forecasts into it's impact analysis, stating "While climate change and its component impacts are reasonably foreseeable and thus included in the cumulative effects discussion, the uncertainty surrounding the direction and magnitude to say nothing of the timing inhibits the quantitative or qualitative addition of those effects to the cumulative whole" (DSEIS at 4-624) and that "Given the level of uncertainty of the impacts of climate change, attempting to determine the effects of oil development...on individuals in the context of climate change is an exercise in speculation" (DSEIS at 4-626).

Despite these caveats stated by BLM, there are scientifically referenced discussions of climate change impacts on resources in the DSEIS, drawing on the ACIA (2004), IPCC (2001) and other refereed publications. The DSEIS discusses forecasts for temperature increases, as well as changes in precipitation, and the relevant implications for each of the key resources. This is not to say the discussion is complete or quantitative, however it seems relatively clear from reading the DSEIS that the BLM recognizes, at some level, impacts of the climate change presented in the scientific literature. However, [21.077] beyond simply reiterating these impacts, the BLM should be seriously considering the extent and intensity of climatic changes within the planning area and preparing a quantitative cumulative effects analysis. The best available scientific methodology has not been used to incorporate climate change into the cumulative effects analysis in a quantitative way, and this must be rectified.

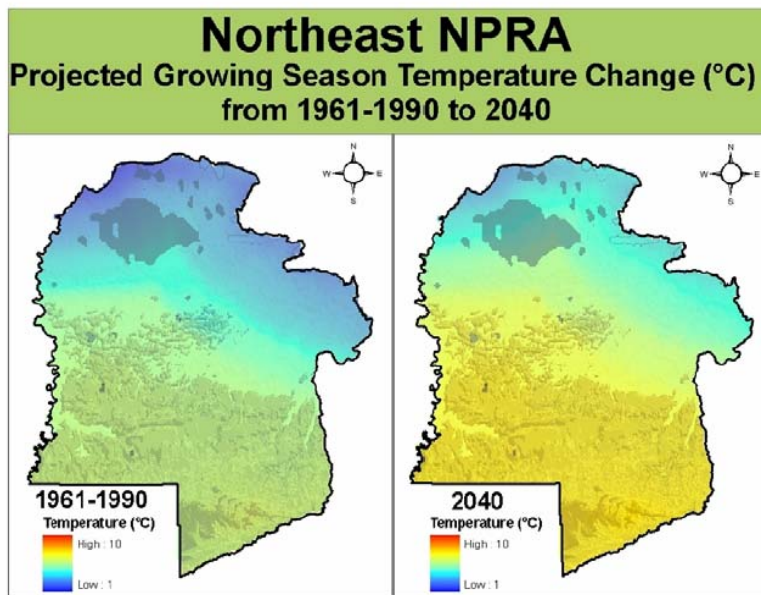
We have conducted a preliminary analysis of climate change impacts for the NE planning area to understand how temperatures and precipitation are predicted to change by the year 2040 and to provide an example of the type of analysis that BLM should be including in their cumulative effects analysis.

Our analysis uses averages derived from 5 Global Climate Models used by the IPCC, run for the intermediate emissions scenario A1B (IPCC 2007). We found that temperatures across NE NPRA, from the coast to the foothills, are predicted to increase approximately 3°C by 2040 above modeled historical averages (Table 1). Most of the increase will be observed in the winter, when temperatures increase by almost 5°C. Another important consideration is how monthly averages are changing in order to understand how arctic fauna and industrial activity will be affected. We did find enough warming in the early winter to indicate that the average freeze-up date will be increasing by approximately 1.4 days per decade, or 7 days by 2040. The onset of thaw is less affected, estimated to occur 3 days earlier by 2040. Of course, extreme events and greater variability are likely to occur and also need to be deduced from the modeled data in order to understand the impacts of climate change on arctic ecosystems and industrial development in the Arctic.

Table 1. Historical and Predicted Temperature and Precipitation for NE NPRA

	Historical Estimate 1961-1990	Predicted 2040 2035-2044	Δ	% Δ
Temperature (°C)				
Growing Season	4.3	5.5	1.2	
Winter	-24	-19	5	
Annual	-12	-9	3	
Precipitation (mm)				
Growing Season	95	123	28	29%
Winter	106	140	34	32%
Annual	202	262	60	30%

Growing season temperatures are predicted to increase by about 1.2°C on average over the entire planning area. In looking at these changes across the NE NPRA (Figure below), we see significant warming occurring North-East and East of Teshekpuk Lake, and then South and across the Arctic Coastal Plain into the foothills. These increased temperatures in the summer will continue to warm soils, increase thaw depths and lead to thermokarst, especially if vegetation shifts from wet, insulative moss/grass tundra to drier, shrubbier tundra. Coupled with only modest increases (30%) in precipitation, these warmer growing season temperatures could lead to greater drying of wetlands and ponds on the Arctic Coastal Plain, significantly impacting habitat conditions that support invertebrates, fish, waterfowl and mammals. Modeling PET and coupling these types of climate data with a Dynamic Vegetation Model will make it possible to develop a range of scenarios of future environmental conditions in the NPRA.



[21.078] Our method for doing this analysis involved two key components that could easily be accomplished by BLM. First, we partnered with the University of Alaska Scenarios Network for Alaska Planning (SNAP) Program, which provided us with the downscaled model data derived from the PRISM Group at Oregon State University and downscaled by the University of Illinois. SNAP researchers worked with The Wilderness Society to develop the statistical methods needed for analysis. Other federal agencies have formed partnerships with SNAP to incorporate climate change into their planning, and BLM should do the same. [Additional detailed](#)

information on our methods will be provided on request, and are similar to those in Walsh et al. (2007/submitted).

[21.079] Scientific evidence indicates that habitat changes are already occurring. For instance, the 2006 USGS report "Biological Response To Ecological Change Along The Arctic Coastal Plain" indicates that goose habitat in the area north of Teshekpuk Lake has been shifting eastward. Inexplicably, this information is not even mentioned in the cursory two paragraph section of the cumulative impacts chapter that addresses climate change implications on birds (DSEIS at 4-746).

Uncertainty is prevalent in all actions and impacts that the BLM is considering in the DSEIS, and cannot be used as an excuse for failing to develop a range of possible impacts and assessing what the biological and value-based thresholds are for the affected resources, ecosystem and human communities. The CEQ states that "Cumulative effects analysis necessarily involves assumptions and uncertainties, but useful information can be put on the decision making table now. Decisions must be supported by the best analysis based on the best data we have or are able to collect. Important research and monitoring programs can be identified that will improve analyses in the future, but their absence should not be used as a reason for not analyzing cumulative effects to the extent possible now" (p. 3, CEQ 1992).

This language is tied with the CEQ's principle of using the best analysis and the best data available in a quantitative analysis. While there is uncertainty in climate predictions, scientific analysis has revealed clear trends towards warming in the Arctic. Further, there is an extensive body of literature regarding the quantitative analysis of uncertainty and variability in environmental policy and decision making (e.g. Frey 1992 and onward; Morgan & Henrion 1990). Thus, within the scientific literature there are examples of a variety of statistical methods that can be used to address uncertainty that the BLM can use in its analysis of climate change and within the context of cumulative effects should BLM scientists feel that the uncertainty in the scientific literature surrounding climate change is too great (Webster 2002; Roe & Baker 2007).

[21.080] Global and Regional Dynamic Ecosystem Models have been used to predict how ecosystems, including the Arctic, will respond to changes in temperature and precipitation across ranges of values (e.g. Cramer et al. 2001) as well as in combination with landuse data (e.g. Starfield & Chapin 1996). This type of analysis is not speculative, as the BLM states (DSEIS at 4-626), but is the best available scientific method for addressing climate change at present. The data necessary to drive these models is publicly available, including landcover data, coarse and downscaled temperature and precipitation data for the Arctic coastal plain/Northeast NPRA, and updated fire impact information, given the 260,000+ acres burned in 2007 on the North Slope (Hopkin 2007). This input is critical towards modeling cumulative effects, as described elsewhere in our comments, when combined with landuse data which includes development scenarios for each alternative (DSEIS in Chapter 4.2 with an added spatially explicit analysis) and coupled with development across the Arctic Coastal Plain including the Northwest Planning Area.

Further, crossing thresholds can lead to unpredictable or irreversible changes. The DSEIS acknowledges that "due to loss of habitat, or from competition from other species whose ranges shift northward, the population of some Arctic species may be reduced, and extinction potentially accelerated" (DSEIS at 3-7). **[21.081]** This high-probability impact coupled with the certainty that oil and gas development will cause long-term significant impacts to key resources makes it an irresponsible decision to proceed with Alternatives B, C and D without putting

forth the scientific method used in determining the effectiveness of the Stipulations and ROPs intended to protect key resources, the Arctic Coastal Plain Ecosystem and human communities.

[21.082] We refer the BLM to the Preliminary Review of Adaptation Options for Climate-Sensitive Ecosystems (USCCSP 2007(draft)) for discussion and methods that can and should be incorporated into area management and leasing plans in order to promote ecosystem resiliency. Although this draft document does not address lands managed by BLM, there are many useful concepts that apply across ecosystems, including the ACP.

[21.083] DSEIS statement that protected areas are of limited value should be withdrawn

BLM states in DSEIS that terrestrial protected areas are of limited long-term value in an age of climate change: "Given the level of uncertainty of the impacts of climate change, attempting to determine the effects of oil development, whose scale and location are unknown, on individuals in the context of climate change is an exercise in speculation. Protected areas or reserves are of limited long-term value if the conditions within them are expected to change, possibly making them unsuitable or inaccessible. The only viable management response to climate change is to adopt desired outcomes and use adaptive management approaches to facilitate changes as warranted and possible to meet the desired outcomes." DSEIS at 4-626.

This dismissive BLM position is unsupported by science. Key areas in the NPRA should be permanently protected to 1) conserve their biological resources (molting goose habitat, caribou calving habitat and insect relief habitat, waterfowl and shorebird nesting habitat, raptor nesting habitat, marine mammal haul outs, key polar bear denning habitats, fish habitats etc.) and 2) provide a scientific baseline from which to understand and separate the causes of long-term environmental changes from human-caused industrial development as compared to those caused by climate change.

As an example of the fallacy of BLM's statement we can examine the vulnerability of terrestrial mammals to warming in the Arctic. For example, there are four separate herds of caribou on Alaska's North Slope: Western Arctic Herd (~460,000 animals); Teshekpuk Lake Herd (~45,000); Central Arctic Herd (~27,000); and the Porcupine Caribou Herd (~123,000). All four herds are prone to impacts from climate change, due among other things to increased harassment from insects, which can cause caribou to stampede, thus increasing energy expenditure and reducing food intake. Another impact is from the northern march of vegetation, which can reduce areas of tundra, and thus limit the traditional forage of these herds. NAS Report at 106-117.

While we await the enactment and implementation of new policies to address climate at its source, experts state that we should act to become more resilient to the adverse impacts of change. **[21.084]** Using a compelling, but by no means sole, example, the experts say it would be wise to protect the habitat of the Porcupine caribou herd as a way of making it more resilient to the effects of global climate change. Arctic Council, 2004 Arctic Climate Impact Assessment at 14. By analogy, the same would hold true of caribou habitat in the Northeast NPRA. Given the known impacts of oil development and the "high risk" of undertaking those activities in a climate change-affected Arctic drilling for oil in prime caribou habitat is antithetical to the protection of the caribou. Arctic Council, 2004 Arctic Climate Impact Assessment at 9.

Furthermore, in examining the potential impacts of increased oil and gas activity on caribou, the National Academy of Sciences reports the rather ironic fact that, despite the use of new technologies that have less surface disturbance: "higher insect activity associated with climate

warming could counteract benefits of reduced surface development by increasing the frequency with which caribou encounter infrastructure. NAS at 115.

Depending on the scope and intensity of surface development on the NPRA, experts report that impaired herd movements "during years of high insect activity" could reduce weight gain in lactating females, and thus impact calf survival. NAS at 116. And as the recent study of oil development and caribou demonstrates, caribou movements are restricted well beyond the immediate physically-disturbed area of oil and gas development.

BLM's statement in the SEIS that terrestrial protected areas are of "limited long-term value" therefore is simply wrong, seriously undercuts the use of protected areas as a central management tool for ensuring the long term health and diversity of the Arctic, and should be deleted from BLM's analysis.

Contribution of Oil from NPRA to Climate Change

While the current administration is reluctant to address greenhouse gas emissions (GHG), it is important to understand the contribution of oil derived from Northeast NPRA to climate change. Based on the oil resource estimates for each alternative (Table 4.2-D DSEIS), we project that if the CO₂ emissions are approximately 0.37 Metric tons of CO₂ (816 lbs) per barrel of oil (<http://www.eia.doe.gov/oiaf/1605/coefficients.html>), then the contributions of each alternative to atmospheric CO₂ are approximately 1.1, 1.2, 1.5, and 1.4 million metric tons of CO₂. With US total annual CO₂ emissions at roughly 6.0 million metric tons (Energy Information Administration 2005), this amounts to approximately 18-25% of our annual CO₂ emissions. Over a 15 year period (as a hypothetical life span of oil development in NE NPRA), this oil would amount to less than 0.01% of US CO₂ emissions. These estimates demonstrate how promoting energy efficiency in commercial and residential sectors would reduce the demand for this resource, make a significant contribution towards meeting goals of reducing emissions by 70% as suggested by GHG accounting models (e.g. Hadley Centre for Climate Prediction and Research) and allow the Arctic Coastal Plain and the human and wildlife communities within the ability to adapt to climate change without the added stress of industrial development. It is a relatively small amount of oil for incurring the social and biological impacts that a quantitative analysis would reveal.

VIII. INADEQUATE DIRECT, INDIRECT AND CUMULATIVE EFFECTS ANALYSIS AND IMPERMISSIBLE IMPACT TO SPECIFIC RESOURCES

The nature and extent of potential direct, indirect and cumulative impacts are significantly understated. While BLM has acknowledged the proposed actions for the Northeast Planning Area are of a level of significance to warrant a full NEPA review, BLM has failed to address the NEPA requirements for such an analysis in this document. A generic discussion of resources and potential impacts like that contained in the DSEIS cannot suffice as the required analysis.

TERRESTRIAL MAMMALS

[21.085] The DSEIS states (p. 4-748): "The primary effects from oil and gas exploration include habitat loss and disturbances that displace mammals from preferred habitat areas or impact their behavior." Unfortunately, the consequences of displacement may result in significant population-level impacts. Displacement from preferred habitat can also result in decreased nutritional status, lower reproductive rates, and higher mortality not just simple displacement.

[21.086] The DSEIS states: (p. 4-748): "Because mammal populations can show substantial changes between years and even over longer periods of time, it is often difficult to determine if

effects are accumulating at the population level, or merely reflect short-term shifts in population numbers." This statement is troubling as it appears to be an excuse for not doing a thorough cumulative effect analysis which also includes the integration of climate change. This is what long-term monitoring is for. Unfortunately, BLM twice eliminated the interagency Research and Monitoring Team (RMT) and has yet to develop a long-term monitoring plan as strongly recommended by the RMT (see monitoring concerns below).

[21.087] The DSEIS does not mention the problem of source-sink population dynamics that the NRC (2003) Cumulative Effects report identified as important and likely to increase in importance as more and more areas are developed. The SEIS simply continues to use direct footprints of activities with certain, mostly small, multipliers. This kind of analysis is simply inadequate.

A. CARIBOU

Seismic Activities and Exploration:

[21.088] The DSEIS (p. 4-749) assumes that the effects of seismic activities have "...no consequential effect on the abundance or productivity of the caribou." Although the DSEIS states that this assumption has not been "scientifically tested" and it is possible that this disturbance could have an added effect on winter mortality and which could reduce herd productivity, there is no quantitative analysis of the likelihood of this occurring. A simple qualitative discussion of these potential cumulative effects does not constitute an analysis and is inadequate for evaluating this significant action.

Oil and Gas Development and Production:

The DSEIS (p. 4-750) describes the total amount of North Slope habitat disturbance from oil and gas development through 2010 as 18,342 acres. The DSEIS also acknowledges "short-term displacement of caribou" from roads and abandonment of some calving habitat which "...could eventually limit the growth of the Arctic caribou herds within their present ranges..." (p. 4-750). The DSEIS states (p. 4-750): "It is possible that such an effect would not be apparent, however, because natural changes in the distribution and productivity of herds would be likely to influence the abundance and growth of caribou populations over and above the effect of reduced habitat use caused by cumulative oil development." The DSEIS goes on to summarize different conclusions regarding the potential for impacts to caribou ranging from no impact (Cronin et al. 1997, 2000) to population-level impacts (Griffith et al. 2002, NRC 2003, Cameron et al. 2005). This section of the DSEIS (p.4-751) summarizes key past and present effects of oil and gas development on caribou as follows:

- 1) "...impacts to habitat are additive to future impacts and would be likely to persist for several decades or more..."
- 2) "Oil and gas development has altered the distribution of female caribou during the calving season and interfered with caribou movements between inland feeding areas and coastal insect-relief areas."
- 3) "Female caribou may also experience lower parturition rates when in close proximity to oil field development."

However, the DSEIS goes on to state: "...disturbance of caribou due to oil field development may adversely affect caribou populations, but these effects are not readily apparent based on populations trends." **[21.089]** This concluding summary statement is problematical in the light

of compelling evidence that development, when teased apart (as recommended for CEA analysis), has resulted in significant impacts to caribou in juxtaposition with that development. Unfortunately, there is only a qualitative description of this issue and no substantive analysis of this important issue in the DSEIS.

Further, [21.090] although the DSEIS mentions that the NRC report (2003) concluded that calving caribou of the Central Arctic Herd have been displaced from their preferred areas and from insect relief areas by oil and gas activities, the DSEIS still gives credence to the speculation of Cronin et al. (1997, 2000) (which the NRC clearly considered inadequate) and then concludes that adverse effects might not be noticeable in any case because of natural variability. This discussion suggests that there is little concern about effects of development on caribou population dynamics under any of the alternatives presented. We take strong exception to this flawed argument.

The National Research Council (NRC 2003) of The National Academies completed a comprehensive report on "Cumulative Environmental Effects of Oil and Gas Activities Alaska's North Slope." The NRC report included a chapter on caribou (pp 170-188). Key NRC findings follow (p 116).

- * The intensively developed part of the Prudhoe Bay Oilfield Complex has altered the distribution of female caribou during the summer insect season. Elsewhere, a network of roads, pipelines, and facilities has interfered with their movements between coastal insect-relief and inland feeding areas.

- * Radio-collared female caribou west of the Sagavanirktok River shifted their movements away from oil field infrastructure nearer the coast to undeveloped areas inland. No such shift has occurred for caribou calving to the east of the Sagavanirktok River where there is no oil development. The shift by caribou west of the Sagavanirktok River was into an area with lower green-plant biomass than the area previously used. From 1988 to 1994, reproductive rates of caribou in regular contact with oilfield infrastructure west of the Sagavanirktok River were lower than those of undisturbed female caribou to the east. Reduction in parturition rates for those caribou was exacerbated by intense insect harassment during the period. Thus, it appears that the effects of oilfield development accumulate with effects of insect harassment by impairing caribou movements between coastal and inland habitats.

- * Possible consequences of these disturbances include reduced nutrient acquisition and retention throughout the calving and midsummer periods, poorer condition in autumn, and a lowered probability of producing a calf the following spring.

- * As a result of conflicts with industrial activity during calving and an interaction of disturbance with the stress of summer insect harassment, reproductive success of CAH female caribou in contact with oil development from 1988 through 2001 was lower than for undisturbed females, contributing to an overall reduction in herd productivity. The decrease in herd size between 1992 and 1995 may reflect the additive effects of surface development and relatively high insect activity, in contrast to an increase in the herd's size from 1995 through 2000, when insect activity was generally low.

- * Expanded loss of preferred habitats, which could accompany the spread of industrial activity across the National Petroleum Reserve-Alaska and into the foothills of the Brooks Range, and climate change that increases insect harassment, are likely to depress nutrient status and, therefore, summer weight gain of lactating females.

* Unless future requirements for infrastructure can be greatly reduced, exploitation of the oil and gas reserves within the calving and summer ranges of the CAH, TCH, and PCH will likely have similar consequences.

CEQ (1997) recommends that a cumulative effects analysis "...must tease from the complex networks of possible interactions those that substantially affect the resources. Then, they must describe the response of the resource to this environmental change using modeling, trends analysis, and scenario building when uncertainties are great." **[21.091]** This DSEIS fails to clearly articulate, analyze, and model the probability of cumulative effects of past oil and gas development on the Central Arctic Caribou herd. The NRC report quoted above provides a much more comprehensive review of the potential for population-level effects than the SEIS and even references the TCH as facing similar consequences as the CAH.

FUTURE EFFECTS ON CARIBOU AND THEIR ACCUMULATION

Seismic Activities and Exploration:

The DSEIS (p. 4-752) states that seismic exploration activity could impact up to 86,400 acres of habitat annually across the North Slope but only a small amount of habitat is likely to be affected in the long-term. The DSEIS goes on to say that if climate warming shortens the winter season to the point where ice roads are not economically feasible, the alternatives may cause greater habitat impacts than current policies. **[21.092]** The most recent scientific findings on climate change suggest that warming is accelerating in the Arctic. Thus it seems irresponsible that additional analyses of this issue were not conducted. At the minimum, there should have been a simulation analysis assessing different probabilities that the amount of gravel roads required for development would increase and an estimate of the impacts this would have on caribou habitat and populations.

Oil and Gas Exploration and Development Activities:

The DSEIS (p. 4-753) states: "All future impacts are additive to the impacts to habitat that have accumulated in the past and persist today, but in context of the entire Arctic Coastal Plain and North Slope, these cumulative impacts would be relatively small. Based on direct (33,962 acres) and indirect (132,401 acres) that could still persist in 2060, direct and indirect impacts to habitat would occur on 1.3% and the ACP and 0.29% of the North Slope. These estimates do not take into account the quality of habitat that would be impacted on the North Slope...Areas to the north and east of Teshekpuk Lake provide important calving, post-calving, and insect-relief habitat for TLH caribou. Thus, impact to caribou and other mammals from development in this area would likely be much greater than if development occurred in areas that were little used by caribou."

[21.093] The above analysis is very simplistic and significantly underestimates the potential cumulative effects of development on specific species or populations (e.g., Teshekpuk Lake Caribou Herd). We have offered a more focused quantitative cumulative effects analysis (below for the Teshekpuk Lake Herd) as an example. Quantitative analyses should be conducted and compared for each alternative in the DSEIS. **[21.094]** Further, analyses should also consider the additive or synergistic effects of climate change on habitat quality and quantity and the possibility of exceeding thresholds for sustaining local populations.

[21.095] The DSEIS states (p. 4-754) that pipelines from the Northwest Planning Area or a southern pipeline rout connecting to TAPS Pump Station 2 should have minimal effects on caribou movements once construction is complete because they would not be associated with

roads. We question this assumption because there is relatively little data on caribou interactions with roadless pipelines and recent GPS telemetry data for the TLH indicated disruption of caribou movements when a portion of the TLH encountered pipelines when they moved east into the ANWR (ADF&G unpublished data).

[21.096] The DSEIS states (p. 4-754) that oil and gas development "...effects on the TLH, CAH, and WAH caribou would accumulate with other past effects on these herds, although the likely magnitude of these effects is difficult to ascertain, especially given the increase in herd sizes that have occurred in recent years in spite of oil and gas development on the North Slope." This statement is very misleading. The only caribou herd mentioned that has significant overlap with North Slope oil and gas development is the CAH. Neither the TLH or WAH have any significant development within their usual seasonal ranges and certainly nothing on their calving grounds. The likelihood of magnitude is difficult to ascertain because there has been no attempt to analyze this issue. This cumulative effects analysis for caribou is virtually free of any kind of substantive quantitative analysis which represents a serious flaw in the DSEIS. Why hasn't this DSEIS conducted an analysis of the TLH like Griffith et al. (2002) completed for the Porcupine Caribou Herd in the Arctic Refuge Coastal Plain?

Global Climate Change and Caribou: The DSEIS states that "...the large amount of natural variation inherent in the system limits our current understanding of the consequences of climate change. This and the complexity of tundra ecosystems make predicting the effects of climate change on terrestrial mammals difficult." Yes, uncertainty makes predictions difficult. But that is the purpose for conducting a cumulative effects analysis. **[21.097]** This Cumulative Effects section and climate change analysis is more a qualitative discussion and list of excuses than a real analysis. What is needed here is a series of quantitative analyses as suggested by the CEQ (1997): "Determining the cumulative environmental consequences of an action requires delineating the cause-and-effect relationships between the multiple actions and the resources, ecosystem, and human communities of concern. Analysts must tease from the complex networks of possible interactions those that substantially affect the resources. Then, they must describe the response of the resource to this environmental change using modeling, trends analysis, and scenario building when uncertainties are great." Why doesn't the DSEIS establish some sideboards for different development alternatives and estimate probabilities of outcomes and consider thresholds for habitat and population impacts? Those are the kinds of analyses that would make this DSEIS useful in evaluating the consequences of major development within the Northeast Planning Area.

The DSEIS (p-4756) states: "Changes in weather patterns could alter caribou movement and distribution. Calving grounds could shift...Insect relief habitat could become increasingly important...Coastal erosion and the inundation of low-lying areas along the coast due to increases in sea level may alter the availability and extent of insect-relief areas and may cause shifts in the usage of particular areas. Over time, areas that are currently close to leasing could become less important to caribou, while areas that are open to leasing could become more important." **[21.098]** Is this section suggesting that any analysis is impossible and any conservation strategy is hopeless? Unfortunately there has been no analysis so we are unable to determine what strategy is the best strategy for hedging our conservation bets in a time of uncertainty. If an analysis is not completed and a conservation strategy is impossible to develop, why is it prudent to design a major development project in the area north of Teshekpuk Lake which is considered by all agency scientists as critical calving and insect relief habitat for the Teshekpuk Lake Herd. The lack of analysis in the DSEIS and proposed development alternatives don't make sense. The bottom line is that this section on cumulative effects on caribou is completely inadequate.

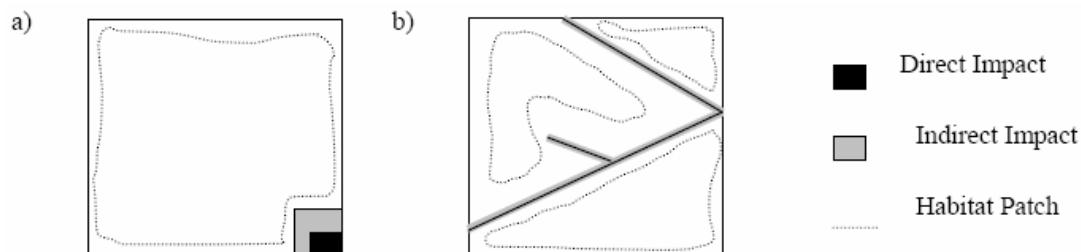
Contribution of Supplement Alternatives to Cumulative Effects:

The DSEIS (p. 4-757) estimates the direct and indirect impact of development vegetation (habitat) on the Planning Area ranging from 0.28% (Alt A) to 0.39% (Alt C). It further estimates that "These habitat losses would account for 3 to 14% of the habitat projected to be lost due to development on the North Slope during the next 50 years." It describes lease stipulations developed for Alternative D that would protect caribou habitat. Finally, the DSEIS compares the cumulative impacts of each alternative on caribou. For example: "The effects to caribou and other mammals from oil and gas development would be less under Alternative A and perhaps intermediate under Alternative B...The effects would be greatest under Alternative C...The effects from Alternative D would potentially be less than Alternative C...but greater than Alternative B." [21.099] This is clearly not a science-based quantitative analysis of the potential cumulative effects of development on caribou within the Planning Area. Rather than a quantitative analysis, this is a qualitative discussion and completely fails to recognize the importance of the calving habitat located in the planning area. This analysis does not satisfy the Court's order requiring further analysis of the cumulative impacts of increased activity in the Northeast NPR-A and corresponding increase in development in the Northwest. This issue is particularly important to the Teshekpuk Lake herd.

When analyzing cumulative effects under the National Environmental Policy Act, the CEQ (1997) recommended that: "Analysts must tease from the complex networks of possible interactions those that substantially affect the resources. Then, they must describe the response of the resource to this environmental change using modeling, trends analysis, and scenario building when uncertainties are great." We have provided an analysis below as an example of the kind of analysis that would provide some level quantification to estimates of habitat impacts to the Teshekpuk Lake Herd.

[21.100] In considering the cumulative effects of industrial infrastructure on the Teshekpuk Caribou Herd within the Northeastern Planning Areas of NPRA, we have used a hypothetical development scenario for Alternative D (SEIS 2007) as an example. This analysis provides a quantitative assessment of the potential impacts of future oil and gas development on habitat loss and habitat fragmentation within the Teshekpuk Lake Special Area (TLISA). This quantitative analysis highlights the inadequacy of the qualitative comparison of alternatives in which the SEIS considers development impacts on wildlife habitat. This is but one example of the type of quantitative analyses that should be considered necessary for any kind of scientifically credible cumulative effects analysis on wildlife habitats and populations within the NPRA.

Clearly, the following two scenarios are very different:



While the above diagram is not drawn to scale, our point is to show how the measure of the amount of area that is impacted directly and indirectly by oil and gas development may be a small portion of the total area (a), however, the reality of such development (b) is not only the

area impacted, but the fragmentation and displacement that also occurs. The DSEIS describes the direct impact under Alternative D as being 13,000 acres or less than 0.3% of the total planning area (DSEIS p. 4-757). More ecologically meaningful estimates are to examine (1) what percentage of the area will be fragmented by oil and gas development (2) how large are those patch sizes, and (3) what are the cumulative effects of this fragmentation.

From our hypothetical development scenario, we have done a simple analysis to understand how oil and gas development could fragment caribou calving habitat and reduce its value. Based on the information available in the DSEIS, disturbance of caribou from traffic associated with pipelines has been shown to cause short-term (calving season) displacement of caribou within about 2.5 miles for parturient females and calves and subsequent abandonment of some calving habitat (DSEIS p. 4-750). We have taken this disturbance coefficient and overlaid a 2.5 mile buffer from the edge of each road in our hypothetical oil and gas development scenario. In our habitat fragmentation analysis, we considered only the impact of roads on parturient caribou with calves, although all infrastructure (including pipelines without roads) may also create some level of disturbance. The analysis was done in ArcGIS using simple commands.

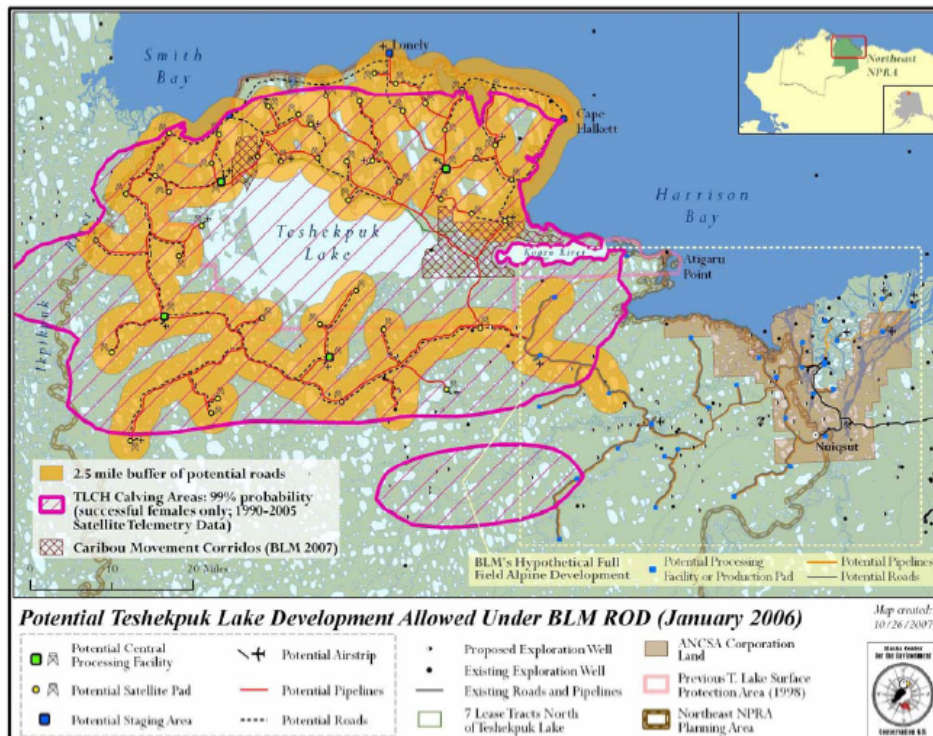
We estimated that the Teshekpuk Lake calving area (DSEIS Map 3-23) within the 99% or greater fixed kernel probability of use around the lake (Person et al. 2007), but not including two additional calving areas to the south, has an area of approximately 1.5 million acres. Estimates of surface water in this region range from approximately 32% (Audubon 2002 at IV. 1-1) to 40% (DSEIS p. 3-38); our independent estimate places surface water coverage at 37%, which leaves 1.0 million acres of non-water habitat.

Our hypothetical development for the area within the seven lease tracts proposed in Alternative D amounts to less than 1,700 acres, including 1,100 acres of roads (151 miles), while the DSEIS would allow up to 2,100 acres of development (300 acres/lease tract; SEIS p. 2-12). Using the nearby Alpine Oil Field as a possible development scenario, we have added an additional 218 miles of roads south of the lake, resulting in a total of 369 miles of roads or 2,800 acres of direct impact. Thus, less than 0.01% of the non-water habitat in the calving area is directly impacted. However, by adding the 2.5 mi buffer to the edge of each road to estimate disturbance to calving caribou, we find that this would affect approximately 650,000 acres, or 65% of the non-water habitat within the calving area. As seen in the attached map with the 2.5 mile buffer added to the hypothetical development scenario, allowable development under Alternative D impacts nearly the entire calving habitat north of the lake as well as substantial habitat south of the lake. Despite stipulations to minimize disturbance in the northwestern caribou migration corridor by prohibiting roads in part of this corridor, this area could be entirely affected by nearby roads, as seen in our analysis. The eastern corridor would experience a low level of impact.

Clearly, our example of a habitat fragmentation analysis reveals that Alternative D is inadequate to protect critical caribou calving habitat even with leasing and occupancy restrictions outlined in the DSEIS. Although this analysis is based on a hypothetical scenario, it is provided to demonstrate the kind of quantitative analysis that would be useful in evaluating different scenarios. Similar analyses should be conducted for each alternative. Based on this type of analysis, the BLM could quantitatively assess how much less or greater an impact Alternatives B and C would have on caribou calving habitat. Only Alternative A, which was designed to protect this important biological area, appears to be adequate for insuring that calving caribou are not displaced or disturbed.

While we recognize that the BLM or the Lessees will not know exactly where infrastructure will be placed until exploration is completed, there must be some attempt to estimate the range of

possible developments which may occur here. In fact, the DSEIS does estimate this acreage for ice roads, pads, and airstrips as well for other development and estimates the loss of vegetation/mammal habitat (DSEIS p. 4-757). While we have developed one hypothetical scenario for this area, one that is possible with all of the restrictions put forth in the DSEIS for Alternative D, clearly there are other possible scenarios. Analyzing potential development overlays should be done as an iterative process, using a GIS with habitat data for all species of concern within the planning area, in order to quantify the potential range of impacts to habitat and to develop a scientifically based alternative for development. Alternative D allows 300 acres of development in the 7 lease tracts that encompass critical caribou and molting goose habitat. Where is the analysis that would provide assurance that this level of development will not cross viability thresholds for these populations? Where is the analysis of the additive or synergistic effects of climate change on habitat abundance and quality? Our example above is used here to demonstrate the kind of analyses that should be required to ensure that there is a scientifically credible analysis to reasonably support the important management decisions affecting this unique Arctic habitat.



[21.101] The DSEIS (p. 4-758) describes impacts to vegetation (mammal habitat) as additive relative to past, present, and future oil and gas activities. It goes on to suggest that oil prices, which could affect how much oil is developed, could result in synergistic effects on acreage of habitat affected and level of disturbance to mammals. If synergism is the simultaneous action of separate forces that have a greater total effect than the sum of their individual effect, then we suggest that there could be synergistic effects from oil and gas development when combined with climate warming. This issue has not been addressed by the DSEIS and this is a serious deficiency. Clearly, the potential impact to caribou habitat as a result of development north of Teshekpuk Lake could be very significant depending on which alternative BLM selects. Add to this the rapid changes to habitat from coastal erosion north of the lake and changes to vegetation from salt water intrusion, the likelihood of a synergistic effect on caribou habitat

could be significant. Where is this analysis to help understand whether this could be a significant concern or not?

The DSEIS (p. 4-758-9) section on caribou concludes by stating that cumulative effects on caribou distribution and abundance are likely to be long term and lasting through the life of oil and gas development. The DSEIS also states: "However, this potential effect might not be measurable, given the great natural variability in the caribou population productivity." [21.102] Unfortunately, the DSEIS provides no substantive analysis regarding natural variability in caribou population dynamics over time or how this could be influenced by impacts of development and climate change. Many population models incorporate stochastic variables. Why didn't this DSEIS attempt to identify quantitative thresholds for the effects of development activity on caribou habitat and populations and how this might be impacted by a warming climate? With so much change occurring in this region, particularly in a place like the Teshekpuk Lake calving and insect relief habitats, it seems only responsible that the management agency would provide some kind a simulation modeling in an attempt to evaluate potential impacts to wildlife populations that could be at risk. In order to measure long-term population change and potential impacts from management, there must also be a long-term monitoring plan. It is not clear from this DSEIS that such a plan is in existence, although a group of interagency scientists have been strongly recommending action on such a plan.

Caribou Habitat Stipulations (K-6): This stipulation (DSEIS Appendix F) is designed to minimize hindrance of caribou movement within coastal insect relief areas by requiring exploration and development activities to be located at least 3/4 miles inland from the coast. [21.103] Clearly, this stipulation was not evaluated relative to climate change. Recent data have demonstrated significant coastal erosion, from 10 to 100 yards annually, north of Teshekpuk Lake. In a decade or more, at that rate, a 3/4 mile no development buffer could be substantially eroded. There is no analysis or assurance that this stipulation could fulfill the conservation protections for which it was established. This is another example of the lack of rigorous cumulative effects analysis and quantification that an EIS is expected to produce. Basically, we have no assurance that this stipulation can deliver what BLM promises in terms of conservation of the wildlife habitat values that are concentrated in this unique Arctic wetlands.

B. POLAR BEAR

The DSEIS (p. 4-789) describes the kinds of impacts that are likely to affect polar bears of the Southern Beaufort Sea Population. Like caribou, much of the focus is on the direct loss of tundra habitat that makes up a relatively small percentage of the coastal plain. Seismic and exploration activity during late fall and winter are acknowledged to be the activities most likely to have adverse impacts to polar bears, primarily denning females and cubs. [21.104] However, there is no spatial analysis or attempt to measure the potential amount of coastal habitat impacted within the most likely denning habitat. A large spill is identified as the biggest potential threat to polar bears but there is no estimate of the probability of such a spill. This lack of quantitative analysis continues to plague this DSEIS.

[21.105] The DSEIS fails to take into account the increasing prevalence of polar bears denning onshore. As is acknowledged in the DSEIS, winter exploration has the potential to harm denning females and cubs. In its analysis of alternatives, the DSEIS concludes for each alternative that the impact on polar bears would be insignificant because of the relatively low density of denning bears in the planning area. DSEIS at 4-189, 4-335, 4-450. [21.106] This conclusion, however, fails to take into consideration recent information BLM cites in the cumulative impact sections, which indicates that climate change is leading polar bears to den

onshore in increasing densities. DSEIS 4-625. Accordingly, the conclusions are arbitrary and should be revisited.

Climate Change is acknowledged in the DSEIS as a serious threat to polar bears world wide. [21.107] The most recent analysis conducted by the USGS (2007) is not reviewed in the DSEIS. USGS published 9 administrative reports on the status of polar bears and the probability of impacts from climate change and loss of sea ice habitat in the fall of 2007. These reports are very thorough and provide a science-based projection regarding changes in the distribution and character of Arctic sea ice and polar bear populations over the next century. Key USGS findings include:

1. Polar bears are dependent on sea ice habitat (Stirling and Lunn 1997; Amstrup 2003);
2. Arctic sea ice has been in decline for decades (DeWeaver 2007);
3. Based on 10 of the most applicable sea ice models, all lose at least 30% of their September ice by 2045-2055 and seven are ice free by the end of the century (DeWeaver 2007);
4. The models are likely conservative in their estimate of rate of future decline in sea ice (DeWeaver 2007);
5. Of the four subpopulations of polar bears that were reviewed in this report, the northern Canadian Archipelago population appear to be stable while the Hudson Bay and southern Beaufort Sea (SBS) populations of Alaska and Canada appear to be undergoing some level of decline related to declines in sea ice (Hunter et al. 2007, Obbard et al. 2007, Regehr et al. 2007, Rode et al. 2007, Stirling et al. 2007).
6. Under a range of ice conditions, the subpopulation of polar bears in the SBS is projected to decline severely by the end of the century and in many scenarios by mid-century (Amstrup et al. 2007);
7. The large retreat of summer sea ice may eventually preclude polar bears from returning to onshore denning habitat (Bergen et al. 2007).
8. Amstrup et al. (2007) project a 42% loss of optimal polar bear habitat during summer in the polar basin by mid century.
9. Using two types of models, Amstrup et al. (2007) forecast extirpation of polar bears in the Polar Basin divergent ice ecoregion (including the SBS) and Hudson Bay within 45 to 75 years from present. These populations represent two thirds of the world's polar bears.
10. Polar bears will continue to find refuge in the northern Canadian Archipelago which could ultimately provide a founder population for repopulating southern ranges if climate warming is reversed and sea ice expands to its former range in the SBS and elsewhere (Amstrup 2007).

Based on these new findings (summarized above), it is likely that the polar bear will be listed as a threatened, if not endangered, species under the ESA. The management of human actions in the Arctic needs to be conservative and precautionary in order to maintain polar bear population as close to intact as possible. In this way, once climate warming is stabilized and reversed and sea ice expands, there will be as robust a population of bears as possible to begin repopulating historical polar bear range. For Alaska, this precautionary approach counsels that we minimize the loss of polar bears due to other sources of impact. Although diminished reproduction and recruitment will likely be the first impacts of sea ice habitat loss, the

longevity (>20 years) of individual bears may work in favor of conservation if some bears may persist through population bottlenecks and contribute toward rebuilding future populations. To ensure conservation of polar bears in the Alaskan Arctic, management measures must be designed to mitigate potential conflicts with resource development and other human activities in habitats that may be repopulated.

The DSEIS states that requiring operators to obtain a letter of authorization from FWS will be effective to minimize disturbance to denning polar bears. DSEIS at 4-176. The DSEIS also depends on a stipulation prohibiting seismic surveys within one mile of known or suspected dens to protect denning polar bears against this disruptive activity. DSEIS at 4-189. Any measure to protect denning polar bears is contingent on successfully locating occupied dens, because only a small proportion of polar bear den locations are actually known in any given year. See 71 Fed. Reg. 43,926, 43,935 (Aug. 2, 2006). **[21.108]** The DSEIS does not indicate how BLM will ensure that operators actually locate potential dens in the vicinity of seismic surveys. Under the FWS regulations that authorize the incidental take of polar bears, the Service employs a den habitat map, in conjunction with aerial forward-looking infrared surveys, to locate polar bear dens. See 50 C.F.R. § 18.128(e)(2)-(3). This den habitat map, however, does not identify den habitat in the NPR-A. See *id.*; see also http://www.absc.usgs.gov/research/sis_summaries/polar_bears_sis/mapping_dens.htm. Therefore, BLM arbitrarily assumes that these measures will be effective to prevent adverse effects to polar bear reproduction and recruitment.

As the National Research Council has recognized, the effects of climate change on polar bears will accumulate with the effects of oil and gas development. NRC (2003). Sea ice loss has already caused statistically significant declines in cub survival in the Southern Beaufort Sea population. Regher (2006). **[21.109]** Any incremental decrease in reproduction or recruitment due to disturbance of denning females by seismic surveys or other activities associated with oil and gas development will amplify the extant decline in recruitment and, therefore, even if such disturbance is only intermittent, it will be significant at the population level. Thus, BLM arbitrarily concludes that such disturbance will not accumulate or affect the population over time. DSEIS at 4-787.

[21.110] The discussion and analysis of climate change in the DSEIS is completely inadequate to evaluate how this management plan will maintain our conservation options for polar bears on the Arctic coastal plain and particularly in NPRA. It is likely that polar bears will increase the proportion of their maternal denning on land. This DSEIS must evaluate this likelihood and analyze and compare the proportion of denning habitat that could be affected by the various alternatives under consideration for the Northeast Planning Area. **[21.111]** As with caribou, the 3/4 mile coastal buffer could be significantly eroded within the next decade if coastal erosion continues or accelerates. **[21.112]** The DSEIS states (p. 4-791) that: "Recent past, present, and reasonably foreseeable actions that could affect polar bears are not expected to accumulate to the level that result in population level effects." There is no quantitative analysis or modeling to support such a conjecture. This DSEIS is completely inadequate in its analysis of the cumulative effects of oil and gas development on polar bears and the interacting affect of climate change.

C. MUSK OXEN

[21.113] The DSEIS provides little information about the potential cumulative effects of oil and gas development on musk oxen. In fact, this document does not acknowledge that there is now a resident population of musk ox within the planning area (ADF&G unpublished data).

In conclusion, the DSEIS fails to clearly articulate, analyze, and model the relative probability of cumulative effects of each of the alternatives on population-level impacts to wildlife in the Northeastern Planning area of NPR-A in general and of the critical wetlands habitat within the Teshekpuk Lake region specifically.

BIRDS

The effects of the various alternatives on birds are described in Chapter 4.6.8. The alternatives and the description of impacts are for the most part the same as described in the previous Northeast final EIS and IAP. In general, previous comments contained in our letter of August 20, 2004 and Audubon's letter of August 23, 2004 on the Draft Amended Northeast NPR-A IAP/EIS apply to the impact descriptions contained in this DSEIS for the Northeast Planning Area.

A. GEESE and BRANT

Most of the tens of thousands of molting geese utilizing the Northeast Planning Area, including up to 30% of the Brant in the Pacific flyway, are found on the lakes generally north and east of Teshekpuk Lake. These geese are flightless and are particularly prone to disturbance (Derksen, et. al. 1992). [21.114] The description of impacts fails to recognize these unique populations and habitat in the context of other populations and wetland areas on Alaska's North Slope, the Arctic Coastal Plain and the circumpolar Arctic. [21.115] Similarly, the specific impacts on molting geese, in contrast to migrating, staging, and even nesting birds, are treated superficially and presumed to be considerably lessened through mitigation measures, notwithstanding the absence of specific studies on the effects of oil and gas development on molting geese. [21.116] Alternative D allows pipelines throughout sensitive goose molting habitat, presumably based on the assumption that pipelines pose less threat to molting geese than other types of infrastructure. There is no scientific support, however, in the DSEIS for this assumption. In general, Impacts are generally quantified only as to acres of habitat actually lost through the "footprint" of particular developments and not to the much larger area of disturbance created by the development. For example, impacts could be expected up to 0.5 mile or even greater from road development in the case of molting geese (Derksen et. al. 1992). These impacts would be especially acute in the area north and east of Teshekpuk Lake under all but Alternative A. [21.117] In regard to direct loss of habitat used by molting geese, there is no discussion of how limited such habitats are north and east of the lake, and what losses to those specific habitats (moss/peat flats along shorelines of thaw lakes) would be under various development scenarios. See Ward et al. (2005).

B. WATERFOWL and YELLOW-BILLED LOONS

Similarly, impacts of oil and gas development on other waterbirds shown to be present in significant numbers surrounding Teshekpuk Lake, including eiders, long-tailed ducks, pintails, and loons are described as being insignificant. [21.118] The impact discussion is particularly lacking for yellow-billed loons, a species of great concern and possible decline. The U.S. Fish and Wildlife Service is currently conducting a review under the 90-day Findings procedures of the ESA of a petition to list the yellow-billed loon as Threatened or Endangered. Yellow-billed loon nesting habitat is restricted to the Arctic and more specifically limited to certain deep lake habitats. Most of the yellow-billed loons in the U.S. nest in NPR-A, and some of those are in lakes surrounding Teshekpuk Lake. Yellow-billed loons are particularly sensitive to disturbance during nesting (North 1994, Barr 1997, J. Schmutz, personal communication). The description

of impacts fails to take these factors into account and lacks all quantification of possible impacts on an extremely small population.

C. SHOREBIRDS

[21.119] Impacts to shorebirds are very generally described with no quantification and little differentiation among species and their habitats. Although buff-breasted sandpipers, a relatively rare and declining species found in significant concentrations in the Planning Area, are singled out for some description, other birds for which analysis of specific impacts are warranted due to declining populations and specialized nesting habitats include bar-tailed godwits, dunlins, American golden-plovers, and whimbrels.

D. SPECTACLED and STELLER'S EIDERS

[21.120] Section 4.4.10 describes impacts to Threatened Species under the ESA including spectacled and Steller's eiders. Although both species occur in the Northeast Planning Area, populations and concentrations are quite distinct. Lakes surrounding Teshekpuk Lake have relatively high densities of nesting spectacled eider (Map 3-32), while Steller's eiders are found in more scattered and less concentrated areas of the Planning area (Map 3-31). However, impacts are generally combined and not distinct with regard to species or particular areas of concentration. More data on these threatened species has been compiled since the last Biological Opinion and additional consultation with the U.S. Fish and Wildlife Service on both the Northwest and Northeast planning areas is required prior to the final Record of Decision on the IAP.

The Fish and Wildlife Services was particularly concerned about the impact opening the Northwest planning area would have on these species. As the Court found, BLM failed to analyze the increased development in the Northwest that would be facilitated by opening the Teshekpuk Lake area to leasing and the cumulative impacts this would have on species like spectacled and Steller's eiders. **[21.121]** Accordingly, this EIS must look at not only the direct impacts to eiders in the Northeast, but the cumulative impact of increased activity in the Northwest.

E. CUMULATIVE IMPACTS TO BIRDS

Chapters 4.7.7.8 and 4.7.7.10-b discuss the cumulative effects to non-threatened and threatened bird species respectively that could result from management actions in the planning area. In an effort to review the adequacy of this discussion it is necessary to understand what constitutes a rigorous approach to the evaluation of cumulative impacts. **[21.122]** CEQ guidelines for cumulative impacts state that:

"Determining the cumulative environmental consequences of an action requires delineating the cause-and-effect relationships between the multiple actions and the resources, ecosystem, and human communities of concern. Analysts must tease from the complex networks of possible interactions those that substantially affect the resources. Then, they must describe the response of the resource to this environmental change using modeling, trends analysis, and scenario building when uncertainties are great."

(CEQ 1997)

The cumulative impact discussion on birds, and for that matter, on most resources of the Northeast Planning Area, fails to follow these guidelines. Rather than quantification of impacts and true analysis utilizing the tools described by CEQ, the chapter contains merely a

qualitative discussion of possible impacts. The most definitive statements are variations of the sentence contained in the conclusion paragraph in 4.7.7.8.5:

"Impacts in the planning area would increase the total amount of bird habitat and disturbance related impacts sustained by all oil and gas development, and would be additive in nature except in potential cases where synergy is likely."

[21.123] This type of discussion is generally applied to most bird species without regard to unique, declining, or small populations, very specialized habitat requirements, specific geographic locations in the planning area, species characteristics, such as molting, nesting, propensity to disturbance, the types of developments predicted, and the most likely locations of developments relative to significant bird populations and habitats.

Similarly, the impacts from development are most often discussed in terms of the actual "footprint" of the development. For example, the impacts on birds and bird habitat are described in terms of the acreages involved in pad or road construction, and which are then added to the acreages in other current and proposed developments and finally compared to the acreage of land across the North Slope or the Arctic Coastal Plain, yielding fractional percentages of "impacted" bird habitat. Further minimizing the described impacts is the failure to acknowledge and quantify the significantly larger area impacted by disturbance from development beyond its "footprint". For example, molting geese and nesting yellow-billed loons are known to experience stress and attempt to escape (flight in the case of loons; running and swimming for molting geese) at distances up to 0.5 mile. Thus, the total area of impact is vastly understated in the impact discussion.

[21.124] Further, the cumulative impact description ignores the specialized habitat needs of different species and the differences in seemingly similar vegetative, hydrologic and other land components across the Arctic. Not all habitat within the range of a given species is of equal value or use for that species. For example, nowhere else in the circumpolar Arctic do geese migrate to molt in the numbers found in the relatively small area north and east of Teshekpuk Lake. Disturbances to this area could have profound effects on the species involved and alternate habitats may not exist. **[21.125]** Similarly, the very specialized nesting requirements of the extremely small population of yellow-billed loons concentrate many of the nesting sites of this species around Teshekpuk Lake (including south and west of the Lake). This limited habitat coupled with their documented susceptibility to disturbance makes impacts in these areas particularly in need of substantive analysis.

[21.126] While the cumulative impact discussion includes mention of global climate change, the discussion is superficial, lacking quantification of specific impacts on specific species. Recent USGS work on coastal erosion (Mars and Houseknecht 2007) is cited, but the dramatic findings on the specific amount and rates of coastal erosion (more than 0.5 mile in the past few years) and saltwater intrusion along the coastline of the planning area are not included or utilized in an analysis of changing bird habitats.

[21.127] Similarly, the potential effects of climate change on the drying out of lakes and on falling lake levels (Smol and Douglas 2007) and the respective impacts on nesting and molting waterfowl such as geese and yellow-billed loons are not discussed. **[21.128]** Additional potential cumulative water and lake impacts that should be considered involve the use of surface water in the construction of ice roads, pads and other developments. The DSEIS states that lakes from which water has been withdrawn generally refill the following summer. It does not deal with the fact that nothing is known about the ecological consequences of such withdrawals, that is, what happens to populations of invertebrates and fish and the species that depend on them for

food such as yellow-billed loons? The NRC report pointed out this lack of knowledge but nothing has apparently been done to remedy the deficiency. Water removals, combined with climate changes and other factors could affect populations of birds, including endangered species, if the food base in the lakes were damaged.

[21.129] Additional recent USGS studies that may be reflective of other important changes in the environment which should be presented and analyzed within the context of cumulative impacts include changes in molting areas utilized by various goose species (e.g., Flint et al. 2007).

Notwithstanding the findings of the U.S. District Court in September of 2006 that cumulative impacts of developments in the Northeast planning area should be analyzed for the resources of the Northwest planning area, **[21.130]** no specific analysis of the impacts on specific resources in the Northwest Planning Area are presented. For example, the northeast portion of the Northwest planning Area contains high concentrations of nesting waterfowl and shorebirds, including threatened spectacled eiders, which could further be impacted if development occurs around Teshekpuk Lake under the Northeast IAP. The cumulative impacts on spectacled eider and other birds in both the Northeast and the Northwest Planning Areas need to be analyzed in a comprehensive and quantifiable manner.

[21.131] Chapter 4.2.1.2 presents the change in assumptions for the price of oil contained in the previous Northeast EIS/IAP from \$30 to \$50/barrel. Beyond a relative statement that "more" development might be expected with higher oil prices, there is little attempt to quantify the increase in expected or potential development and the respective impacts on birds and other resources. Nor is there an attempt to relate expected higher oil prices on increased development in both the Northeast and Northwest areas and the respective impacts on resources in both planning areas.

[21.132] Coupled with this problem is the failure to focus an analysis of impacts on those areas that the document states have the highest potential for oil and gas development. It is stated the Barrow Arch area, generally running north of Teshekpuk Lake from the northwest and to the southeast, holds the greatest potential for oil discovery and development. It is also stated that under Alternative D approximately 800,000 barrels of recoverable oil more than the no-action alternative could be expected-reserves about the same as two Alpine-size fields. Yet, the impacts on the unique and particularly sensitive bird and other wildlife in this same area are often combined across the broader range of the entire Northeast Planning Area and even the much larger Arctic Coastal Plain. Additionally, **[21.133]** the location of the types of development permitted which could be expected under this development scenario requires much more detail to understand impacts. For example, the construction of roads and pipelines would be restricted to suitable upland routes which are severely restricted in the terrain north and east of Teshekpuk Lake and which could magnify impacts on both upland and near shore birds and other wildlife.

[21.134] The DSEIS very generally describes impacts to birds and other wildlife in the Northeast Planning Area (e.g., "there will be impacts"); it discusses past, present and proposed developments outside the Northeast Planning Area; it mentions possible impacts of global climate change; and it acknowledges increased development with higher, more realistic oil prices. Nowhere, however, does the document, as per the CEQ's guidance, contain analysis "delineating the cause-and-effect relationships between the multiple actions and the resources, ecosystem, and human communities of concern...and tease from the complex networks of possible interactions those that substantially affect the resources."

For a meaningful analysis of cumulative effects on birds, the many factors known to play a role must be brought together, studied and analyzed to give a true portrayal of the cumulative impacts of the proposed actions.

F. Molting Geese and General Avian Diversity, Abundance and Productivity

Teshkepuk Development Conceptual Approach

These additional comments on BLM's Draft Supplemental Integrated Activity Plan Environmental Impact Statement (SEIS) for the Northeast National Petroleum Reserve-Alaska (NPR-A) will use the hypothetical development scenario crafted by Loya and Schoen (above), and its spatial implications, to discuss likely effects on molting geese in particular, and on avian diversity, abundance, and nest productivity in general. This scenario allows for a more realistic examination of direct and indirect effects on wildlife than proffered in the DSEIS and make clear the likely serious consequences to caribou (above) and to molting geese (below).

The proposed development would impact for the first time the heart of one of the largest (if not the largest) arctic wetland complexes in the entire circumpolar arctic (see first image, below).



Arctic wetlands are the most productive of arctic landscapes, and are where most of the avian diversity of the arctic resides. Western arctic Alaska is well recognized for its high diversity of bird species, particularly that of shorebirds, the most diverse of arctic wildlife taxonomic groups (Johnson, et al., 2007). These wetlands are clearly productive for providing insect prey to shorebirds and songbirds, and abundant sedge and other plant material for waterfowl. The abundance of lakes and acreage of wet tundra makes nest access by terrestrial predators difficult, and the distance from the Brooks Range means few of its predators (like red fox) venture far out to this wetland region. Finally, the season of nesting and molting is relatively brief, and so resident predators must adjust their densities to winter prey densities to get through the annual cycle. In many ways, the importance of this region to nesting and molting birds has as much to do with its remoteness from predators as it does its food productivity for the international aggregations of breeding and molting birds.

The particular geomorphology of the region northeast of Teshekpuk Lake, where the unique and internationally important molting of arctic geese occurs, is characterized by several large oblong oriented lakes (apparently caused by centuries of consistent cross winds preferentially eroding the ends of the lakes) closely appressed to each other in high density (see close-up image, from NASA, below). One important effect of this tight orientation of lakes is the striking narrow terrestrial shoreline layout making terrestrial movement very difficult and circuitous,

and east-west travel tortuous. The strong impression is that this region has proved important for international aggregations of geese for undertaking flightless molt in large part because of the peculiar geography and the difficulty to terrestrial predators of accessing geese during the molt vulnerable time in their life-cycle.



Molting Geese: The region northeast of Teshekpuk has been long known as unique for international aggregations of geese that arrive to undertake their flightless molt after breeding in Siberia, Alaska, and Canada arctic environs. Significant populations of the Pacific Flyway black brant in particular, and white-fronted geese, along with important numbers of cackling geese (previously considered Canada geese) and snow geese arrive and commence their flight molt beginning in July (King and Hodges 1979; Derksen et al. 1979; King and Derksen 1969; Bollinger and Derksen 1996).

The geese feed in narrow moss/peat habitats along shorelines of thaw lakes, adjacent to open water. The best foraging habitat is very limited in this region, about 0.2% (ca. 8 km² in an area of > 4,000 km²) (Ward et al. 2005).

The region currently has few predators and no disturbances that add to the stress to molting geese (Derksen et al., 1979). The core areas of use by black brant have shifted eastward in recent years, and the proportion of white-fronted geese has increased relative to brants. These changes are thought to be due to recent changes in climate (USGS 2005).

It is well documented that molting geese are sensitive to anthropogenic disturbances (Derksen et al., 1979; Jensen 1990; Miller et al. 1994; Taylor 1993; Taylor 1995). The loss of feeding time and the energy expenditure used by moving away from disturbance may compromise the very survival of molting geese (Taylor 1993).

[21.135] The DSEIS mentions, as simple statements, the susceptibility of molting geese to stress, and the general effect of increased predators associated with development, but wholly misrepresents the very serious potential of development in the goose molt area to this internationally unique aggregation. The scenario developed by Loya and Schoen of a potential development scheme makes clear the potential for devastating and irreversible disruption of these goose populations. An explicit consideration of this unique geography makes this possibility transparent.

[21.136] Two features that place development over the geography of the goose molt area are critical. First, with little actual terra firma to feed and move upon, the direct (loss of land to roads, pipelines, other structures) and indirect (displacement due to disturbance and the physical effect of structures) effects on molting geese will be dramatic and should be modeled. Analogous to the disturbance buffer for caribou, molting geese are displaced within 500 m of roads, and loud noises (like compressor noise) can displace them up to 800 m (Madsen 1985,

Wisely 1974). For aircraft, increased lateral distances are more important than altitudinal for predicting disturbance response of geese (Ward et al., 1999). (Note: these data come from other geographies; no information exists on disturbance displacement patterns from the Teshekpuk region). Finally, these studies don't fully consider the social aspects of large aggregations of molting geese such as present northeast of Teshekpuk. Geese are highly social, and thus highly responsive to disturbance by adjacent groups of geese. The synergistic effects to disturbance to molting populations of geese are likely greater than that measured for individual geese.

Second, [21.137] the attraction of development to predators in the particular geography of the goose molting area near Teshekpuk will likely have large consequences. Arctic fox, in particular, are attracted by development and increase in numbers. Fox use culverts and road embankments as den sites. Given the limited land and further limited foraging habitat of the molting area, small number of fox can have a disproportionate effect on predation patterns of geese.

In summary, the uniquely important aggregations of molting geese northeast of Teshekpuk Lake are likely associated with the unique geomorphology of the region. High densities of oriented lakes create a highly fragmented and linear terrestrial geography. Molting geese have taken advantage of the naturally remote and relatively inaccessible environment for predators. Proposed development may fundamentally disrupt the ecology of molting geese and irreparably harm this internationally important wildlife phenomenon. The proposed development can only be built upon the terrestrial habitat and so would displace geese from critical feeding areas. Disturbance, from roads, machinery, flights, and other sources, would act to displace and further stress flightless geese. Development would increase predators, and critically arctic fox. The unique geography that historically aggregated geese for flightless molt will no longer be remote, will no longer be free of anthropogenic disturbance, and will have increased predation pressure. The narrow corridors of critical terrestrial habitat in this region will displace, disrupt, and likely devastate populations of these geese. The deployment of development would lead to irreversible disruption of this unique spectacle.

Avian Diversity, Abundance, and Productivity: Proposed development around the Teshekpuk Lake region threatens to displace, disrupt, and reduce the demographic features that make this region important to breeding bird populations. [21.138] Studies by the Wildlife Conservation Society (Liebezeit and Zack 2006, 2007) are revealing that southeast of Teshekpuk Lake are bird populations of comparatively high diversity, high density, and higher nest productivity than other areas we and our colleagues have studies on the North Slope. Thus, in some manner, the area around Teshekpuk could be considered a "source" area of avian productivity, and thus a region worthy of protection in a changing arctic. The demographic parameters are not unique, but rather are distinctive.

With development will come more avian nest predators (arctic fox, common raven, glaucous gulls), displacement directly (from habitat conversion to structures and roads associated with development) and indirectly (displacement from roads due to dust and disturbance (Troy 2000)).

G. Other Sensitive Areas Mostly Outside of the Existing Teshekpuk Lake Surface Protection Area

[21.139, 140, 141, 142, 143] The following areas deserve special attention in any revised Northeast NPR-A IAP/EIS:

[21.139 cont'd] The entire Ikpiupuk River corridor from the Ikpiupuk River delta at Smith Bay south to the southwest corner of the Northeast Planning Area is of high importance, as are the

wetlands along the Miguakiak River between the Ikpikpuk River and Teshekpuk Lake. In its lower (northern) reaches, the river and adjacent lands have high values for water-related birds, including yellow-billed loons (Map 3-10) and tundra swans (Map 3-12). In its upper reaches (more southern), the adjacent lands are valuable for nesting raptors (Map 3-19).

[21.140 cont'd] Wetlands immediately west of the southwest "corner" of Teshekpuk Lake have medium to high values for nesting waterfowl, including yellow-billed loon and greater white-fronted goose (e.g., Map 3-13). Southeast of the lake, there is an area of very high value for king eiders (Map 3-17). The general area southeast of Teshekpuk Lake and south of the Kogru River is valuable for loons (e.g., maps 3-9 and 3-10), a variety of waterfowl (e.g., maps 3-15 and 3-16), and shorebirds (Map 3-18 depicts "large" species). Lakes of importance for molting geese are in this area as well (Map 3-14). Most of these same areas are of importance as calving and insect-relief areas for caribou too (maps 3-23 and 3-24). Some-but not all-the sensitive areas described in this paragraph lie within the current Teshekpuk Lake Surface Protection Area.

[21.141 cont'd] The entire greater Teshekpuk Lake area qualifies as an Important Bird Area of global significance under criteria established by BirdLife International and the National Audubon Society.

[21.142 cont'd] Pik Dunes is a sensitive area of ecological and geological interest. It also is one of the few areas in the Northeast Planning Area, other than along the Colville River, which has significant recreation potential. South of Pik Dunes there is an extensive area between the Ikpikpuk and Colville Rivers (roughly between townships 6-8 N) with high densities of yellow-billed loons (Map 3-10).

Finally, **[21.143 cont'd]** the Colville River and adjacent lands from Umiat north to within a few miles of Nuiqsut, plus the Kikiakrorak and Kogosukruk rivers, is of exceptional importance for raptors. This stretch of the Colville River and the tributaries named above, qualify as an Important Bird Area of at least continental significance under criteria established by BirdLife International and the National Audubon Society.

IX. FAILURE TO PROVIDE ADEQUATE STIPULATIONS

[21.144] The stipulations and ROPs provided in the DSEIS for mitigating impacts from oil and gas exploration and development are harmfully insufficient to protect surface resources in the Northeast Planning Area. The decision to remove and/or weaken those protections violates BLM's duty under the NPRPA and FLPMA to protect the surface resources in the NPRA.

[21.145] BLM presents a biased and incomplete description of the existing protective features of the "no action" Alternative A, especially with respect to the Teshekpuk Lake and Colville River Special Areas and this hinders its analysis. BLM understates the amount of infrastructure and activities that could be allowed by BLM despite "Restricted Surface Occupancy" buffers or other stipulations or ROPs in the other DSEIS alternatives. Furthermore, **[21.146]** BLM fails to completely analyze using a scientifically-derived method the impacts caused by the industrial activities resulting from both from direct actions in the Northeast NPRA and cumulatively in the Northwest NPRA and adjacent offshore exploration development in the Beaufort and Chukchi Seas. Therefore, BLM has presented an arbitrary and still incomplete cumulative impact assessment.

[21.147] BLM fails to present the complete terms for the Teshekpuk Lake Surface Protection Area (TLSPA) or explain the guiding rationale contained in the Interior Secretary' Babbitt's decision (1998 ROD, incorporated by reference herein) which is an integral part of the current

situation or "no action." The SEIS Description of Alternatives, pp. 2-7 to 2-13 does not describe key aspects of the 1998 decision. This has omission contributes to an inaccurate and incomplete cumulative impact analysis.

[21.148] Secretary Babbitt's decision described why keeping critical lands unavailable for leasing within the Teshekpuk Lake Special Area (TLSA) was necessary to achieve required legal mandates (1998 ROD), yet nowhere does BLM present a clear picture of the conservation benefits of those existing measures. The Teshekpuk Lake Surface Protection Area (TLSPA) contained important features including lands not available for leasing as well as the 5-6 mile buffer where exploratory wells and permanent facilities were prohibited "with no exceptions" (and to ensure this the "rights to the subsurface resources under leases in this area will not include the uppermost 500 feet," 1998 ROD, p. 2).

When taken together, many significant changes to stipulations weaken overall provisions regarding surface protection. BLM has already weakened the stipulations in its plan for the Northwest NPRA (Norton, January 2004 ROD), and taken together with very similar changes in the Northeast NPRA proposed in the DSEIS, there will be substantially increased infrastructure in the Teshekpuk Lake and Colville River Special Areas, as well as across the Reserve. Here are the highlights of measures rolled back from the 1998 ROD in Alternatives B, C, and D.

Major changes in stipulations for Alts. B,C,&D, compared to No Action

- * Permanent gravel roads, pads, and airports are not prohibited during exploration.
- * Permanent roads that would connect many oil fields together are not prohibited.
- * Permanent roads connecting outside the planning area (to existing road networks) are not prohibited.
- * Winter water withdrawal from rivers and streams not prohibited.
- * No limitations on water withdrawals for water bodies that do not contain fish.
- * No requirement to maintain the natural drainage patterns.
- * No prohibition on gravel mining in active floodplain of a river, stream or lake, unless no feasible and prudent alternative.
- * Annual spill deployment drills not required.
- * Specific requirement for 6 inches of snow and 12 inches of frost prior to seismic exploration and bulldozer travel in winter dropped; travel is now allowed across the tundra in the summer.
- * Economically feasible extended-reach drilling for production no longer required.
- * No prohibition on petroleum exploration and production activities within 1/2 mile of occupied grizzly bear dens.
- * Specific aircraft take-offs and landings limitations for raptor nesting sites and other wildlife habitats were dropped.
- * Requirement that lessees shall not unreasonably restrict access by subsistence users in oil field development areas was dropped.

* Permanent facilities are not strictly prohibited within 1 mile of subsistence cabins or long-term use sites, and exploratory drilling is no longer prohibited within 1,200 feet of subsistence cabins or campsites.

* The prohibition on construction of gravel causeways and docks in river mouths or deltas is dropped.

* No requirement that all activities shall be conducted to avoid or minimize disturbance to vegetation.

[21.148 cont'd] Alternatives B, C, and D do not contain this particularly effective surface protection measure regarding the lack of rights to the uppermost 500 feet, the combination of core area with higher level of protection and surrounding buffer zone, and that no exceptions to these provisions could be granted, all features of the 1998 ROD plan which make the sum greater than each of its individual parts. Therefore, the combination of measures needs to be analyzed to determine full effects on species and their habitats, and this was still not done in the DSEIS.

Such design of wildlife and landscape conservation plans are termed by conservation biologists and land managers by a number of names including ecosystem management, landscape scale strategies or ecological networks. For example, one definition of ecological network is, "assemblages of areas representing the natural and semi-natural landscape elements to be conserved, managed or, where appropriate, enriched or restored in order to ensure favorable conservation status of the ecosystems, habitats, species and landscapes and traditional range. An ecological compensating areas network is a hierarchical system following levels (1) core areas, (2) buffer zones of core areas (3) corridors and stepping stones, and (4) nature development and/or restoration areas that support resources, habitats and species (see K. Meier, V. K., J. Luig and Ü. Mander, Riparian buffer zones as elements of ecological networks: Case study on Parnassius mnemosyne distribution in Estonia, Ecological Engineering, Vol. 24, Issue 5, 20 May 2005, Pages 531-537).

[21.149] BLM fails to include a description of this combination of measures provided by the 1998 ROD, nor fully assess its effectiveness in avoiding or reducing negative cumulative impacts compared to opening lands to leasing and industrial activities and infrastructure and instituting weaker surface protection measures especially for permanent oil and gas facilities. Standard land management tools and methods for evaluating effectiveness were ignored by BLM in its assessment of the differences between the 1998 ROD plan and the new Alternatives B, C, and D and evaluating future cumulative impacts in light of climate change, e.g. see N. Dudley, L.J. Mulongoy, S. Cohen, S. Stelton, C.V. Barber and S.B. Gidda (2005). Towards Effective Protected Area Systems. An action guide to implement the Convention on Biological Diversity Programme of Work on Protection Areas. Secretariat of the Convention on Biological Diversity, Montreal, Tech. Series no. 18, 108 pp., <http://www.iucn.org/themes/wcpa/pubs/subject/mgmteffectiveness.html>, accessed November 4, 2007).

[21.150] Without a clear basis for the public to fully understand the existing plan's protective measures, BLM does not have an accurate baseline condition for which to analyze the cumulative impacts, consider resilience of molting geese, caribou, and other wildlife habitat use in the face of dramatic climate change, nor to compare the alternatives (B,C,D) which would all end the long-standing management of keeping critical and environmentally sensitive habitat in the TLSPA.

[21.151] In the alternatives comparison for stipulations and ROPs, BLM does identify the Teshekpuk Lake Surface Protection Area (TLSPA) but only the aspects of it contained in Stipulation #31 (see Table 2-2, DSEIS 2007, pp. 2-72,74,75,80,84,87,88). It does not compare the other key parts of the 1998 action such as the combination with lands unavailable for leasing and the withholding of top 500 feet of subsurface from leasing that is the existing situation today in the Table 2-2 analysis. There is no mention of the TLSPA in the analysis of cumulative effects - or in fact anywhere else in the DSEIS except those short mentions in Table 2-2 related to the Stipulation 31 aspect of it.

[21.152] While Table 2-1 ostensibly lists leasing and occupancy restrictions, by failing to include the entire list of restrictions for Alternative A that were contained in the 1998 ROD (pp. 2,3,5) BLM presents an erroneous and distorted picture which implies that Alt. D has more occupancy restrictions than "no action" which is far from the truth. **[21.153]** Furthermore, in its impacts analysis, the sections entitled "effectiveness of stipulations" fail to adequately analyze the conservation benefits of lands that are protected from leasing ("unavailable for leasing") combined with the buffer zones and other measures, and what kinds of activities would be less likely to take place, and therefore reduce sources of potential impact for the lands unavailable for leasing. In the impact analysis, only a few sentences mention the Teshekpuk Lake Surface Protection Area (TLSPA), and most merely mention Stipulation #31 (DSEIS pp. 4-97, 118, 169, 176, 207), and there is only a superficial treatment of caribou impacts due to lands unavailable for leasing in the TLSPA, and comparison with Alternative D provisions. This is a major oversight due to the importance of such protections to maintain "maximum protection" in the TLSPA.

[21.154] Furthermore, the Teshekpuk Lake Surface Protection Area and the removal of this by Alternatives B, C, and D is not discussed at all in the ANILCA Section 810 subsistence analysis (Appendix A). **[21.155]** nor in the Essential Fish Habitat analysis (Appendix C) despite major changes to protection of important fish habitat in Teshekpuk Lake itself from leasing and surface infrastructure. **[21.156]** nor was the TLSPA, TLSPA, or Colville River Special Area addressed by the oil spills analysis (Appendix K). **[21.157]** While Alternative D states that "Teshekpuk Lake would be indefinitely deferred from leasing" (p. 2-10, DSEIS), it fails to explain under what conditions leasing could take place since the lands are not made unavailable for leasing," so this affords far more chance that oil drilling or pipelines could eventually be approved here compared to the TLSPA which made most of the Lake unavailable for leasing and exploratory drilling rigs and other permanent infrastructure prohibited elsewhere (1998 ROD).

[21.158] The unique Pik Dunes habitat was added to the Teshekpuk Lake Special Area by Secretary Babbitt (1998 ROD, p. 2) and formally implemented by BLM to assure protection of significant subsistence, recreational, fish and wildlife, historical and scenic values (64 FR 16747-16748; April 6, 1999). BLM's Alternative A description in Section 2.3.1 (DSEIS, p. 2-8) or the summary on Table 2-1 fails to mention the restriction of activities in this area contained in Babbitt's Decision for the Pik Dunes, "no surface structures, except essential transportation crossing, will be allowed." (1998 ROD, p. 6). Language has changed from excepting "essential transportation crossing" to "excepting "pipeline crossings and ice pads" yet the impact analysis does not assess any difference in impact (DSEIS, p. 2-87).

[21.159] For the Colville River Special Area, Interior Secretary Babbitt's decision required a Colville River Management Plan for the Special Area (1998 ROD, p. 2) to address "subsistence, wildlife, recreation, paleontological, and other issues." (p. 2, 1998 ROD) - yet this requirement is not even mentioned, nor the consequences of dropping it in the DSEIS. **[21.160]** It is also unclear whether Interior Secretary Norton's requirement that "leasing is deferred in the

Colville River Special Area until the combined Southern NPR-A IAP/EIS and Colville River Management Plan" from the Northwest IAP/EIS decision (2004 ROD, p. 5) has been dropped for the Northeast NPR-A by this new plan, even though that decision was for the entire Colville River Special Area including the Northeast NPR-A. The impacts of such a change have not been analyzed. **[21.161]** Another major change in the DSEIS alternative B, C, and D to the Colville River Special Area compared with the 1998 ROD/ Alternative A is that permanent roads connecting outside the planning area (to existing road networks) are not prohibited, so it can be expected that more roads would cross the sensitive river bluffs, banks, and adjacent riparian areas.

[21.162] Interior Secretary Babbitt's decision also described the establishment of the Integrated Activity Plan's (IAP) procedures and advisory bodies to address subsistence and research concerns, in particular the Subsistence Advisory Panel, and the FACA-chartered Research and Monitoring Team (1998 ROD, pp. 6-7) yet Alternative A described in the DSEIS fails to include these aspects of the existing IAP nor to analyze the impact of the changes proposed in the new plan's leasing alternatives. The cumulative impacts of this issue have not been analyzed, yet monitoring would become even more important with the imposition of ROPs instead of the TLSPA package and the stronger stipulations from the 1998 plan.

[21.163] BLM failed to present stipulations #19, 24j, 24k, 24l, and 45 in Alternative A from the 1998 ROD its comparative analysis of the alternatives (Table 2.2) in the DPEIS, or to compare cumulative impacts of dropping these stipulations. While the complete list of stipulations from the 1998 ROD is provided in Appendix D, that section fails to include the rest of the 1998 ROD which provides additional rationale and definition for the Teshekpuk Lake Surface Protection Area, and other key surface protection (we herein incorporate the 1998 ROD by reference and believe it should be included in this plan as an Appendix).

[21.164] The process for granting an exception to permit stipulation or ROP has been substantially weakened in Alternatives B,C, and D (DSEIS 2007), by removing the criteria by which BLM must evaluate the exception request which is currently in place (pp. 29-30, 1998 ROD). In Table 2-2, the DSEIS fails to describe the standards and criteria for BLM to provide exceptions to protective measures (see p. 7, 1998 ROD), or to compare this important aspect of management between the alternatives. While the definitions for Alternative A are provided in Appendix D, their importance is not explained or analyzed in the impacts analysis.

Alternatives B,C, and D in the DSEIS allows an industry application to propose a "deviation" or "alternative procedures" to the stipulations or ROPs or for BLM to give a different requirement or standard (see p. E-4,5 and F-5, DSEIS). This huge loophole is even wider than the existing one because it does not provide any criteria regarding technical and economic feasibility and level of environmental protection as did the exceptions policy in the 1998 ROD (p.7). It also has the cumulative impact of requiring more BLM agency time at the pre-application and application acceptance phase wherein they are supposed to ensure that the project proposed by industry will meet the

[21.165] The DSEIS also deleted language from existing stipulations that "additional site-specific stipulations may be added by the Authorized Officer (AO) as determined necessary by further NEPA analysis and as developed through consultation with other Federal, State, and NSB regulatory resource agencies," (p.29, 1998 ROD). This broad provision is necessary to meet conditions that may not have been foreseen at the time of this document, including impact areas for which there are not currently stipulations. In the DSEIS, the BLM could only impose other restrictions "to meet the objective of a stipulation or ROP (Appendix F, p. F-5, DSEIS 2007).

[21.166] Furthermore, Interior Secretary Babbitt's 1998 decision noted that in a few key areas a number of stipulations "are not subject to the exception clause. These include: decisions on the areas to be available or unavailable for oil and gas leasing; prohibition of permanent roads connecting to a road system outside the planning area; prohibitions on pipeline and road crossings in the setback area around Teshekpuk Lake and road crossings in the setback area adjacent to the Colville River, and prohibitions on permanent oil and gas surface occupancy in the Teshekpuk Lake Surface Protection Area." (p. 7, 1998 ROD) Yet these significant aspects of the current management are ignored in the cumulative impact analysis.

[21.167] BLM also fails to adequately consider the cumulative effects that may result due to major differences in permanent infrastructure that could be built under Alternatives B, C, and D, compared with that allowed by the 1998 ROD. Table 2-1 is misleading because the definitions for "no surface activity restriction" for Alternative A actually had many more key provisions that were not listed, and more types of permanent infrastructure is allowed in the "Restricted Surface Occupancy" definitions for Alternatives B, C, and D in the DSEIS.

BLM adds some definitions that imply more protection than they would likely entail. For example, the "Field" definition opens the door to some infrastructure that was prohibited or limited by the 1998 ROD. For example, permanent roads could be built connecting more than one oil field reservoir, connecting roads between more undefined and even distant fields or "units", e.g., "field infrastructure may be used in the development and production of several oil/gas accumulations in different subsurface reservoirs" (DSEIS Appendix F, p. F-3). The revisions also condone connecting to roads or causeways outside the planning area ("fields may or may not be connected by permanent roads to adjacent fields or transportation facilities outside the field area see" (DSEIS Appendix F, p F-4). Such roads connecting outside the planning area were strictly prohibited with no exceptions in the 1998 ROD (p. 7). The definition of "in-field roads" is so vague as to be meaningless as it could apply to any gravel roads for development and production activities (DSEIS, Appendix F, p. F-4), a sharp contrast to the many permanent road restrictions in the 1998 ROD and the stricter process for BLM to make exceptions to the stipulations.

In the definitions for stipulations, BLM lists "Site Specific Lease Stipulation (K-Stipulations) a mitigation measure developed throughout the BLM planning process/NEPA process attached only to leases issued within spatially defined areas in the NE Planning area (See Map 1)" (Alt D, DSEIS p. Appendix F, p. F-5). We note that there is no "Map 1" so it is unclear exactly what this refers to and it means that we cannot accurately evaluate the effectiveness of these stipulations.

[21.168] The definition, "Temporary Platform" could potentially be a big loophole due to its vague and confusing language "a facility that does not require the use of an ice or gravel pad to support oil and gas and related exploration activities" (Appendix F, p. F-5, DSEIS); it is not clear whether it covers a facility for any oil and gas activity, or just exploration activities? Therefore, if the intention is that this just covers exploratory activity - similar to ice roads and pads - the definition needs to be rewritten so that it could not be included in the "permanent facility" definition. Otherwise, industry could evade the prohibitions on permanent facilities and allow elevated type - pilings supported -- production facilities in "restricted surface occupancy" buffer zones, and in places such as the Teshekpuk lake shoreline (Stipulation K-3) or the Goose Molting Area (Stipulation K-4) which prohibits no "permanent" oil and gas facilities. That kind of facility would still entail noise disturbance, access by aircraft and other vehicles for support, potential toxic spills, etc.

[21.169] ROP B-2: What is the scientific basis for insuring that ROP B-2a-h under Water Use for Permitted Activities will be effective in maintaining natural hydrologic regimes and fish, invertebrate and waterfowl habit? The DSEIS states that the draw down levels presented in points (a: 15%) and (b: 30%) are arbitrary (DSEIS at 4-726), so how can the BLM state that this ROP would be equally effective at protecting fish and fish habitat as prohibiting water withdrawal as mandated under Alternative A? Which scientific studies show that fish recover from 15-30% water withdrawal? The DSEIS states that no studies have been done on invertebrates or vertebrate feeders, so how can the BLM permit 100% water withdrawal under C-2c and conclude that feeding habitat of birds would be protected? **Further, [21.170]** what is the mechanism for enforcing B-2g? Past evidence of failure to use screens has resulted in fish being frozen into ice roads. **[21.171]** In addition to the lack of scientific basis for these concerns to water resources, what is the impact of the millions of gallons of water on tundra habitat and hydrology when it melts in the spring? Does this transfer of lake water to tundra and among disparate tundra lakes affect the natural biological diversity of aquatic and soil organisms at the base of the Arctic food web?

[21.172] ROP C-2: In order to insure that winter tundra travel does not damage vegetation, soils and thus habitat, we believe that an addition needs to be made to the requirements of Winter Overland Moves and Seismic Work ROP C-2(a) that states that "The exact dates (for the start and end of the winter season) will be determined by the AO after analysis of site specific data for NE NPRA lease tracts. Such data will be derived from applying the best scientific methods for assessing tundra hardness and resiliency to ice and snow roads and relevant traffic levels.

[21.173] Stipulation G-1: With regard to Lease Stipulation G-1 for Alternatives B, C and D and Stipulation 58 for Alternative A, how will mandated removal and rehabilitation be enforced? What is the standard which rehabilitation must achieve? How will the BLM insure that funds are set aside to enforce this mandate? The history of industrial abandonment of contaminated and degraded sites is a long one (<http://www.epa.gov/history/index.htm>), and the DSEIS should implement exact and strict guidelines for insuring that this stipulation is met wherever development occurs. **[21.174]** If gravel roads are built that connect communities, then the cumulative impacts of this long-term fragmentation should be included in a qualitative CEA.

X. FAILURE TO MONITOR AND TO PROVIDE LONG TERM MONITORING PLAN

Scientists, resource managers, conservationists, and Native residents of the North Slope have long recognized the very high biological values (e.g., waterbirds, caribou, raptors) of the Northeast NPRA, which includes the Colville River and Teshekpuk Lake. Because of their extraordinary values, both the Colville River and Teshekpuk Lake areas were designated as special areas by the Secretary of Interior in 1977. During development of the original Northeast Plan, both the Department of Energy and U.S. Fish and Wildlife Service (FWS) recommended to BLM that it establish a multi-stakeholder group to advise the Secretary of Interior regarding inventory, monitoring and research. The BLM responded to this recommendation in the FEIS and ROD by establishing procedures for a Research and Monitoring Team (FEIS, p. II-19, 20): Under the Preferred Alternative,

...representatives of Federal, State, and NSB agencies with biological expertise would participate on an Interagency Research and Monitoring Team. This team would coordinate research and monitoring projects related to effectiveness of stipulations and surface resource impacts.

The 1998 Northeast Plan ROD explicitly directed creation of the RMT (ROD, p. 6):

The plan establishes procedures and advisory bodies to address subsistence and research (inventory and monitoring) concerns with oil and gas exploration and development activities... Under the plan, representatives from federal, state, and North Slope Borough agencies, oil industry, environmental groups, academia, and other interested parties will be invited to participate on a Research and Monitoring Team. This team will coordinate research and monitoring projects related to effectiveness of stipulations and surface resource impacts...The team will be chartered in accordance with the Federal Advisory Committee Act.

The scope and objectives of the RMT, as stated in the charter (9-6-02) include:

The team will advise the Bureau of Land Management in assessing the effectiveness and appropriateness of mitigative stipulations established in the Northeast NPR-A Integrated Activity Plan/Environmental Impact Statement, Record of Decision, 1998. The team will focus its attention on assessing NPR-A research and monitoring needs, developing and recommending research priorities, and applying improved technology and operating practices.

The 1998 ROD states (p. 15):

In order to better manage the planning area, there is a need for additional information on animal populations and their habitats, the impacts of human activities to those populations and their habitats, and the effectiveness of various mitigating measures. The plan endorses additional research and monitoring and calls for the creation of a Research and Monitoring Team to coordinate this work.

The 98 ROD further states (p. 21):

Monitoring will be undertaken to determine the status of the various resources in the planning area, to ensure compliance with and enforcement of plan decisions and with stipulations attached to separate land use authorizations, and to measure the effectiveness of protective measures.

The 98 FEIS addresses inventory and monitoring for the Northeast Plan (FEIS, Vol. 2, App. A-1):

During the life of this plan, inventory and monitoring would be used as a management tool to determine the status of the various resources within the area, to ensure compliance with plan decisions, to measure the effectiveness of the decisions, to ensure compliance with stipulations that are attached to land use authorizations, and to evaluate the effectiveness of the stipulations at accomplishing the purposes for which they are required.

Monitoring, with direction from the RMT, was an integral part of the Northeast NPR-A Integrated Activity Plan/EIS and was a cornerstone of the ROD (see language above). The promises and commitments made in the FEIS and ROD depend in large part on there being a functional monitoring plan. For example, in the ROD (Appendix B Stipulations, p. 35) it states:

At least 3 years prior to approval of any development plan for leases within the Special Caribou Stipulations Area, the lessee shall design and implement a study of caribou movement, including historical information regarding the distribution and range use of the Teshekpuk Lake Caribou Herd, as well as maps of caribou trails within the area...The study design shall be approved by the AO in consultation with the Research and Monitoring Team.

To our knowledge, this study has not been completed nor has there been any significant level of coordination on it with the RMT.

The Northeast Plan FEIS and ROD describe and commit to a significant monitoring program to ensure compliance with plan decisions, measure the effectiveness of the decisions, ensure compliance with stipulations that are attached to land use authorizations, and evaluate the effectiveness of the stipulations. Unfortunately, in 2003, the charter of the original RMT was not renewed. During the short tenure of the RMT, it spent virtually no time addressing the important monitoring program that was fundamental to implementing the plan. In 2004, BLM temporarily reinstated the RMT with the explicit intent to help BLM craft an effective monitoring plan for the NPRA. Although the re-instated RMT made clear recommendations to BLM on what should be addressed in a monitoring plan, to our knowledge an operational monitoring program has not been initiated within the Northeast Plan area or more broadly throughout NPRA. **[21.175]** The Northeast Plan faces a serious problem in that it has been operational now for nearly ten years but there has yet to be a monitoring program implemented in the Plan Area. This was part of the commitment in the 1998 FEIS and ROD, and that commitment has not been fulfilled nor is there a clear monitoring plan articulated in the current DSEIS.

Without an effective monitoring program, how can BLM ensure compliance with plan decisions, measure the effectiveness of the decisions, ensure compliance with stipulations that are attached to land use authorizations, and evaluate the effectiveness of the stipulations? BLM is nearly a decade into the original Northeast Plan and proposing a new plan and yet there is no scientific baseline from which to monitor and measure the effectiveness of the plan and the stipulations. Considering the monitoring commitments that were made in the 1998 ROD, this situation should be of great concern to BLM, other resource managers, conservationists, Native subsistence users, and the oil and gas industry. This was a fatal flaw in implementation of the original Northeast Plan and it has not been resolved in the DSEIS.

Although several agencies (e.g., ADF&G Arctic caribou photo census, FWS aerial breeding pair surveys of the Arctic coastal plain) routinely conduct monitoring activities on the North Slope, these surveys do not substitute for site-specific monitoring targeting the Northeast Planning Area. Some surveys also may not be done with enough statistical power to detect change associated with development impacts. Furthermore, broad-scale monitoring is not designed to address compliance-related issues associated with enforcement of plan decisions and stipulations.

[21.176] A significant concern regarding research and monitoring in NPR-A is that there are no scientific control areas that can serve as benchmarks for measuring change and separating the effects of development impacts from climate change and other factors. This issue must be addressed by BLM for all activity with the both the Northeast and Northwest NPR-A. The identification and application of scientific control areas was explicitly recognized by the National Research Council review of "Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope" and must be addressed in this plan and DSEIS.

XI. FAILURE TO COMPLY WITH SECTION 810 OF ANILCA

To fulfill the purposes and policies of the Alaska Native Claims Settlement Act (ANCSA), 43 U.S.C. §1601 et seq., and as a matter of equity, Congress specifically invoked its constitutional authority over Native affairs and assumed the obligation to protect and provide for the opportunity for continued subsistence uses on the public lands for Alaska Natives. 16 U.S.C. § 3111(4). This unique "trust" obligation of the federal government stems from the agreements made by the United States and Alaska Natives, who, for their part, surrendered claims to vast tracts of land and unlimited aboriginal hunting and fishing rights in exchange for relatively small land selections and federal protection of their customary and traditional ways of life. In

the context of ANILCA, the trust responsibility imposes fiduciary management duties upon federal agencies and demands a heightened standard of care to protect subsistence uses of Alaska Natives.

Consistent with this trust responsibility, the agencies within the Department of Interior that manage public lands in Alaska, such as the BLM, must refuse to take land management actions if they find that the actions would cause significant restrictions to subsistence uses and those actions cannot be mitigated. Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA), 16 U.S.C. § 3120, therefore requires the Secretary of Interior to take certain steps to eliminate or minimize adverse impacts to "subsistence" uses on the federal public lands under the Secretary's jurisdiction in Alaska. Section 810(a) requires that a subsistence evaluation be completed for any federal agency determination to "withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public land." 16 U.S.C. § 3120.

"Subsistence," as that term is used in the statute, refers to customary and traditional hunting, fishing and gathering of wild renewable resources for food, clothing, shelter, and other basic purposes. 16 U.S.C. § 3113. Congress recognized that subsistence is essential to the economy and culture of Alaska Native people, and to non-Native economic and social needs. 16 U.S.C. § 3111(1). Congress further declared that agency actions on federal public lands in Alaska are "to cause the least adverse impact possible on rural residents who depend upon subsistence uses of the resources of such lands." 16 U.S.C. § 3112(1).

Section 810 of ANILCA sets forth a two-tier procedure. The first tier requires a NEPA-like process of evaluating the impacts of an action to subsistence uses, and alternatives that would reduce or eliminate the impacts. 16 U.S.C. § 3120(a). At the end of this process, unlike NEPA, the agency must determine whether the action "would significantly restrict subsistence uses." The second tier is triggered if, pursuant to the first tier analysis, the agency concludes that "the contemplated action may significantly restrict subsistence uses." *Kunaknana v. Clark*, 742 F.2d 1145, 1151 (9th Cir. 1984). A significant restriction to subsistence may occur in at least two instances: (1) when an action substantially may reduce populations or their availability to subsistence users, and (2) when an action may substantially limit access by subsistence users to resources.

In the second tier, when there is the possibility of a significant restriction, the agency must first give notice to the State and various agencies and hold hearings in the vicinity of the proposed action. 16 U.S.C. § 3120(a)(1) & (2). Then, before proceeding with the action, the agency must make determinations that:

- (A) such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands,
- (B) the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and
- (C) reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions. 16 U.S.C. § 3120(a)(3).

Properly interpreted, the subsection (A) "necessary" determination should allow significant restrictions to subsistence only where something more specific than agency policy goals compels them. The "necessary" requirement demands something more specific than a discretionary agency goal. Similarly, the "minimal amount of public lands" determination should require the Department of the Interior to select the alternative that uses the least public land that would

accomplish the general purposes of the action, taking into account the relative importance of different lands for subsistence uses.

In its preliminary section 810 analysis BLM found that:

The cumulative case as presented in this analysis, when taken in conjunction with all action alternatives, would result in a reasonably foreseeable and significant restriction of subsistence use for the communities of Anaktuvuk Pass, Atqasuk, Barrow, and Nuiqsut, due to a decrease in resource abundance, significant alteration in the distribution of resources, and a significant restriction on the access of subsistence users. This finding requires a positive determination pursuant to the ANILCA § 810. The distribution of caribou populations on the North Slope has been affected by Prudhoe Bay development, and access to subsistence resources has been compromised there. Although procedures will be in place to ensure that future development affects access as little as possible, it is still probable the total area available for subsistence purposes will be reduced. If a major marine oil spill were to occur in the future, it could significantly affect both populations and distributions of fish, and whales and other marine animals, causing significant restrictions to subsistence resources. Oil and gas infrastructure located in core caribou calving or insect-relief areas would result in the displacement, and possible reduction, of the herd. Population growth would result in a greater number of residents relying on local resources to meet their needs. These restrictions have the potential to affect Anaktuvuk Pass, Barrow, Atqasuk, and Nuiqsut. DSEIS Appendix A at 19-20

Therefore, at least for the communities mentioned above, the first step of section 810 is met - BLM has found that all action alternatives, when combined with likely cumulative effects, meets the "may significantly restrict threshold" for each subsistence use. Therefore, BLM appropriately published a notice of this finding in the federal register (72 Fed. Reg 48661-62), and held hearings in these communities (9/24 Barrow; 9/25 Atqasuk; 10/9 Anaktuvuk Pass; 10/11 Nuiqsut).

Communities of Anaktuvuk Pass, Barrow, Atqasuk, and Nuiqsut.

BLM also states that

The determination that the requirements of the ANILCA § 810(a)(3)(A), (B), and (C) have been met will be analyzed in the Final ANILCA § 810 Evaluation, using input from the communities in which subsistence hearings will be held. DSEIS Appendix A at 19-20.

We provide input on these issues here.

With respect to Section 810(a)(3)(A) as it applies to these four communities, sound management principles for the Northeast Planning Area include strict protection of subsistence resources given the importance of these resources to those who rely on them and the duties owed by BLM to indigenous peoples. This does not have to be an "all or nothing" situation - BLM should match its legitimate, and discretionary, policy goals with those areas of the NPRA where oil and gas activities would not so limit subsistence activities. To the extent BLM goes beyond those areas, it must provide a rational explanation, supported by a compelling non-discretionary management goal, for restricting subsistence. To do otherwise would write the word "necessary" out of the law.

Regarding the policy underlying leasing in the NPRA, BLM states that it is "undertaking this Supplemental IAP/EIS to fulfill the mandates of the President's energy policy...." DSEIS Appendix A at 7. The President's energy policy "directs the Secretary of the Interior to 'consider additional environmentally responsible oil and gas development, based on sound science and

the best available technology, through further lease sales in the National Petroleum Reserve - Alaska.' DSEIS Appendix A at 10.

The discretionary nature of this policy is apparent from the statement that the Secretary is to "consider" additional leasing. The inclusion in the policy of the term "consider" means that the president did not intend to create a non-discretionary duty on behalf of the Secretary to allow more development. It is also apparent from BLM's statement that the "Secretary of the Interior has directed BLM to consider additional lands in the Northeast NPR-A to the extent it can be done in an environmentally sound manner." DSEIS Appendix A at 7. Subsistence impact considerations factor in to whether oil and gas leasing "can be done in an environmentally sound manner." Consequently this policy cannot be used to override the standard in Section 810(a)(3)(A)..

In fact, Congress has established as an overriding policy that the Secretary of the Interior give "maximum protection" to "any significant subsistence ... fish and wildlife ... values" in the NPRA. NPRPA, 42 U.S.C. § 6504(b). The House Report accompanying passage of this law says that the statute requires that the "Secretary of the Interior should take steps to minimize any adverse effects on native subsistence requirements and associated fish and wildlife values", and suggests scheduling of exploration activities as one way to reduce such impacts. U.S. House of Representatives, Interior and Insular Affairs Committee, House Report No. 94-81, Part I, p. 21 (March 18 and April 22, 1975), to accompany H.R. 49. The NPRPA, therefore, provides an independent basis for requiring the Secretary to choose an alternative, and mitigation measures, that satisfy any legitimate NPRPA oil and gas leasing objectives but which offers the maximum protection possible to subsistence resources.

The Teshekpuk Lake region is simply too important for subsistence purposes to risk leasing for oil and gas, and BLM has clearly stated no policy goal that overrides this.

With respect to Section 810(a)(3)(B), BLM should select the alternative that uses the least public land that would accomplish the general purposes of the action, taking into account the relative importance of different lands for subsistence uses. BLM has already identified Alternative A as a reasonable alternative, which by definition would thus meet the general purposes of BLM's leasing desire, and therefore this alternative, or one that is less oil and gas intensive, can thus be supported by Section 810. This is not true of the more oil and gas intensive alternatives.

Finally, [21.177] with respect to Section 810(a)(3)(C), BLM asserts that it has taken steps to minimize adverse impacts on subsistence uses and resources. But, as the recent analysis on caribou calving habitat demonstrates with respect to Alternative D, the integrity of caribou habitat around Teshekpuk Lake is heavily impacted even with strict application of BLM's protective measures. Before it can make a clear finding on this Section 810 issue, BLM should conduct similar analyses on the other alternatives to ensure that it does not think the steps it is taking under those alternatives are likewise reasonably protective of NE NPRA subsistence resources.

Impact of Specific Alternatives

[21.178] Taking a broader perspective of BLM's Section 810 analysis, BLM should have found that the alternatives, separate and apart from the cumulative case and in and of themselves, likely would significantly restrict subsistence uses. BLM simply has too little certain information on likely impacts to conclude otherwise.

Other North Slope and Alaska Communities

[21.179] Moreover, BLM was too limiting in its geographic scope related to its significant restriction finding. Residents of Wainwright, for example, use the subsistence resources of the Northeast NPRA, and no logical case is made by BLM as to why they are not included in this finding.

Furthermore, **[21.180]** BLM should have analyzed the likely impacts of each alternative on subsistence users in other parts of the North Slope and in other areas of Alaska. As BLM notes, "black brant populations have shown a declining trend in recent years." App. A at A-11. See also App. A at A-9 (impacts to brant in the planning area that would result in population level declines have the potential to affect harvesters across the North Slope, in Northwest Alaska, and in the Yukon-Kuskokwim Delta).

Finally, **[21.181]** it is not enough for BLM to dismiss the likely subsistence use impacts by discounting the importance of brant to the overall harvest of subsistence resources to subsistence hunters. See App. A at A-18 ("Given the fact that brant are the primary species of concern for the Y-K Delta and comprise only one portion of their migratory bird harvest (at most 3% of total bird harvest, according to ADF&G), potential impacts as a result of this plan do not constitute a significant restriction of subsistence use for residents in that area of the state.") This BLM conclusion ignores the fact that subsistence is about more than diet; it encompasses cultural and sociological considerations of a qualitative nature that also must be analyzed. See e.g. 16 U.S.C. § 3111(1) (congressional recognition of full scope of attributes that define subsistence).

For all of these reasons, **[21.182]** BLM's Section 810 preliminary finding is too narrow in scope, and should be expanded. BLM should provide notice of a likelihood of significant restrictions to subsistence users in other parts of the North Slope and in other areas of Alaska, and hold hearings in those communities.

XII. CONCLUSION

The National Petroleum Reserve-Alaska is the largest single unit of public land in the Nation, and it harbors rich and important wildlife and wildlands. Healthy, productive ecosystems are fundamental for ensuring a sustainable economy for Alaska and maintaining the quality of our life style shared and valued by all Alaskans. We believe that a balanced approach for development in the Reserve requires permanent protection of its special places and values and that development must adhere to strict environmental standards, including those related to operations, cleanup and restoration.

The DSEIS fails to provide any scientific analysis or justification for modifying the Teshekpuk Lake Surface Protection Area (TSPSA) within the Teshekpuk Lake Special Area (TSLA). To fulfill the agency's trust responsibility's, BLM must choose the No Action Alternative as the preferred action or complete a new supplemental IAP/EIS that adequately addresses the many significant failures in this document including the totally inadequate cumulative effects analysis

Thank you for your attention to our concerns and recommendations. We encourage you to contact us at anytime.

Respectfully Submitted,

Eleanor Huffines, Alaska Regional Director

Northeast NPR-A Supplemental IAP/EIS

Wendy Loya, Ecologist
The Wilderness Society

Randy Virgin
Executive Director
Alaska Center for the Environment

Cindy Shogun
Executive Director
Alaska Wilderness League

Stan Senner
Executive Director
Audubon Alaska

Mike Daulton
Director of Conservation Policy
National Audubon Society

Charles Clusen
Director, Alaska Projects
Natural Resources Defense Council

David van den Berg
Executive Director
Northern Alaska Environmental Center

Trish Rolfe
Alaska Representative
Sierra Club

Steve Zack, Conservation Scientist and Pacific West Coordinator
Joe Liebezeit, Associate Conservation Scientist
Wildlife Conservation Society

Margaret Williams
Managing Director, Kamchatka/Bering Sea Ecoregion Program
World Wildlife Fund

CC: Earthjustice
Trustees for Alaska

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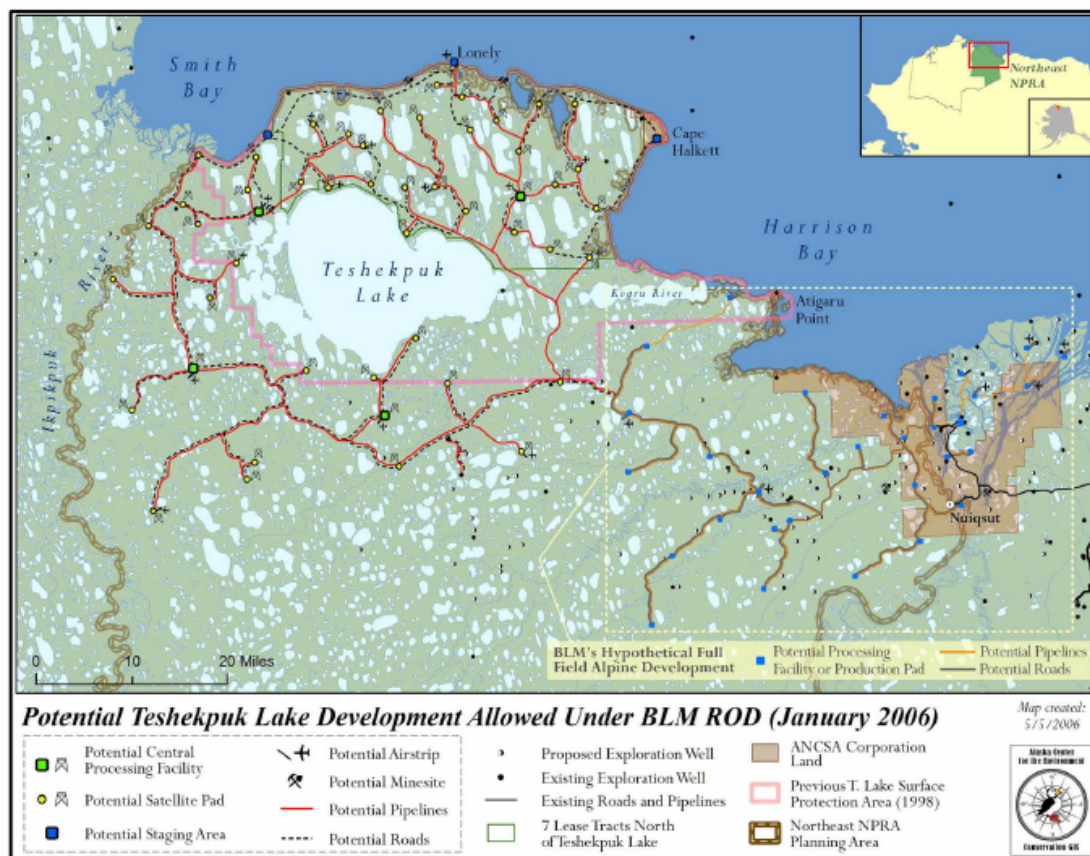
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Assumptions for the Map:
Potential Teshekpuk Lake Development
Allowed under BLM ROD (January 2006)

Acres Assumptions for facilities:

Airstrip	-	11 acres
Central Processing Facility	-	100 acres
Gravel Mine	-	35 acres
Roads	-	7.5 acres per mile
Satellite Pad	-	10 acres
Staging Area	-	50 acres

Central Processing Facilities include 2 drilling pads, a 3-mile road, and an airstrip. These sizes are based on basic assumptions for the Environmental Consequences Assessment (Table 4-3, Page 4-29; BLM 2005).

Restrictions for 7 lease tracts North of T. Lake from BLM 2006 ROD*

Maximum permanent facilities permitted per tract	300 acres ⁱ
Total maximum permitted (7 tracts)	2,100 acres

*pipelines not subject to acreage restrictions (BLM 2006 ROD)ⁱⁱ

Placement of infrastructure within the 7 lease tracts North of Teshekpuk Lake was guided by the terms of the BLM 2006 ROD. These 7 tracts are comprised of a mixture of two classifications as portrayed on Map 1A and Map 1 (Stipulation K-11, GMA Lease Tracts A-G; p. 75-76):

- 1) "No Surface Occupancy, Goose molting Lakes" where permanent facilitiesⁱⁱⁱ, except pipelines, are prohibited;
- 2) Goose Molting Areas in spaces between where any permanent oil and gas facilities may be constructed, including permanent facilities for exploration such as gravel airstrips, pads, and connecting roads, where the 300-acre limitation per tract applies.^{iv}

Other No Surface Occupancy Areas partially overlapping a few of the 7 tracts and extending to the south and west of them in the area we mapped also impose restrictions on permanent facilities, except pipelines: Caribou Travel Corridor (Stipulation K-9, p. 75) and Southern Caribou Calving area (Stipulation K-10); (see Map 1A).

Teshekpuk Lake Shoreline also has a no surface occupancy for permanent facilities including pipelines, for a zone of ¼ mile from the ordinary high water mark (Stipulation K-3, p. 71).^v Along the Coastal Area, permanent facilities are to be located ¾ mile inland but exceptions may be granted (Stipulation K-6, p. 74). See also other stipulations, but most contain significant exceptions language or other loopholes allowing permanent facilities to be built.

Features included in 7 lease tracts on map North of T Lake:

7 Airstrips**	-	66 acres
1 Central Processing Facility	-	100 acres
2 Gravel mines	-	70 acres
151 Miles of roads	-	1133 acres
25 Satellite pads	-	250 acres
1 Staging area	-	50 acres

Total in 7 lease tracts N of T Lake 1669 acres

****airstrip at CPF is counted in CPF acreage**

Facilities not counted in restrictions, based on BLM ROD 2006:

Staging area at Cape Halkett (private ASRC land) does not count in total
Pipelines - 134 miles

There may be additional existing facilities at former Lonely DEWline site, or on land west of it leased by CIRI Corporation (owned by BLM), that may not be included in the restrictions. Furthermore, existing gravel exploratory pads may not be included in the restrictions.

Acreage for all features on map (inside and outside of 7 lease tracts N of T Lake, not including Alpine FFD, subject to the requirements of BLM ROD 2006.)

13 Airstrips***	-	99 acres
4 Central Processing Facilities		400 acres
3 Gravel Mines	-	105 acres
348 Miles of roads	-	2610 acres
346 Miles of pipelines	-	NA
46 Satellite pads	-	460 acres
3 Staging areas	-	150 acres

Total in map - 3824 acres

^{vi} This includes the Original Alpine project permitted by Corps of Engineers, the 5 new drill sites and associated facilities for the Alpine Satellites project as well as the Full-Field Development Scenario portrayed by BLM in the Alpine Satellites EIS (2004)

Initial Alpine Project: U.S. Army Corps of Engineers Alaska District, Permit evaluation and Decision Document, Alpine Development Project, Colville River 18 (2-960874), p. 3 (February 13, 1998). U.S. Army Corps of Engineers Alaska District, Colville River 17 (4-960869) to Nuiqsut Constructors (Alpine gravel pit) (June 24, 1997).

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[Response to 21.001]

The BLM maintains that the Draft Supplemental IAP/EIS considered an appropriate and legally sufficient range of alternatives. Development within the Teshekpuk Lake Surface Protection Area is a reasonable alternative to meet the purpose and need set forth in Chapter 1 and is within the BLM's authority under the NPRPA as amended.

[Response to 21.002]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage.

[Response to 21.003]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. The BLM maintains that it has used appropriate new information. In cases in which a comment has pointed out new data, it has been examined and included in the analysis as appropriate.

[Response to 21.004]

The BLM recognizes that predicting the level of oil and gas activities is complex and that it is difficult to know precisely where oil will be found, what types of exploration and development will occur in a particular area or exactly what types and intensity of non-oil and gas activities will occur and where. Readers are made aware that actual development may differ significantly from BLM's hypothetical scenario. The general scope and nature of the activity is, however, based on the best and most current geology and engineering information, past and current activities on the North Slope and current technology. It is presented as a reasonable, if likely high-end, representation of possible future activities. More specific discussions on the locations of future development would be misleading.

To ensure BLM complies with provisions of the National Environmental Policy Act (NEPA), the actual level of oil and gas activity is monitored to ensure that cumulative environmental impacts are within predicted levels. Supplement, revision or amendment to the IAP/EIS is needed when the net predicted level of environmental impacts is or is expected to be substantially exceeded. When appropriate, a new environmental review process is initiated with full public participation.

[Response to 21.005]

The Supplemental IAP/EIS examines the effectiveness of the stipulations and ROPs for each resource/use and for each alternative. These descriptions can be found in Chapter 4's discussion; particularly see the discussion entitled "Effectiveness of Stipulations and Required Operating Procedures" for each resource/use for each alternative and in Tables 2-2 and 2-3 in Chapter 2. Descriptions of the effectiveness of potential mitigation measures are provided immediately following the discussions of the potential mitigation measures as they are introduced in Chapter 4.

[Response to 21.006]

The BLM, on its own or in coordination with other Federal, state, and NSB agencies, industry, and academia (commonly, though not exclusively, through the North Slope Science Initiative), gathers and assesses baseline data. In addition, the IAP/EIS contains many requirements for monitoring of areas of potential development prior to any oil and gas construction. The Northeast NPR-A Supplemental ROD will adopt and summarize a monitoring and enforcement program where applicable for any mitigation.

[Response to 21.007]

The BLM maintains that it has fully addressed the flaws in the cumulative impacts analysis that the U.S. District Court for the District of Alaska found in the Northeast Amended IAP/EIS. For a discussion of the development that may occur in Northwest NPR-A that may affect cumulative impacts, including how that development may vary among the alternatives considered in the Northeast NPR-A Supplemental IAP/EIS, see the discussion of that planning area under the heading of "Reasonably Foreseeable Future Development and Production." For a discussion of how cumulative impacts associated with the Northwest NPR-A would differ depending upon which alternative is adopted in the Northeast NPR-A Supplemental ROD, see subsections entitled, "Contribution of Supplemental Alternatives to Cumulative Effects" in the Cumulative Impacts discussion for each resource and use.

[Response to 21.008]

The Supplemental IAP/EIS provides analysis consistent with the requirements of laws and regulations. The protections offered by the various alternatives under consideration in this IAP/EIS are consistent with the requirements of laws and regulations.

[Response to 21.009]

The Supplemental IAP/EIS provides analysis consistent with the requirements of laws and regulations for wildlife and their habitat, subsistence, watershed protection, and wilderness. See the discussions in Chapter 4, particularly the sections discussing impacts to vegetation, wetlands and floodplains, fish, birds, mammals, subsistence, and recreation.

[Response to 21.010]

The BLM maintains that the production of roughly 3 to 4 billion barrels of oil will help meet the nation's need for oil, and, therefore, is consistent with the purpose of the IAP/EIS.

[Response to 21.011]

The Supplemental IAP/EIS adequately addresses the cumulative impacts associated with development in Northwest NPR-A. The BLM, in the course of developing the Supplemental IAP/EIS, considered new protective measures, though it did not find any to be warranted as a result of cumulative impacts associated with development in Northwest NPR-A.

[Response to 21.012]

The BLM maintains that the Draft Supplemental IAP/EIS considered an appropriate and legally sufficient range of alternatives to meet the purpose and need described in Chapter 1.

[Response to 21.013]

The BLM maintains that the Draft Supplemental IAP/EIS considered an appropriate and legally sufficient range of alternatives to meet the purpose and need described in Chapter 1. The BLM, in the course of developing the Supplemental IAP/EIS, considered new protective measures, though it did not find any to be warranted as a result of cumulative impacts associated with development in Northwest NPR-A.

[Response to 21.014]

The BLM maintains that the Draft Supplemental IAP/EIS considered an appropriate and legally sufficient range of alternatives to meet the purpose and need described in Chapter 1.

[Response to 21.015]

The BLM maintains that the Draft Supplemental IAP/EIS considered an appropriate and legally sufficient range of alternatives to meet the purpose and need described in Chapter 1.

[Response to 21.016]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. The Ninth Circuit Court's decision in *NAEC v Norton* remains relevant to the current analysis. The location of oil and gas is unknown and, therefore, analysis of impacts associated with placement of infrastructure on hundreds or even a couple thousands of acres in an area of more than 400,000 acres that were not made available for leasing is speculative and analytically unhelpful.

[Response to 21.017]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. The Ninth Circuit Court's decision in *NAEC v. Norton* has confirmed the adequacy of such an analytical approach. Moreover, contrary to the comment, leases do not authorize exploration or development. Separate NEPA analysis and permitting processes are required for exploration and development. As the result of such analyses, the BLM may impose additional terms and conditions as requirements of the permits.

[Response to 21.018]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. The Ninth Circuit Court's decision in *NAEC v Norton* has confirmed the adequacy of such an analytical approach.

[Response to 21.019]

Section 4.2.1.2 (Oil and Gas Exploration and Development Activities) provides a general description of the activities typically associated with oil and gas operations on the North Slope of Alaska. The petroleum-related activities described in this section are applicable in a general sense because the timing and location of future commercial-sized discoveries cannot be accurately predicted until exploration of those reserves occurs. Consequently, the actual locations of drilling production sites and new pipelines in the planning area would depend on the location and sequence of those commercial-sized discoveries.

Recognizing the uncertainty of the timing and location of future oil and gas activities, Figure 4-1 of the DSEIS depicts a reasonable hypothetical layout for a central processing facility (CPF) with five satellite pads and Figure 4-2 represents speculative pipeline corridors in the NPR-A. No implications regarding specific hydrocarbon prospect location is intended as the actual location of undiscovered commercial-sized reservoirs and the timing of their discoveries is not possible to predict. The hypothetical CPF facility and pipeline corridors represent only one scenario of future NPR-A infrastructure, and more specific discussions on the locations of future development would be misleading.

[Response to 21.020]

Section 4.2.1.2 (Oil and Gas Exploration and Development Activities) and Section 4.7.3 (Oil and Gas Exploration and Development Activities Considered in the Cumulative Effects Analysis) provide a general description of the activities typically associated with oil and gas operations on the North Slope of Alaska and the type and amount of activity that could potentially occur that would contribute to the cumulative effects of leasing in Northeast NPR-A. The petroleum-related activities described in these sections are applicable in a general sense because the timing and location of future commercial-sized discoveries cannot be accurately predicted until exploration of those reserves occurs. Consequently, the actual locations of drilling production sites and new pipelines in the planning area would depend on the location and sequence of those commercial-sized discoveries. More specific discussions on the locations of future development would be misleading. Providing multiple scenarios for multiple levels of development is not helpful. The BLM has followed a conservative approach of estimating the impacts of reasonably foreseeable potential development, rather than risk underestimating impacts through analysis of minimal development (which conceivably could be no new development even if leasing is conducted both onshore and offshore) or "expected" development.

[Response to 21.021]

The BLM disagrees. There are many uncertainties associated with projecting future oil exploration and development. To address these uncertainties, the agency has made reasonable assumptions based on its knowledge of the largely undiscovered oil endowment of the planning area, on current industry practice, and on professional judgment.

[Response to 21.022]

The intent of Figure 4-2, p. 4-35, DSEIS (Speculative Future Pipeline Corridors) is to show reasonably foreseeable routes of oil sales pipelines based on the geologic play potential for oil. No implications regarding specific hydrocarbon prospect location is intended as the actual location of undiscovered commercial-sized reservoirs is not possible to predict. Although the specifics regarding location of pipelines cannot be portrayed with any degree of certainty, the impacts of what is reasonably foreseeable have been taken into account. Figure 4-1 shows a reasonable hypothetical layout for a CPF with five satellite fields. Table 4.2-C shows the estimated area of surface disturbance and amount of gravel needed for oil and gas facilities for Figure 4-1. The estimated petroleum-related activities for each Alternative are presented in Table 4.2-E. The impacts of the sales pipelines and the impacts by in-field gathering lines associated with a central processing facility are summarized by Alternative in Table 4.2-G (Estimated Surface Disturbance Due to Petroleum-related Production).

[Response to 21.023]

Section 4.2.1.2 (Oil and Gas Exploration and Development Activities) provides a general description of the activities typically associated with oil and gas operations on the North Slope of Alaska. The petroleum-related activities described in this section are applicable in a general sense because the timing and location of future commercial-sized discoveries cannot be accurately predicted until exploration of those reserves occurs. Consequently, the actual locations of drilling production sites and new pipelines in the planning area would depend on the location and sequence of those commercial-sized discoveries. More specific discussions on the locations of future development would be misleading.

[Response to 21.024]

The intent of Figure 4-2, p.4-35, DSEIS (Speculative Future Pipeline Corridors) is to show reasonably foreseeable routes of oil sales pipelines based on the geologic play potential for oil. No implications regarding specific hydrocarbon prospect location is intended as the actual location of undiscovered commercial-sized reservoirs is not possible to predict. Although the specifics regarding location of pipelines cannot be portrayed with any degree of certainty, the impacts of what is reasonably foreseeable have been taken into account. Figure 4-1 shows a reasonable hypothetical layout for a CPF with five satellite fields. Table 4.2-C shows the estimated area of surface disturbance and amount of gravel needed for oil and gas facilities for Figure 4-1. The estimated petroleum-related activities for each Alternative are presented in Table 4.2-E. The impacts of the sales pipelines and the impacts by in-field gathering lines associated with a central processing facility are summarized by Alternative in Table 4.2-G (Estimated Surface Disturbance Due to Petroleum-related Production).

[Response to 21.025]

The intent of Figure 4-2, p.4-35, DSEIS (Speculative Future Pipeline Corridors) is to show reasonably foreseeable routes of oil sales pipelines based on the geologic play potential for oil. No implications regarding specific hydrocarbon prospect location is intended as the actual location of undiscovered commercial-sized reservoirs is not possible to predict. Although the specifics regarding location of pipelines cannot be portrayed with any degree of certainty, the impacts of what is reasonably foreseeable have been taken into account. Figure 4-1 shows a reasonable hypothetical layout for a CPF with five satellite fields. Table 4.2-C shows the estimated area of surface disturbance and amount of gravel needed for oil and gas facilities for Figure 4-1. The estimated petroleum-related activities for each Alternative are presented in Table 4.2-E. The impacts of the sales pipelines and the impacts by in-field gathering lines associated with a central processing facility are summarized by Alternative in Table 4.2-G (Estimated Surface Disturbance Due to Petroleum-related Production).

[Response to 21.026]

To specify pipeline routes through the Northwest NPR-A would be speculative, as no specific oil fields have been identified. If a discovery were made in the Chukchi Sea, possible points of landfall are also difficult to determine. If BLM were to go into any finer detail, it would be misleading.

[Response to 21.027]

The discussion of potential development in the Chukchi Sea and pipelines and other facilities is presented under the subheading Chukchi Sea Planning Area in the Cumulative Effects portion of Chapter 4. The details presented in the text are reasonable considerations and any finer details would only be misleading. The exact route of the pipeline would be based on hydrocarbon discoveries within the Chukchi Sea and those existing (if any) in the Northwest at the time.

Currently, the only known discovery of oil in the Northwest is in northeast portion of the Simpson Peninsula. The pipeline route on Map 108 in Northwest NPR-A is still considered reasonable as to where the pipeline may enter NE NPR-A. Impacts of development associated with development in the Chukchi Sea, if any occurs, are included in the Cumulative Effects analysis in Chapter 4.

[Response to 21.028]

The IAP/EIS includes analysis of the impacts of pipelines and other infrastructure, including those not directly related to development of oil and gas within the planning area, within the Cumulative Effects discussion in Chapter 4. Modeling and detailed analysis, such as is advocated in the comment, however, is not appropriate for infrastructure for oil and gas that has not yet been discovered on tracts that, in some cases, have not even been leased. The National Research Council recognized this in 2003 in stating, "It is impossible to characterize future development infrastructure and activity in areas that have not been fully explored. Until exploration has occurred, the amount, distribution, and exact nature of any extractable hydrocarbon deposits remain unknown. But the amount, distribution, and type of hydrocarbon deposits profoundly influence the nature and extent of development infrastructure, thus how many roads and pipelines will be needed, and how much activity will occur and when it will occur."

[Response to 21.029]

The discussion of potential offshore development and associated offshore and onshore pipelines and other facilities is presented in the Cumulative Effects portion of Chapter 4 entitled "Oil and Gas Exploration and Development Activities Considered in the Cumulative Effects Analysis." The details presented in the text are reasonable considerations and any finer details would only be misleading. Impacts of development associated with offshore development are included in the Cumulative Effects analysis in Chapter 4.

[Response to 21.030]

The IAP/EIS includes analysis of the impacts of pipelines and other infrastructure, including those not directly related to development of oil and gas within the planning area, within the Cumulative Effects discussion in Chapter 4. Modeling and detailed analysis, such as is advocated in the comment, however, is not appropriate for infrastructure for oil and gas that has not yet been discovered on tracts that, in some cases, have not even been leased. The National Research Council recognized this in 2003 in stating, "It is impossible to characterize future development infrastructure and activity in areas that have not been fully explored. Until exploration has occurred, the amount, distribution, and exact nature of any extractable hydrocarbon deposits remain unknown. But the amount, distribution, and type of hydrocarbon deposits profoundly influence the nature and extent of development infrastructure, thus how many roads and pipelines will be needed, and how much activity will occur and when it will occur."

[Response to 21.031]

The BLM disagrees. Seismic activities are addressed in 4.7.3.3. In the Northwest NPR-A, the BLM anticipates surveys of 14,500 acres by 2D and 165,000 acres by 3D. A description of how onshore seismic is conducted can be found in Section B (Exploration) under 4.2.1.2. The other areas listed, Chukchi, Beaufort, between NPRA and ANWR Onshore, can only be calculated if data is available. These are out of BLM's jurisdiction. Some data is available, for example 100,000 line miles of 2D has occurred in the Chukchi to date. 3D surveys will be needed to help define prospective drill locations. The IAP/EIS predicts up to 4 surveys could occur during open water season. For an explanation of how these surveys would be carried out, see the write-up for the Chukchi Sea Planning Area under 4.7.3.3. Operations would be similar for the Beaufort. To speculate further and include prospective areas on a map would be misleading.

[Response to 21.032]

For clarity, Figure 4-6 of the DSEIS does not display the projected cat train routes and connecting support bases. The analysis does, however, estimate of the levels of petroleum-related activities and associated surface disturbances for each alternative as it relates to seismic activity (see section D. Projected Seismic Activity by Leasing Alternative).

[Response to 21.033]

Chapter III (3.2.5.2 Petroleum Activities in Northern Alaska) of the IAP/EIS forms the foundation supporting the fundamental assumption linking the level of future activities to the petroleum-resource potential made available for leasing and development. By taking a hard look at the historical nature of oil and gas exploration and development in Northern Alaska, the BLM obtained a perspective of the possible scale of activities associated with future NPR-A lease sales. Using historical leasing patterns, the BLM has made informed projections and assumptions regarding oil and gas activities in and around the planning area.

The discovery of the Alpine field during the winter of 1994-1995 in the Colville River Delta helped revive exploration interest in the NPR-A. Of particular significance is that the Alpine field discovery revealed a new geologic play (a set of petroleum accumulations sharing similar geologic, geographic, and temporal properties). This play extends westward into the NPR-A. Over 1.4 million acres were subsequently leased through two BLM oil and gas lease sales because the federal government and industry recognized the high potential for petroleum resources in the northeast planning area. To date, 20 exploration wells have been drilled in the planning area on leases acquired since the 1999 lease sale and at least seven of these wells encountered oil or gas and condensate. The BLM constructed its scenarios based upon its understanding of the geologic potential of the area and the amount of infrastructure that recent experience on the North Slope suggest may be justified by certain levels of petroleum production.

[Response to 21.034]

The "Undiscovered Onshore" reserves are listed below the table under footnote 3. Additionally, the table has been modified to show that CD-6 and 7 are within NPRA. However, the overall reserves estimates for CD-6 and 7 have not been released to the public.

[Response to 21.035]

The BLM disagrees. The reasonable foreseeable future development production (4.7.3.3) includes Northwest NPR-A, the Chukchi Sea Planning Area, Beaufort Sea Planning Area, gas pipeline and North Slope gas development, and onshore between NPR-A and ANWR.

Without knowledge of where industry may find and wish to develop oil and gas resources, it is not feasible to describe with any useful precision the infrastructure that would be proposed for development within either Special Area or their proximity to threatened or rare species.

[Response to 21.036]

The BLM disagrees with the assertion that the data is isolated. The supplement has addressed the cumulative impacts for increased activities in the Northeast NPR-A when combined with increased activity in the Northwest NPR-A. It also updates projections for oil extraction from the Northwest NPR-A and the development that would be associated with oil production from what was presented in the Northwest NPR-A IAP/EIS and used in the Northeast Amended IAP/EIS.

[Response to 21.037]

BLM disagrees for the most part. The changes in the oil and gas scenarios since the Northeast Amended IAP/EIS (see section 4.7.3 of the Supplemental IAP/EIS for scenarios associated with cumulative impacts), have increased the expected amount of exploration and development activities. These changes have resulted in increases in the amount, but not generally the type, of impacts. The cumulative impact analysis has been revised to take into consideration new contributors to cumulative impacts, most notably the Minerals Management Service's proposed Chukchi Sea oil and gas lease sale 193 and the State of Alaska's and ConocoPhillips/BP's current initiatives to have a gas pipeline built to deliver North Slope gas to market.

Data from the MMS, Beaufort Sea FEIS, Vol. III, 2003 was added to the Beaufort Sea section under section 4.7.3.3 to update reasonably foreseeable activities up to 2019.

[Response to 21.038]

The GC-2 (March 2006) spill has been specifically included in the analysis, including that in Appendix K, and resulted in changes in the spill scenario from that provided in the Amended IAP/EIS.

[Response to 21.039]

The volume of oil released in GC-2 spill, and the spill itself, have been included in the analysis. As pointed out in the Basic Assumptions for the Environmental Consequences under the heading "History of North Slope Oil Spills": "(w)hen a spill occurs, significant analysis takes place on the causal factors that contributed to the event. Lessons learned from the GC-2 spill have contributed to The Pipeline Inspection, Protection, Enforcement and Safety Act of 2006, signed by President Bush on December 29, 2006. The Act extends the oversight jurisdiction of the USDOT to oil and gas pipelines operating at low pressure, like the GC-2 transit pipeline." Therefore, while the proximate impact of the "practices" referred to in the comment includes the GC-2 Spill, the ultimate long-term impact includes greater oversight to correct the practices and prevent such events in the future.

[Response to 21.040]

Leasing and development in the Chukchi Sea is explicitly included in the cumulative impact analysis, and the analysis includes a discussion of the potential impacts of an offshore oil spill to birds.

[Response to 21.041]

Appendix K includes consideration of refined petroleum products, (see, for example Table K-1 and the first paragraph of Section K.1.) Refined petroleum includes fuels, lubricants and solvents. Please note the discussion of relative quantities in Section K.1.2.2. There are other

toxic substances, such as acids, but they are used in extremely small quantities compared to the volumes of crude oil and refined oils. A discussion entitled “Solid and Hazardous Waste Removal and Remediation” is included in the Basic Assumptions for the Environmental Consequences Assessment subsection of Chapter 4.

[Response to 21.042]

Information regarding oil spills with discussion on modeling of spills that occur in broken ice can be found in Section 4.2.2.2 of the Supplemental IAP/EIS.

[Response to 21.043]

The likelihood of a spill from a barge is remote; none are known to have occurred to date on the North Slope due to oil and gas development. Discussion of this potential impact, however, appears in discussions of relevant resources.

[Response to 21.044]

The BLM has considered in the cumulative effects analysis the potential for adverse effects to species due to the potential for increased development in the offshore areas of NPR-A. See the avian cumulative effect sections headings "Marine Activities" and "Contribution of Supplement Alternatives to Cumulative Effects."

[Response to 21.045]

Section 4.2.1.2 (Oil and Gas Exploration and Development Activities) provides a general description of the activities typically associated with oil and gas operations on the North Slope of Alaska. Onshore pipelines and other infrastructure associated with development of BLM-managed lands under the nearshore waters would be similar to those discussed for onshore facilities.

[Response to 21.046]

Section 4.2.1.2 (Oil and Gas Exploration and Development Activities) provides a general description of the activities typically associated with oil and gas operations on the North Slope of Alaska. Given the uncertainty of the location of oil and gas resources that may be commercially viable, it is impossible to project how many if any wells might be drilled into offshore areas. The analysis of impacts described in Chapter 4 for each alternative describes potential impacts from development of BLM-managed lands along the coast, while the cumulative impact analysis discussions in Chapter 4 addresses impacts from offshore development beyond those lands managed by the Bureau.

[Response to 21.047]

The BLM's NEPA analysis regarding the use of Lonely has met the requirements of NEPA and the Bureau maintains that its analysis of potential activity associated with that site in this IAP/EIS is fully sufficient.

[Response to 21.048]

Section 4.2.1.2 (Oil and Gas Exploration and Development Activities) provides an estimate of the levels of petroleum-related activities and associated surface disturbances for each alternative. It also presents the oil and gas resource estimates in the planning area and identifies the assumptions used to determine the type and level of projected oil and gas activity. The discussion of remote base camps such as Camp Lonely and Inigok, under the heading “A. Petroleum Operations in Arctic Conditions,” further describes logistical considerations faced by operators on the North Slope. The DEW line sites, including that currently leased by CIRI, are described in the Cumulative Effects section in the subsection entitled "Military Development and DEW-Line Stations."

[Response to 21.049]

The BLM disagrees. The examples listed on page 4-16 of the DSEIS, which give an indication of the number of flights at different stages of oil and gas exploration and development, were taken from 2004 BLM projections outlined in the Alpine Satellite Development Plan EIS (Appendix O of the DSEIS). Reliable projections of the location, timing and frequency of such flights, as well as the types of aircraft employed, is not possible because this activity will be influenced by a number of complex interactions including the phase of oil exploration, development and operations; the location of any discovered oil; the type of development that might occur; and restrictions that BLM and other regulators might place on the lessee or permittee.

[Response to 21.050]

The BLM's NEPA analysis regarding air and barging traffic and the use of Lonely has met the requirements of NEPA and the Bureau maintains that its analysis of potential activity associated with that site in this IAP/EIS is fully sufficient.

[Response to 21.051]

The BLM's NEPA analysis regarding the impacts barging traffic, including that on birds, and the use of Lonely has met the requirements of NEPA and the Bureau maintains that its analysis of potential activity associated with that site in this IAP/EIS is fully sufficient.

[Response to 21.052]

Protections of coastal areas, resources, and the subsistence uses of those areas are specifically included in Alternative B through D's K-6 stipulation.

[Response to 21.053]

Barge traffic and support vessel traffic is discussed in 4.7.3.3 under the Chukchi Planning Area heading and has been added to the Beaufort Sea heading by incorporating data from Table IV.A-4 of the MMS Beaufort Sea FEIS, Volume III. Impacts from barging traffic are presented under relevant resource subsections in the cumulative effects discussion in 4.7.7.

[Response to 21.054]

The BLM's NEPA analysis regarding the use of Lonely has met the requirements of NEPA and the Bureau maintains that its analysis of potential activity associated with that site in this IAP/EIS is fully sufficient.

[Response to 21.055]

The cumulative impact analysis has been modified to further address the potential cumulative impacts that may occur if oil and gas activities occurred at Cape Halkett.

[Response to 21.056]

We know of no other staging sites in the planning area other than those at Camp Lonely, Inigok, and Umiat.

We disagree that the BLM has ignored existing exploration operations at the Alpine field. The BLM refers to and draws examples from the Alpine field throughout the Supplemental IAP/EIS. In addition, the Alpine Satellite Development Plan EIS prepared by the BLM and four cooperating agencies (referenced in the Supplemental IAP/EIS as USDO I BLM 2004c) in 2004, analyzed alternatives to, and the potential environmental impacts of, the ConocoPhillips Alaska, Inc., proposal to construct and operate five oil production pads and associated wells, roads, airstrips, pipelines, and power lines in the northeast corner of the National Petroleum Reserve-Alaska and the Colville River Delta.

[Response to 21.057]

Text has been added to the cumulative impacts analysis of Chapter 4 to cover this issue.

[Response to 21.058]

Discussion has been added to the Cumulative Impacts: Sociocultural Systems section under Past and Present Effects and Their Accumulation with regard to the presence in Nuiqsut of oil and gas employees and equipment.

[Response to 21.059]

The BLM recognizes that gravel is a scarce commodity in the planning area. However, barging this resource to coastal staging areas in the planning area is only one of several alternate strategies identified in the DSEIS. These include extracting gravel from existing mine sites east of the Colville River, processing bedrock for construction materials, reusing gravel from previous drillsites, designing alternatives (year-round ice pads; composite all-season pads), and developing new sand and gravel mine sites within the planning area. It is likely that some combination of these alternate strategies will be employed. In addition, project plans for new field development in the planning area would take into consideration site-specific conditions as well as the location and distance to sources of gravel materials relative to development.

Although no development has yet occurred in the proposed Clover A Mine Site, boreholes drilled in 2001 and 2002 by Conoco Phillips confirmed the presence of suitable sand and gravel materials within the site's limits. Additional geotechnical exploration performed to the north and east of the proposed site in the winter of 2004 indicated that the deposits of suitable sand and gravel material are localized and the proposed site appears to offer the greatest concentration of these deposits in the local vicinity.

[Response to 21.060]

Barge traffic and support vessel traffic is discussed in 4.7.3.3 under the Chukchi Planning Area heading and has been added to the Beaufort Sea heading by incorporating data from Table IV.A-4 of the MMS Beaufort Sea FEIS, Volume III.

ROP E-8 is designed to minimize the impact of mineral materials mining activities on air, land, water, fish, and wildlife resources.

[Response to 21.061]

The discussion of potential gravel sources in the basic assumptions portion of Chapter 4 refers to bedrock outcrops as a potential source for gravel in the southern portion of the planning area where such outcrops are considerably more prevalent than in the northern portion of the planning area. The specific outcrops that might be utilized would be determined once a commercial oil and gas discovery has been made, transportation routes determined, and gravel needs identified.

[Response to 21.062]

Discharges of drilling muds, cuttings, and fluids are regulated closely. Formation water produced from the wells along with the oil is regulated by the USEPA. The Alaska Oil and Gas Conservation Commission has primacy for this program. Some wastes are disposed through the annulus of producing wells, an activity that is exempt from the Underground Injection Control program. However, the AOGCC also regulates this practice for the State of Alaska. Surface disposal of drilling wastes would require a solid waste permit from ADEC.

Cumulative impacts to water resources within the project area due to offshore drilling in the Beaufort and Chukchi OCS waters have been addressed within the cumulative impacts section. The impacts to marine waters are not likely to impact those within the project boundaries.

[Response to 21.063]

Generally speaking, the legacy wells are not a threat to the environment as most of the contaminants from the early Navy drilling period (1943-1955) have been cleaned up. The USGS sponsored major cleanups of these early Navy wells around the same time in which they began drilling their legacy wells. Major cleanups took place from 1978-1980, hauling out in excess of 31.3 million pounds of hazardous and solid wastes over the first two years. A BLM sponsored project to study the all the reserve pits in NPRA (28 total). As a result of the study, the ADEC approved to provisionally close 27 of the 28 reserve pits. The pit that did not meet approval was the East Teshekpuk well, due to buried solid wastes. East Teshekpuk was cleaned up in early 2008.

[Response to 21.064]

The BLM recognizes that predicting the level of oil and gas activities is complex and that it is difficult to know precisely where oil will be found, what types of exploration and development will occur in a particular area or exactly what types and intensity of non-oil and gas activities will occur and where. Readers are made aware that actual development may differ significantly from BLM's hypothetical scenario. The general scope and nature of the activity is, however, based on the best and most current geology and engineering information, past and current activities on the North Slope and current technology. It is presented as a reasonable, if likely high-end, representation of possible future activities.

To ensure BLM complies with provisions of the National Environmental Policy Act (NEPA), the actual level of oil and gas activity is monitored to ensure that cumulative environmental impacts are within predicted levels. Supplement, revision or amendment to the IAP/EIS is needed when the net predicted level of environmental impacts is or is expected to be substantially exceeded. When appropriate, a new environmental review process is initiated with full public participation.

[Response to 21.065]

The development of satellites to the Alpine CPF are considered in the IAP/EIS. Those elements that may be developed on BLM-managed lands (CD-6 and CD-7 and associated roads, pipelines, and other facilities) are part of the direct and indirect impact analysis. Those elements outside of BLM-managed lands are considered as part of the cumulative impact analysis.

[Response to 21.066]

The text in the Basic Assumption for the Environmental Consequences Assessment portion of Chapter 4 has been modified under the "Exploration and Delineation Wells" for clarity.

[Response to 21.067]

Stipulation D-2 of the Preferred Alternative, Alternative D, states: "Exploratory drilling shall be limited to temporary facilities such as ice pads, ice roads, and ice airstrips, unless a proposal is to use a previously constructed road or pad and it is environmentally preferable." Gravel roads for exploration is also forbidden under Alternative A and would be allowed under the other alternatives only under very restricted and unlikely cases. Because such development is considered very unlikely and its impacts very specific to a specific site, the IAP/EIS does not analyze such impacts.

[Response to 21.068]

The BLM disagrees. The term “platform” as used in the Stipulations under each of the Alternatives refers to a permanent above-water drilling stand and not the Arctic Platform described on page 4-22 of the Draft Supplemental IAP/EIS. No Stipulation in the DSEIS has been modified to include the Arctic Platform.

[Response to 21.069]

The BLM considers the analysis provided in the Final Supplemental IAP/EIS provides an appropriate level of analysis of the diverse resources of the planning area and the potential impacts to them.

[Response to 21.070]

Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown, that there is a lack of precise surface resource and use information for many resources and uses, and that a relatively small amount of total cumulative impacts are likely to be attributable to the alternatives considered in this Supplemental IAP/EIS, the additional methods of evaluating cumulative effects suggested in the comment would add little or no value to the impact analysis. As the document the commenter apparently cites (CEQ 1997, not 1992) notes all of the methods have their weaknesses. BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.071]

The cumulative impact analysis provides a legally sufficient analysis of potential impacts. Quantitative estimates of impacts have not been identified for all resources and uses because of the great predictive uncertainties associated with complex ecological factors and because, even if environmental systems were less complex, there is great uncertainty surrounding which potential development may occur and in what manner. Note that in 2003 the National Research Council stated, "It is impossible to characterize future development infrastructure and activity in areas that have not been fully explored. Until exploration has occurred, the amount, distribution, and exact nature of any extractable hydrocarbon deposits remain unknown. But the amount, distribution, and type of hydrocarbon deposits profoundly influence the nature and extent of development infrastructure, thus how many roads and pipelines will be needed, and how much activity will occur and when it will occur." (NRC, 2003, p.116)

[Response to 21.072]

The cumulative impact analysis provides a legally sufficient analysis of potential impacts. Quantitative estimates of impacts for many resources and uses, including establishing thresholds, have not been identified because of the great predictive uncertainties associated with complex ecological factors and because, even if environmental systems were less complex, there is great uncertainty surrounding which potential development may occur and in what manner.

The BLM is required to ensure that adequate monitoring is conducted. Either on its own or in coordination with other Federal, state, and NSB agencies, industry, and academia (commonly, though not exclusively, through the North Slope Science Initiative), the Bureau currently gathers and assesses baseline data. In addition, the IAP/EIS contains many requirements for monitoring of areas of potential development prior to any oil and gas construction. The Northeast NPR-A Supplemental ROD will adopt and summarize a monitoring and enforcement program where applicable for any mitigation.

[Response to 21.073]

The BLM, on its own or in coordination with other federal, state, and NSB agencies, industry, and academia (commonly, though not exclusively, through the North Slope Science Initiative), gathers and assesses baseline data. In addition, the IAP/EIS contains many requirements for monitoring of areas of potential development prior to any oil and gas construction. The Northeast NPR-A Supplemental ROD will adopt and summarize a monitoring and enforcement program where applicable for any mitigation.

[Response to 21.074]

The cumulative impact analysis provides a legally sufficient analysis of potential impacts. Quantitative estimates of impacts, including establishing thresholds for habitat fragmentation, have not been identified because of the great predictive uncertainties associated with complex ecological factors and because, even if environmental systems were less complex, there is great uncertainty surrounding which potential development may occur and in what manner.

[Response to 21.075]

Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown, that there is a lack of precise surface resource and use information for many resources and uses, and that a relatively small amount of total cumulative impacts are likely to be attributable to the alternatives considered in this Supplemental IAP/EIS, the additional methods of evaluating cumulative effects suggested in the comment would add little or no value to the impact analysis.

[Response to 21.076]

For each resource or use, the cumulative impact analysis caused by various actions are summarized in conclusion subsections. Authors describe how impacts to one resource or use could be reflected upon impacts on other resources and uses. Given that the location of oil is unknown, spatial analysis such as is suggested would be highly conjectural and of minimal use analytically.

[Response to 21.077]

BLM has included the predicted effects of climate change to inform the cumulative impact analysis. A quantitative approach is used where the data warrant. Where response of a species is uncertain due to complex interactions, or lack of information, a qualitative assessment was used.

[Response to 21.078]

While predictive models provide one approach assessing future changes resulting from climate change, BLM has chosen to use the evaluation process in the cumulative effects analysis to condition the risk assessment in the IAP/EIS. BLM has included the predicted effects of climate change to inform the cumulative impact analysis. A quantitative approach is used where the data warrant. Where response of a species is uncertain due to complex interactions, or lack of information, a qualitative assessment was used.

[Response to 21.079]

The BLM has edited Section 4.7.7.8.3 to reflect findings presented in the report.

[Response to 21.080]

The comment misinterprets the use of "speculative." Certainly models can be and have been constructed to predict ranges of possible vegetation response to climate change, given a

reasonable set of predicted changes in physical and biological parameters. However, we disagree that they are necessary, more accurate, or more informative than the analysis in the IAP/EIS.

[Response to 21.081]

The BLM has addressed the potential impacts using the best available information. Relevant studies are cited in the discussions in Chapter 4. The performance-based stipulations and ROPs are designed to best take advantage of evolving understanding of potential impacts.

[Response to 21.082]

The source cited, which was released for public review after the Draft Supplemental IAP/EIS went to press, is a draft report. A final report is not anticipated prior to issuance of the Final Supplemental IAP/EIS. Nevertheless, the lessons in the draft document, which includes the importance of adaptive management strategies, are informative. The Supplemental IAP/EIS includes adaptive management abilities through the performance-based stipulations and ROPs. In addition, ongoing and continuing monitoring anticipated by BLM will assist the agency in adapting to changes in the environment due to climate change.

[Response to 21.083]

The Final IAP/EIS has been edited to make our intent clear. "The effects of climate change are expected to result in changes to physical and biological components of the ecosystem. These changes may make protected areas or reserves created for specific species/resources based on conditions and use patterns now of limited long-term value if there are significant changes in future conditions making them unsuitable or inaccessible."

A "protected area" set aside to protect the area from human activity is different from an area protected for a specific species. As noted in the IAP/EIS and in this comment letter, climate change is predicted to result in changes to the physical and biological environment - the features and conditions that provide "habitat" for individual species. Changes in those conditions may reasonably be expected to result in changes in use and distribution of species.

[Response to 21.084]

The BLM agrees that allowing no development in the Northeast NPR-A would provide caribou more resilience to potential impacts of climate change than having some development. Given the uncertainties involved, the BLM does not know if any additional resilience provided by having no development versus restricted development would be needed by caribou in that area. The BLM already acknowledges in the IAP/EIS that caribou productivity could be negatively affected. The text in the cumulative impacts section for terrestrial mammals has been revised to make that point even more clear, and also to state a potential for reduced resilience. The entire statement the comment refers to in its last paragraph is: "Protected areas or reserves are of limited long-term value if the conditions within them are expected to change, possibly making them unsuitable or inaccessible." (p. 4-626 of the Draft Supplemental IAP/EIS). BLM has re-written the sentence as follows: "The effects of climate change are expected to result in changes to physical and biological components of the ecosystem. These changes may make protected areas or reserves created for specific species/resources based on conditions and use patterns now of limited long-term value if there are significant changes in future conditions making them unsuitable or inaccessible."

[Response to 21.085]

The BLM already acknowledges in the DSEIS that caribou productivity could be negatively affected. The text in the cumulative impacts section for terrestrial mammals has been revised to

make that point even more clear, and to state that negative population level effects are one potential outcome.

[Response to 21.086]

The statement referred to here was not made as an excuse but as recognition of a fact well known by ecologists and others that populations can undergo dramatic fluctuations regardless of any anthropogenic influences. The sentence in question has been revised in the text in an attempt to better clarify its meaning. BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.087]

For caribou, which exist in fairly distinct sub-populations referred to as "herds," the concept of source-sink populations may not be appropriate. The BLM acknowledges the importance of certain parts of a herd's range in different seasons. For moose, although the term source-sink is not mentioned explicitly, the differences noted in moose density during winter between the coastal plain and riparian corridors, especially the Colville River, denote what may be a population source. The proposed mitigation packages acknowledge the importance of these areas. For grizzly bear, wolf and wolverines, densities are higher in the south, and especially southwest, of the NPR-A and if there are sources for these species NPR-A populations they would be there, outside the planning area. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.088]

The BLM's assumption referred to here is based on a lack of evidence that caribou survive the winter better in the absence of seismic exploration than in its presence. The BLM conducts caribou research and monitoring in cooperation with ADFG and the NSB, and the NSB is currently attempting a quantitative study of this issue. It is difficult to conduct, however, because success requires the correct combination of activities (over-wintering caribou and seismic exploration) in time and space. The researchers cannot control any of these variables. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.089]

The population trajectories of the TLH and CAH were very similar from 1978 to about 1990, and have shown some similarities since. The debate continues in the scientific community regarding the impacts of oil development on the CAH, and the BLM should not try to be the arbiter in this document. The DEIS presents all points in this debate, and states that a possible outcome of oil development in the NPR-A could be decreased productivity for the TLH. The text has been revised to make that point even more clear, and to state that negative population level effects are one potential outcome. Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown (NRC 2003), that there is a lack of precise surface resource and use information for many resources and uses, and that perhaps a relatively small amount of total cumulative impacts may be attributable to the alternatives considered in this Supplemental IAP/EIS, a quantitative analysis of cumulative effects suggested in the comment would add little or no value to the impact analysis overall. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.090]

Again, the BLM does not intend this document to settle the debate within the scientific community (of which the NRC 2003 author was one member) over impacts of oil development to caribou. The intent is to present all points. The "conclusion" in question, actually stated as a

possibility, is in recognition of a fact well known by ecologists and others that populations can undergo dramatic fluctuations regardless of any anthropogenic influences. The BLM's concern over impacts of development on caribou is indicated by the restrictive lease stipulations and other required operating procedures proposed for the planning area. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.091]

The points covered in the NRC report are incorporated in the discussion in the DSEIS. Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown (NRC 2003), that there is a lack of precise surface resource and use information for many resources and uses, and that perhaps a relatively small amount of total cumulative impacts may be attributable to the alternatives considered in this Supplemental IAP/EIS, the additional methods of evaluating cumulative effects suggested in the comment would add little or no value to the impact analysis. As the document the commenter cites (CEQ 1997) notes, all of the methods have their weaknesses. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.092]

The connection between accelerated warming and an increased need for gravel roads for development is not clear. More likely to occur would be a shortened season in winter for off-road travel, affecting exploration activities. The Supplemental IAP/EIS contains scenarios for development and required operation procedures for exploration, including no construction of gravel roads or pads for the latter. If climate warming precludes these conditions, further exploration and development would require additional NEPA analysis to include cumulative impacts analysis. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.093]

The BLM acknowledges in the DSEIS that caribou productivity may decrease as a result of BLM permitted activities, with or without the cumulative effects of climate change and other activities. The text in the cumulative impacts section for terrestrial mammals has been revised to make that point even more clear, and to state that negative population level effects are one potential outcome. Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown (NRC 2003), that there is a lack of precise surface resource and use information for many resources and uses, and that perhaps a relatively small amount of total cumulative impacts may be attributable to the alternatives considered in this Supplemental IAP/EIS, the additional methods of evaluating cumulative effects suggested in the comment would add little or no value to the impact analysis. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.094]

An addition to the text in the cumulative impacts section for mammals has been made to clarify consideration of these effects.

[Response to 21.095]

There has been adequate summer research on caribou response to pipelines in the absence of roads to conclude that pipelines at least five feet above the ground and at least 500 feet from a road do not significantly hinder caribou movements. Less research results are available during winter when snow lies on the ground, but the data available indicate that pipelines seven feet

above the ground do not significantly hinder caribou movements. See Lawhead et al. (2006) for a review. A citation to that report, already cited elsewhere in the DSEIS, has been added to the text at the location indicated by the commenter.

[Response to 21.096]

The text referred to here has been revised to make clear that only the range of the CAH has significant overlap with oil field development. Griffith et al. (2002) state four ecological arguments for why the Porcupine Herd may be particularly sensitive to oil development. The TLH does not share one (low productivity and perhaps two (lack of high-quality alternate calving habitat) of those. The latter revolves around scale because TLH cows display an ability to calve north or south of Teshekpuk Lake (but near the lake in both cases) depending on timing of snow melt, but have showed less success in areas further from Teshekpuk Lake. It is not clear that an analysis like that of Griffith et al. (2002) would be as informative for the TLH as it presumably has been for the Porcupine Herd. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.097]

Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown (NRC 2003), that there is a lack of precise surface resource and use information for many resources and uses, and that perhaps a relatively small amount of total cumulative impacts may be attributable to the alternatives considered in this Supplemental IAP/EIS, the additional methods of evaluating cumulative effects suggested in the comment would add little or no value to the impact analysis. As the document the commenter cites (CEQ 1997) notes, all of the methods have their weaknesses. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.098]

This section is not suggesting that no analysis is possible or that any conservation practice would be hopeless. It is merely stating some of the potential risks. This section is part of an analysis, though not quantitative, and the BLM is proposing conservation practices that are intended to be effective although adaptive management may be necessary in some cases. The BLM is not designing major development projects. Such projects would be proposed by industry if major oil finds are made. Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown (NRC 2003), that there is a lack of precise surface resource and use information for many resources and uses, and that perhaps a relatively small amount of total cumulative impacts may be attributable to the alternatives considered in this Supplemental IAP/EIS, the additional methods of evaluating cumulative effects suggested in the comment would add little or no value to the impact analysis. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.099]

A great deal of science-based knowledge went into the analyses of environmental consequences for each alternative and for cumulative effects. This document does look at the potential effects of caribou displacement along roads, suggesting habitat loss would likely be greater than the gravel footprint alone, and it does consider the additive and synergistic effects of development in the NW and NE NPR-A and the Colville Delta. The text has been revised to make these points more clear. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.100]

The GIS-based hypothetical development scenario provided by the commenter does indeed result in a quantitative estimate of affected caribou habitat. However, it assumes 369 miles of roads compared to the 320 miles that BLM presents in its scenario for the entire planning area, and the 369 miles appears to be in addition to BLM's hypothetical full field development for Alpine satellites, thus considerably exaggerating the number of miles. It appears to assume that all of its roads, and thus all planning area development, will occur within the caribou calving area. It assumes 15 airstrips to the BLM's six, despite a great deal of road connectivity among developments as presented. It also seems to imply that all land within 2.5 miles of roads will see 100% avoidance by caribou. In short, it appears to have been drawn to present an unrealistic maximum adverse effect to caribou. This may be a misrepresentation of science. Cameron et al. (1992) showed decreased calving caribou density within 4 km (2.5 miles) of roads, but not a complete lack of calving caribou, and their results were statistically significant only within 1 km of roads. This is not to say that the observed, decreased density in the 1-4 km range was not real. If a larger sample size had been possible, the results may have been statistically significant but this is not known. So a quantitative estimate of caribou habitat lost such as this may not necessarily be of value for the BLM's ultimate decision. There is a great deal of science-based knowledge that went into the DSEIS analyses of environmental consequences for each alternative and for cumulative effects. This document does look at the potential effects of caribou displacement along roads, suggesting habitat loss would likely be greater than the gravel footprint alone, and it does consider the additive and synergistic effects of development in the NW and NE NPR-A and the Colville Delta. The text has been revised to make these points more clear. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.101]

Although implied in the DSEIS, the text of the cumulative effects analysis for terrestrial mammals has been revised to explicitly state the potential for synergistic effects from oil and gas development when combined with climate warming.

[Response to 21.102]

Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown (NRC 2003), that there is a lack of precise surface resource and use information for many resources and uses, and that perhaps a relatively small amount of total cumulative impacts may be attributable to the alternatives considered in this Supplemental IAP/EIS, the additional methods of evaluating cumulative effects suggested in the comment would add little or no value to the impact analysis. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 21.103]

The coastal buffer established by Lease Stipulation K-6 is attached to the actual coastline and would be measured from the coast at the time of any development proposal.

[Response to 21.104]

The likelihood of large oil spills is discussed in Section 4.2.2. Very Large Oil Spills are discussed separately in Section 4.11

[Response to 21.105]

The IAP/EIS is based on the most recent information available at the time. SBS polar bears do appear to be increasing onshore denning as well as moving eastward. This change has been

occurring for at least the last 10 years. Available information suggests that polar bear denning density in and near the planning area remains "relatively low" compared to other areas used by the SBS population.

Since the Draft IAP/EIS was published additional information regarding polar bears has become available. This information is incorporated into the Final IAP/EIS as appropriate.

[Response to 21.106]

The IAP/EIS is based on the most recent information available at the time. SBS polar bears do appear to be increasing onshore denning as well as moving eastward. This change has been occurring for at least the last 10 years. Available information suggests that polar bear denning density in and near the planning area remains "relatively low" compared to other areas used by the SBS population.

Since the Draft IAP/EIS was published additional information regarding polar bears has become available. This information is incorporated into the Final IAP/EIS as appropriate.

Given protective measures in the IAP/EIS and the requirements of the MMPA as well as analysis in the USGS reports and by USFWS (Schliebe et al 2006) the conclusion that the potential for impact is minimal is valid and supported.

[Response to 21.107]

The USGS reports were not released until after the Draft Supplemental IAP/EIS went to the printer. The analysis conducted by USGS has been incorporated in the Final Supplemental IAP/EIS as appropriate.

[Response to 21.108]

ROP C-1 was designed to be compliant with the requirements imposed by USFWS under the MMPA. Compliance with ROP C-1 will be demonstrated by obtaining the necessary Letter of Authorization from USFWS.

Oil and gas exploration and development activities have been conducted regularly outside of the area covered by the USGS potential denning habitat maps. These activities are conducted under the auspices of the USFWS and the MMPA. USFWS considers these measures to be effective (Schliebe et al 2006).

[Response to 21.109]

The IAP/EIS analysis suggests it is possible that 1-2 bears could be killed or fail to successfully reproduce through the life of the plan. While any reduction in a population is a population effect, the predicted loss amounts to approximately 0.1% of the SBS population and any change in population size or reproductive output as a result would likely be undetectable.

USFWS and USGS (Schliebe et al 2006 and Amstrup et al 2007 [published after the Draft IAP/EIS]) concluded that oil and gas development on the North Slope as currently conducted is not likely to adversely effect the SBS population of polar bears.

[Response to 21.110]

The IAP/EIS notes that there is existing trend towards onshore denning as well as a movement eastward. It also notes that onshore polar bear dens are typically associated with coastal, lake and river bluffs/banks. Under all alternatives the majority of these features within 25 miles of the coast (where most dens occur) are protected by RSO or other buffer.

[Response to 21.111]

The coastal buffer established by Lease Stipulation K-6 is attached to the actual coastline and would be measured from the coast at the time of any development proposal.

[Response to 21.112]

The statement cited is a conclusory statement supported by the analysis preceding it.

Immediately following the statement cited, is the conclusion regarding the effects of climate change, which is expected to have significant adverse effects on polar bears worldwide. It is also noted that exploration and development activities may exacerbate the effects of climate change, but that management actions demonstrated to successfully reduce impacts should continue to be successful.

[Response to 21.113]

The affected environment section has been revised to better describe the range of the known muskox group currently in the NE NPR-A planning area. The cumulative effects section has been revised to reflect how little is currently known about how muskoxen will ultimately use the available habitats in the NPR-A and thus what the cumulative impacts of predation, development and climate change may be.

[Response to 21.114]

The BLM describes the uniqueness of the brant populations molting in the Teshekpuk Lake Special Area (TLSA) in the avian section of Chapter 3 under the heading "Black Brant." The BLM's understanding of the importance of the brant populations and molting habitats in the TLSA resulted in identification of a goose molting Land Use Emphasis Area (LUEA) in the 1998 Northeast NPR-A IAP/EIS. In addition, the Final Supplemental IAP/EIS's Preferred Alternative includes designation of a "Goose Molting Area" that as such is accorded specific protections (see Stipulation K-4).

[Response to 21.115]

BLM is concerned about effects of disturbance on molting brant. Disturbance is a change in behavior or distribution resulting from a disturbance event. Detection of disturbance requires a clear understanding of patterns of movement and habitat use by birds that are not disturbed. Thus BLM is currently funding a study that will provide baseline data for detection and/or measurement of disturbance. This study will act as a starting point for other studies that will focus on the effects of disturbance on molting brant. Stipulation K-4 was crafted in order to minimize disturbance to molting geese and loss of goose molting habitat in and around lakes in the Goose Molting Area.

[Response to 21.116]

Pipeline construction is most likely to occur during winter, see section describing pipeline construction in Chapter 4.

After construction is completed associated activities (maintenance) will be less impactful to molting geese than activities associated with other types of infrastructure (road traffic, generator noise, pedestrian activity). In addition to impacts due to loss of habitat from the pipeline footprint many other impacts were considered in this analysis (Section 4.3.8).

[Response to 21.117]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project specific scale appropriate for exploration and development a more quantitative approach such as you suggest would be appropriate and will be conducted.

[Response to 21.118]

BLM has properly described the habitat requirements for nesting yellow-billed loons in the avian section of Chapter 3 in the SEIS. Due to the diversity of avian species present in the NE NPR- A BLM has chosen to describe potential impacts organized by the type of potential impact rather than by individual species. BLM has recognized the potential impacts to yellow-billed loons and has provided for their protection through a number of stipulations particularly Stipulation K-11. On a project specific level BLM will be able to better assess potential impacts to yellow-billed loons and will be better able to provide site specific protections for the species.

[Response to 21.119]

Bar-tailed godwits, dunlin and American golden-plover are all described in some detail in Chapter 3 of this EIS. Chapter 4 notes that impacts are more likely to occur with species that are vulnerable to small losses of nests and those species for which habitat may be limiting.

[Response to 21.120]

Additional text has been added to the Final IAP/EIS to clarify that spectacled eiders are more common and occur at higher densities than Steller's eiders and that while spectacled eiders are concentrated in the northern half of the planning area, Steller's eiders are more patchily distributed but occur throughout the planning area albeit at very low densities.

Steller's eiders occur at such low densities on the Arctic Coastal Plain that there is almost no information on their response to development activities. Inferences derived from spectacled eider studies provide a reasonable estimate of the possible effects of development on Steller's eider, if development should actually occur near areas where Steller's eider occur. As noted in the IAP/EIS, the potential for effects from development and the potential number of birds affected is dependent on where development actually occurs.

BLM has initiated consultation with the USFWS on the IAP/EIS and is complying with its responsibilities under the ESA.

[Response to 21.121]

The IAP/EIS analyzed cumulative impacts associated with activity in the Northwest NPR-A in the Threatened and Endangered section of the Cumulative Effects portion of Chapter 4.7.7.10.

[Response to 21.122]

The BLM feels that Chapter 4 does address CEQ regulations as stated. Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown (NRC 2003), that there is a lack of precise surface resource and use information for many resources and uses, and that perhaps a relatively small amount of total cumulative impacts may be attributable to the alternatives considered in this Supplemental IAP/EIS, the additional methods of evaluating cumulative effects suggested in the comment would add little or no value to the impact analysis.

[Response to 21.123]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project-specific scale appropriate for exploration and development a more quantitative approach will be undertaken and will result in appropriate project-specific mitigations.

[Response to 21.124]

BLM describes the uniqueness of the specialized habitat needs of different species in the avian section of Chapter 3. BLM's understanding of the importance of specialized habitat is reflected in specific protections accorded to molting geese including requirements for studies to occur prior to development and in numerous stipulations.

[Response to 21.125]

BLM has recognized the potential impacts to yellow-billed loons and has provided for their protection through a number of stipulations particularly Stipulation K-11. On a project-specific level BLM will be able to better assess potential impacts to yellow-billed loons and will be better able to provide site-specific protections for the species.

[Response to 21.126]

The BLM has acknowledged that costal erosion will reduce the amount of habitat available for tundra nesting birds (Section 4.7.7.8.3). However specific amounts and rates of coastal erosion are likely to change over time.

[Response to 21.127]

Smol and Douglas (2007) present data collected in the high arctic, above 78 degrees north latitude, significantly further north than the planning area. It is completely unknown if results from Smol and Douglas are in any way comparable to potential effects of climate change in the Planning Area.

[Response to 21.128]

The NRC report states "Effects on invertebrates are not likely to be significant because during winter most invertebrates inhabiting shallow lakes are in freeze-tolerant resting stages." ROP B-2 restricts water withdrawal from fish and non fish bearing lakes in order to maintain populations of, and adequate habitat for fish and inverts and waterfowl. Additionally, water withdrawal from non fish bearing lakes (ROP B-2c) has been modified in the Preferred Alternative to allow for up to only 35% (previously 100%) of the water volume to be withdrawn.

[Response to 21.129]

Flint et al. 2007 presents two alternative hypotheses for the observed shift in brant distribution in the Teshekpuk Lake Special Area. The causative mechanisms for the observed shift are unknown at this time.

[Response to 21.130]

Impacts to specific resources in the Northwest Planning Area are presented in the 2003 Northwest NPR-A IAP/EIS. Synergism between the NE and NW Planning Areas is presented in section 4.7.7.8.4.

[Response to 21.131]

The BLM feels that Section 4.2 presents quantification of the potential increases in expected

development due to changes in assumptions for the price of oil. These assumptions were used in the formulation of the analysis presented in the IAP/EIS. See Tables 4.2-E, 4.2-F, 4.2-G, etc for the presented information.

[Response to 21.132]

Section 4.2 of the IAP/EIS (Basic Assumptions for the Environmental Consequences Assessment, section titled "B. Development Scenarios by Leasing Alternative) states: "New commercial oil field are most likely to be discovered in the northern portion of the planning area that has been designated as having high potential for the occurrence of petroleum resources." This statement weighted the impact analysis to these sensitive areas of the Planning Area. The assumptions set forth in this section are the basis of the analysis presented throughout the document.

[Response to 21.133]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project specific scale appropriate for exploration and development a more quantitative approach such as you suggest would be appropriate and will be conducted. The impacts from roads and pipelines on shorebirds and other wildlife using upland and other terrain north and east of Teshekpuk Lake is analyzed in Chapter 4.

[Response to 21.134]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project specific scale appropriate for exploration and development a more quantitative approach will be undertaken and will result in appropriate project-specific mitigations.

[Response to 21.135]

The BLM describes the uniqueness of the brant populations molting in the Teshekpuk Lake Special Area (TLSA) in the avian section of Chapter 3 under the heading "Black Brant." The BLM's understanding of the importance of the brant populations and molting habitats in the TLSA resulted in identification of a goose molting Land Use Emphasis Area (LUEA) in the 1998 Northeast NPR-A IAP/EIS. In addition, the Final Supplemental IAP/EIS's Preferred Alternative includes designation of a "Goose Molting Area" that as such is accorded specific protections (see Stipulation K-4).

[Response to 21.136]

BLM is concerned about effects of disturbance on molting brant. Disturbance is a change in behavior or distribution resulting from a disturbance event. Detection of disturbance requires a clear understanding of patterns of movement and habitat use by birds that are not disturbed. Thus BLM is currently funding a study that will provide baseline data for detection and/or measurement of disturbance. This study will act as a starting point for other studies that will focus on the effects of disturbance on molting brant. Stipulation K-4 was crafted in order to minimize disturbance to molting geese and loss of goose molting habitat in and around lakes in the Goose Molting Area.

[Response to 21.137]

Foxes are well known to have an effect on nesting waterfowl due to egg predation. It is unlikely that foxes will have a disproportionate effect on the mortality of molting geese as molting geese are highly mobile and exceptionally wary of predators.

[Response to 21.138]

The BLM has presented Liebezeit and Zack's work in Chapter 3 of the Supplement IAP/EIS and has considered it in the impact analysis.

[Response to 21.139]

Each of the alternatives proposes setbacks from both the Ikpihpuk and Miguakiak rivers that would generally prohibit permanent oil and gas facilities other than pipeline crossings.

[Response to 21.140]

Each of the alternatives provides protection provisions—including no leasing, restrictions on surface facilities, and/or seasonal or spatial restrictions—for these areas.

[Response to 21.141]

Each of the alternatives provides protection provisions—including no leasing, restrictions on surface facilities, and/or seasonal or spatial restrictions—for a the area around Teshekpuk Lake.

The National Audubon Society is the U.S. Partner for BirdLife International, the entity that coordinates the Important Bird Area (IBA) program globally. In order for a site to be recognized as an IBA, it must be nominated, and then reviewed by the state and national IBA technical committees who assess the data and the appropriate level of significance. Any citizen can nominate an area for inclusion in the IBA program. At this time, an area greater than but including the area surrounding Teshekpuk Lake has been nominated and identified as a State level IBA. The state IBA committee has recommended the nomination to the national review committee for acceptance at the global level. A decision is expected from the national committee sometime in 2008.

[Response to 21.142]

The Pik Dunes is singled out in all four alternatives for special protection. See stipulation 45 in Alternative A and stipulation K-8 in the other alternatives.

[Response to 21.143]

Each of the alternatives provides protection provisions—including restrictions on surface facilities and seasonal or spatial restrictions—to protect raptors along the Colville River and its tributaries, the Kikiakrorak and Kogosukruk rivers.

The National Audubon Society is the U.S. Partner for BirdLife International, the entity that coordinates the Important Bird Area (IBA) program globally. In order for a site to be recognized as an IBA, it must be nominated, and then reviewed by the state and national IBA technical committees who assess the data and the appropriate level of significance. Any citizen can nominate an area for inclusion in the IBA program. At this time the Colville River corridor including the lower reaches of the Kikiakrorak and Kogosukruk rivers has been nominated and identified as a State level IBA. The State IBA committee has recommended the nomination to the national review committee for acceptance at the global level. A decision is expected from the national committee sometime in 2008.

[Response to 21.144]

The BLM does not agree that the stipulations and ROPs considered in this IAP/EIS remove or weaken the protections provided in the 1998 ROD. The agency maintains that the alternatives under consideration fully meet the requirements to protect the lands and resources as required by law and regulation. For more discussion on this matter, see the subsection of Chapter 2 entitled "Stipulations and Required Operating Procedures."

[Response to 21.145]

The BLM maintains that the description of the alternatives, including the protective features of Alternative A, are presented fully in Chapter 2 and in Appendices D, E, and F.

[Response to 21.146]

The IAP/EIS's scenario for potential development both as a result of the decision of this IAP/EIS process and the scenario for reasonably foreseeable developments used in the cumulative impact analysis is appropriate. The scenario for cumulative impact analysis specifically addresses development in Northwest NPR-A and in offshore areas in the Beaufort and Chukchi Seas.

[Response to 21.147]

The BLM maintains that the description of the alternatives, including the protective features of Alternative A, are presented fully in Chapter 2 and in Appendices D, E, and F.

[Response to 21.148]

The Supplemental IAP/EIS adequately describes the 1998 ROD in Chapter 2 and Appendix D. The direct and indirect environmental impacts of that decision, which is incorporated in Alternative A in the Supplemental IAP/EIS, are discussed in Chapter 4. The effectiveness of Alternative A's stipulations are discussed in separate subsections for each resource and use in Chapter 4's discussion of the impacts of Alternative A and in Table 2-2 of Chapter 2. The overall impacts of Alternative A are discussed in Chapter 4 and in Table 2-3 of Chapter 2.

[Response to 21.149]

The BLM maintains that the analysis of direct, indirect, and cumulative impacts conducted in the Supplemental IAP/EIS is adequate.

[Response to 21.150]

The BLM maintains that the analysis of direct, indirect, and cumulative impacts conducted in the Supplemental IAP/EIS is adequate.

[Response to 21.151]

The Teshekpuk Lake Surface Protection Area, with its designation of no surface activity, is an integral part of Alternative A and is a factor in all analysis of impacts on surface resources for that alternative and the assessment of Alternative A in the cumulative impact analysis. It and/or Stipulation 31 are commonly mentioned in Chapter 4 discussion of Effectiveness of Stipulations. Chapter 2's description of Alternative A has been modified to note that leases in that part of the Teshekpuk Lake Surface Protection Area in which leasing is allowed, do not include rights to subsurface resources within the uppermost 500 feet.

[Response to 21.152]

In addition to Table 2-1, the alternatives are presented over multiple pages in Chapter 2, in Table 2-2 (encompassing approximately 70 pages), as well as in Appendices D, E, and F. The fact that more text is used to summarize Alternative D in Table 2-1 (and in the text in Chapter

2) reflects the greater complexity of the protective measures presented in that alternative.

[Response to 21.153]

The comparison of specific stipulations and ROPs both in Table 2-2 in Chapter 2 and in the sections entitled “Effectiveness of Stipulations” or “Effectiveness of Stipulations and Required Operating Procedures” in Chapter 4 is designed to identify the comparative effectiveness of specific protective measures. Comparisons of the overall impacts of the alternatives are provided through much of the other analysis in Chapter 4 and in Table 2-3.

[Response to 21.154]

The ANILCA 810 Evaluation used the Alternatives as proposed in Chapter 2 of the DSEIS. Page A-9 of the ANILCA 810 Evaluation discusses the impact of oil and gas leasing in the additional lands located around Teshekpuk Lake that would be made available under Alternative B; likewise, pg. A-12 discusses the impacts of making all lands available in the Northeast NPR-A under Alternative C; and page A-14 the impacts of making an additional 430,000 acres available under Alternative D.

[Response to 21.155]

Essential Fish Habitat (EFH) is a legal classification of habitat that only applies to Pacific salmon, as described by the National Marine Fisheries Service (NMFS). Maintaining or removing the Teshekpuk Lake Surface Protection Area does not change the EFH analysis because there is no Pacific salmon habitat within this area as it is defined by NMFS.

[Response to 21.156]

Appendix K discusses the methodology by which oil spill projections were derived. Resources and uses that could potentially be impacted by an oil spill, including those for whom the indicated areas are important, are addressed in the appropriate sections of Chapter 4.

[Response to 21.157]

The BLM in the Final IAP/EIS has clarified its intent regarding leasing under the lake. Rather than state that the deferral would be indefinite, the Final IAP/EIS states that the lands under Teshekpuk Lake and its islands would not be available for oil and gas leasing under the Preferred Alternative. Also a discussion of what is required to meet a different decision after the ROD has been signed is included in Chapter 1 in the subsection entitled, "Requirements for Further Analysis."

[Response to 21.158]

The text comparing the effectiveness of measures designed to protect the Pik Dunes (Stipulations 45 and K-8) has been modified.

[Response to 21.159]

The description of Alternative A in Chapter 2 has been modified to discuss the Colville River Management Plan. The plan is undergoing development by the BLM.

[Response to 21.160]

The decision in the Northwest NPR-A ROD to defer leasing in the Special Area was limited to the scope of the Northwest NPR-A IAP/EIS (see the Northwest NPR-A ROD, p.3). It did not apply to the Northeast NPR-A. A deferral within the Colville River Special Area is not contemplated as part of any of the alternatives in the Supplemental IAP/EIS. As indicated in the introduction of the "Description of the Alternatives" subsection in Chapter 2, however, the

BLM has discretion to withhold from any lease sale some of the acreage that a ROD determines to make available for leasing.

[Response to 21.161]

No permanent road across the Colville River and connecting to outside the planning area is proposed. The BLM considers such a road as speculative and does not analyze it in this Supplemental IAP/EIS. Under all of the alternatives a new NEPA document would be required to authorize a road that would cross the Colville River. If the road crossed onto lands managed by BLM, BLM would conduct or be a cooperating agency in the NEPA document.

[Response to 21.162]

The discussion of Alternative A in Chapter 2 has been modified to include reference to these elements of the 1998 decision. The impacts of the alternatives are addressed in Chapter 4. The BLM agrees that performance-based stipulations and ROPs may require closer monitoring of compliance and results than prescriptive stipulations.

[Response to 21.163]

Alternative A Stipulation 19 is presented in Table 2-2 (see Alternative A cell corresponding to ROP B-2), as is Alternative A Stipulation 45 (see Alternative A cell corresponding to Stipulation K-8). Table 2-2 has been modified to address the cited subsections of Stipulation 24 and the 1998 ROD has been added to the Final Supplemental IAP/EIS in a new appendix.

[Response to 21.164]

The BLM disagrees that deviations from the stipulations and ROPs have been substantially weakened or that the performance-based approach with its alternative procedures process would be less successful in meeting the objectives of protecting surface resources than the stipulation and exception process for Alternative A. For further information regarding this issue see the discussion of "Stipulations and Required Operating Procedures" in Chapter 2.

[Response to 21.165]

The text in Chapter 1 under "Requirements for Further Analysis" and in Chapter 2 under "Stipulations and Required Operating Procedures" has been modified to make it clear that the BLM is able to add additional terms and conditions at the permitting stage.

[Response to 21.166]

The cumulative analysis considers the decisions made in the 1998 ROD as part of the analysis of Alternative A.

[Response to 21.167]

The IAP/EIS fully explains the elements of the various alternatives. Table 2-1 is a summary of only some elements of the alternatives.

[Response to 21.168]

The definitions of both "Temporary Platform" and "Permanent Oil and Gas Facilities" have been modified in Appendix F to clarify that a "temporary platform" used for production, as opposed to exploration, would be considered a "permanent oil and gas facility" and be subject to the restrictions on placement of such structures.

[Response to 21.169]

Prior to the signing of the 1998 NE NPR-A IAP/EIS ROD, little science existed to guide decisions regarding winter water withdrawals from lakes. Since then, a number of investigations in Arctic Alaska and Canada were initiated to examine water levels and water chemistry in relation to pumping activities. In the existing areas of oil exploration and development, pumped lakes have recharged in the spring to prior-year levels (Streever et al. 2001; URS 2001; Baker 2002; Baker 2007). This includes lakes where ice chips were utilized in addition to permitted free-water volumes (Baker 2007). Although there is some indication that winter water withdrawals can reduce the amount of dissolved oxygen available for fish (Cott et al. 2006), natural lake properties in the Arctic have been the best predictors of oxygen depletion during the winter, rather than pumping (Chambers et al. 2006). There have been no measurable changes in dissolved oxygen attributed to pumping at current levels of withdrawal on the North Slope (Hinzman et al. 2006). The current levels permitted by Alaska Department of Natural Resources Office of Habitat Management and Permitting are based on the general guideline of 30% of under-ice water volume below five feet for lakes with only “tolerant” fish (ninespine stickleback, Alaska blackfish) and 15% of under-ice volume below seven feet for lakes with “sensitive” fish (species other than stickleback and blackfish). While these regulatory thresholds were originally established somewhat arbitrarily, they were selected as being conservative in an effort to maintain protection for fish. Since the implementation of these guidelines, all available scientific information supports the effectiveness of these management standards in minimizing impacts to fish and their habitat. Finally, note that the maximum water withdrawal amount for ROP B-2c has been changed in the Final IAP/EIS from 100% to 35%.

[Response to 21.170]

The BLM knows of only one case in which fish have been frozen into ice roads. In March of 2006 there was a "stickleback incident" in which fish were accidentally pumped out of a lake and incorporated into an ice road. The water came from lake L9806, which is about 2 miles east of NPR-A and was believed not to contain any fish, and therefore not within BLM's jurisdiction. ROP B-2(g) in Alternatives B, C, and D requires screens be used for water withdrawals from both fish-bearing and non-fish-bearing waters.

[Response to 21.171]

Analysis of the impacts of the use of water for ice pads, ice roads, and ice airstrips on tundra habitat and hydrology is included in discussions of impacts to multiple resources in Chapter 4, including discussions of impacts to water resources, vegetation, wetlands and floodplains, and birds.

[Response to 21.172]

The suggested additional language reflects current standard procedures for the BLM in determining when to allow tundra travel under performance-based measures in the Northwest NPR-A, and such methods would be utilized in the Northeast NPR-A. Adding language that describes how BLM does its work, rather than the requirements of lessees/permittees is superfluous.

[Response to 21.173]

The Supplemental IAP/EIS addresses questions regarding the standards to be met by lessees at abandonment and the financial questions related to abandonment in Chapter 4 within the subsection entitled "Basic Assumptions for Environmental Consequences Assessment" under the heading "Abandonment."

[Response to 21.174]

There are no known proposals to develop roads linking communities within NPR-A, and, consequently, analysis of such roads is inappropriate for this IAP/EIS. The Final IAP/EIS has included a new subsection under "Speculative Development" in the Cumulative Impact analysis section of Chapter 4 to address this issue.

[Response to 21.175]

The BLM, on its own or in coordination with other Federal, state, and NSB agencies, industry, and academia (commonly, though not exclusively, through the North Slope Science Initiative), gathers and assesses baseline data. In addition, the IAP/EIS contains many requirements for monitoring of areas of potential development prior to any oil and gas construction. The Northeast NPR-A Supplemental ROD will adopt and summarize a monitoring and enforcement program where applicable for any mitigation.

[Response to 21.176]

Given that virtually no development has occurred within the 4.6 million acres of the planning area and that oil and gas is not ubiquitous in the planning area, it is unnecessary to designate areas as benchmarks to compare the impacts of oil and gas development with other factors.

[Response to 21.177]

No "finding" or determination (as it is usually referred to) was made pursuant to ANILCA Section 810(a)(3)(c) in the Draft Supplemental IAP/EIS. That determination, in accordance with regulations, has been made in this Final Supplemental IAP/EIS in Appendix A.

[Response to 21.178]

The findings presented in the ANILCA 810 evaluation are based on the impact analyses conducted by various specialists on: 1) those resources that are important for subsistence purposes; and 2) on subsistence uses of the resources. This information is located in Chapter 4 of the Supplemental IAP/EIS and are sufficient to develop informed ANILCA 810 findings.

[Response to 21.179]

The omission of Wainwright as a potentially impacted community within the finding section for the cumulative case was an oversight and is corrected in the Final. Wainwright is included in Section A.2.5.1 Evaluation of the Effect of Such Use, Occupancy, and Disposition on Subsistence Uses and Needs, and an ANILCA 810 Hearing was held in the community on September 26, 2007.

[Response to 21.180]

The BLM did consider the impacts of each alternative on subsistence users across the North Slope and in other parts of Alaska. It is this consideration that you are referencing here.

[Response to 21.181]

The ANILCA Section 810 factors under which the BLM determines whether a significant restriction to subsistence uses will result from an alternative is discussed in subsection A.1 of Appendix A. These factors are the result of case law (Kunaknana et al. vs. Watt 1983, upheld in Kunaknana v. Clark 9th Cir. 1984) and are BLM Policy (BLM Instruction Memorandum No. AK 86-350). The BLM recognizes the fact that subsistence is "about more than diet" (see Chapter 3 sections on Subsistence and Sociocultural Systems, Cultural Values), and discusses the impact of the various alternatives to the importance of subsistence to the Iñupiat in both the Sociocultural Systems and Human Health sections of Chapter 4 in the SEIS.

[Response to 21.182]

At issue with regard to a Section 810 finding is whether the identified impacts, when taken into consideration with proposed mitigation, significantly restrict subsistence use. The BLM firmly believes that while there will be some adverse effects, that these effects do not meet the threshold of significantly restricting subsistence use, which, following BLM policy and derived from case law (Kunaknana et al. vs. Watt 1983, upheld in Kunaknana v. Clark 9th Cir. 1984) is a substantial reduction in the opportunity to continue subsistence uses of renewable resources. Substantial reductions in opportunity have been defined as: reduction in the abundance of or a major redistribution of resources; substantial interference with access; or major increases in the use of those resources by non-subsistence users (BLM Instruction Memorandum No. AK 86-350, pp.1-4; Appendix 8).

COMMUNICATION NUMBER 22

From Audubon Alaska

Stan Senner, Executive Director, speaker at Anchorage Public Meeting October 1, 2007

My name is Stan Senner, I am the Executive Director of Audubon Alaska. Audubon is a national conservation organization, we've had an office here in Alaska since 1977, and our organization has been involved with issues in the National Petroleum Reserve since the 70's and my personal involvement extends back to that time when it was still PET-4 and the Navy was still managing it.

Our involvement also goes back to the days of passage of the Alaska National Interest Lands Conservation Act when the House of Representatives twice passed a bill that would have made the whole of NPRA a national wildlife refuge, although one opened to oil and gas leasing. More recently Audubon was very involved in the development of the Record of Decision in 1998, and Audubon chose -- liked that compromise of protecting the area primarily north and east of the lake, Audubon chose not to sue over that lease sale that ultimately occurred to the south of the lake because we thought it was a good balance and Audubon's view was that we're not opposed to some oil and gas development in the NPRA, provided the most special and important of its wildlife habitats are protected.

Since 1998 Audubon also engaged in a detailed assessment of resource values in the area and the EIS, of course, talks at some length or discusses at some length, the migratory birds nesting in the area, molting geese, caribou calving, and insect relief and also subsistence values. Among the current options, Alternative A, which is basically the no action alternative most closely represents Audubon's view. We're not interested in seeing any further intrusion into what is now the Teshekpuk Lake surface protection area including the no lease zone, again, going back to the 1998 ROD. We think the surface values of this area and the subsistence activities are simply too valuable to risk with any kind of oil and gas activity and this is especially true in the context of a changing climate which is very much evident in NRPA. Warming temperatures in the permafrost, anyone who's visited the coastline has seen the erosion there, so the effects of a warming climate are manifest and the wildlife are going to have to adapt to that and they don't need the double whammie of added oil and gas activity on top of that.

In terms of other alternatives, the -- I think it's Alternative D which divides the area north and east of the lake into seven lease tracts, we think ultimately results in too much fragmentation of an area that we think is core wildlife habitat and should be left unfragmented. Alternative B, which takes I think, six or so townships off the table, simply is too small an area to protect. Audubon isn't necessarily opposed to additional lease activity south of the lake and that has been our view going back to 1998 and it continues to be our view.

We do think that any such activity south of the lake should involve careful new assessment of any wildlife hot spots in that area and we know for example there's an area immediately to the south and west of the lake that's particularly important for nesting migratory birds, including yellow-billed loons. And when we submit more detailed written comments on this, we'll be pointing out some of those areas.

We also think that any additional lease activity south of the lake and any changes in required operating procedures and stipulations and the like does depend on there being an adequate cumulative effects analysis and a new biological opinion that takes into account effects on threatened eiders, spectacled and Steller's eiders, in both Northeast and Northwest NPRA. We're still analyzing the cumulative effects part of the draft environmental statement, our sense is

that the analysis presented in the draft does not live up to our standard of what needs to be done in an appropriate analysis.

[22.001] Lastly, before I finish, we also request that if there is a new Record of Decision with new round of activity coming south of the lake, that BLM reinstate the research and monitoring advisory team which was set up under the 1998 Record of Decision and BLM chose in about 2002 of 3 to dissolve that RMT in contradiction to their own Record of Decision and that remains unfulfilled, there's every reason to reinstate that group. The discussions of the North Slope Science Initiative are not a replacement for having an RMT that focuses specifically on monitoring and research activities needed for careful development in Northeast NPRA. So, thank you very much.

[Response to 22.001]

The BLM is responsible for ensuring that there is appropriate scientific baseline data and analysis to responsibly manage lands within the planning area. It continually assesses its need for such data and analysis. For further discussion of BLM's research and monitoring activities and why the agency considers the RMT unnecessary to reinstate, please see Section 4.2.3 entitled, "Research and Monitoring Consultation and Coordination."

COMMUNICATION NUMBER 23
From Alaska Shorebird Group
Audrey Taylor, Chair

Audrey R. Taylor
Chairperson
Alaska Shorebird Group
211 Irving I, UAF
Fairbanks, AK 99775

6 November 2007

Northeast NPR-A Supplemental IAP/EIS
ENSR Project Office
1835 South Bragaw Street, Suite 490
Anchorage, AK 99508
Fax: 888-907-3677

Dear ENSR Project Office:

The stated goals of the Alaska Shorebird Group (ASG), established in 1995, are to raise the public awareness of shorebirds; to promote research, monitoring, management, conservation and education relevant to shorebirds in Alaska; to provide a forum for the exchange of information about shorebirds among biologists, managers, and the public; and to promote the range-wide management and conservation of shorebirds, which spend part of their lifecycle in Alaska. ASG members include representatives from federal and state agencies, non-government organizations, academia, and the general public.

Because the potential for oil and gas development to impact shorebirds is an issue of concern to our membership, the Executive Committee of the ASG recently convened to respond to the August 2007 Draft Supplemental Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) for the Northeast National Petroleum Reserve-Alaska (NPR-A). The eight-member executive committee unanimously agreed to submit the following information, which includes new information on the importance of the Northeast NPR-A (particularly the Teshekpuk Lake Special Area) to shorebirds, concerns for particular species, and likely impacts to shorebirds from development.

Importance of Areas to Shorebirds

Chapter III (pages 3-60 to 3-64) provides a fairly comprehensive overview of shorebirds that reside in northern Alaska. A great deal of general information is provided on breeding shorebirds and to a lesser extent on post-breeding shorebirds. The authors of the IAP/EIS are correct in pointing out that the North Slope provides some (if not the most) productive shorebird habitat in northern Alaska, and that shorebirds occur in greater densities than any other bird group. Missing from this section is a recent paper by Johnson et al. (Arctic, 60:277-293, 2007) that indicates nesting individuals of seven shorebird species were present on significantly more plots in the western part of the Arctic Coastal Plain (Icy Cape to Colville River) than in the eastern portion (Colville River to Aichilik River). These species included the Bar-tailed Godwit, Semipalmated Sandpiper, Pectoral Sandpiper, Dunlin, Long-billed Dowitcher, Red Phalarope, and Western Sandpiper. Only one species, the American Golden Plover, was more prevalent in the eastern than the western portion. Similarly, survey plots supported a significantly higher average number of species in the west (5.0 ± 0.37) than in the east (3.9 ± 0.41) part of the Arctic

Coastal Plain. Within NPR-A, the highest species richness occurred at Admiralty Bay, the Alaktak River, the Ikpiuk River and delta, the area surrounding Teshekpuk Lake, and the Fish Creek delta (Johnson et al. 2007).

Some of the highest densities of breeding shorebirds in all of North America occur within the NPR-A, exceeding 125 pairs per km² in many cases (see citations in the IAP/EIS, pages 3-61 to 3-64). As the authors of the IAP/EIS indicate, there may be as many as 6 million shorebirds that spend the summer in the NPR-A (Cotter and Andres 2000). **[23.001]** Additional information that should be added to the description of shorebirds as part of the Affected Environment include results of a preliminary analysis combining existing shorebird density estimates (with detection probability calculated from double-sampling efforts) and the Ducks Unlimited land cover classification in a regression model to estimate shorebird density over a larger area. The results of this model indicate that between 356,000 and 455,000 (95% Confidence Intervals) shorebirds breed on the eastern portion of the NPR-A (B. Andres, unpubl. data).

[23.002] In regards to postbreeding shorebirds (see page 3-61, 2nd paragraph): the IAP/EIS should point out that successful fat accumulation prior to fall migration is essential for shorebirds (and other waterbirds) to successfully complete their long-distance migrations to wintering grounds (Alerstam and Lindström 1990, Bird Migration: Physiology and Ecophysiology, p. 331-351; Lindström, *Ornis Scandinavica* 22:12-19, 1991). For shorebirds breeding in Northeast NPR-A, much of this pre-migratory fattening is likely accomplished in coastal areas along the Beaufort Sea. Disturbance or habitat loss along the Northeast NPR-A coastline could result in population-level consequences to shorebirds if an oil spill were to occur along one of the river crossings during peak staging (followed by subsequent oil flowing to the coast), or food availability is diminished to the point where low fat accumulation and deposition rates preclude successful migration. Under a scenario of reduced fat accumulation rates, some population segments could either initiate migration and perish en route, or be forced to stopover in marginal habitat, thus compromising further acquisition of energy reserves and successful completion of migration. Shorebirds could also fail to depart the North Slope at all, thereby submitting themselves to the extremes of an Arctic winter.

[23.003] There are now new estimates available for how long individual shorebirds remain on staging areas before departing (average 6.5 days for all species combined, A. Taylor, unpubl. data). These revised figures mean that the prior estimate of 11,000 to 60,000 shorebirds present on the coastline of the Northeast NPR-A was much too low and should be increased to upwards of 150,000 shorebirds staging or migrating through the Northeast NPR-A between mid-July and early September (A. Taylor, unpubl. data). Most of these individuals are Semipalmated Sandpipers, Red Phalaropes, Red-necked Phalaropes, and Dunlin. In particular, Pogik Bay (near Pitt Point, in the Teshekpuk Lake Special Area) attracts large concentrations of staging shorebirds, with single-day counts of just Dunlin estimated at approximately 15,000 individuals. Radio telemetry data indicate that postbreeding shorebirds use multiple sites across the North Slope while staging or during early migration. Most notably, Semipalmated Sandpipers equipped with radios along the Chukchi and western Beaufort Seas tend to move eastward along the Beaufort Coast toward the Arctic National Wildlife Refuge, thus passing through and potentially utilizing foraging habitat in NE NPR-A (A. Taylor, unpubl. data). These data imply that shorebirds are highly mobile across the North Slope, and that during staging and migration, individuals from multiple breeding areas are likely to congregate at coastal areas near Teshekpuk Lake.

Based on these recent data pertaining to the abundance and mobility of postbreeding shorebirds using coastal areas in the Northeast NPR-A, we feel that it is important for all alternatives considered in the IAP/EIS to protect as much as possible the integrity of the Coastal Area

special area (described in the IAP/EIS as the land area within of a mile of the Beaufort Sea).

[23.004] Currently, alternatives B, C, and D of the draft IAP/EIS only prevent permanent facilities from being sited within this area TO THE EXTENT PRACTICABLE. This is a change from the prior EIS and it is unclear what may constitute impracticable reasons to exclude permanent facilities. The ASG believes that the Coastal Area is of particular importance to staging shorebirds, which are likely to be negatively impacted by direct effects, such as exposure to oil during spills, the construction of pump stations, roads, pipelines, shipping terminals, etc., or by indirect effects, such as dust shadows along roads or contamination of foraging habitat by oil residue. The original stipulation of disallowance of any permanent facilities for any reason is a preferred option for protection of shorebirds, other waterbirds, and their habitats.

Concerns for Particular Species

[23.005] The authors of the IAP/EIS indicate that several shorebird species are either highly imperiled or are species of high concern in various federal and state plans. Typically these species are listed because their populations are small or declining, their distributions are limited, or threats to individuals and/or habitats are high (Donaldson et al. 2001, U.S. Shorebird Conservation Plan 2004). For at least seven species that breed in the Northeast NPR-A, one or more of these issues may be a factor affecting the populations status. The authors of the IAP/EIS do not, however, indicate why an individual species is included on these lists. Including such information is critical for assessing threats from development. For example, a species that has a limited distribution (and therefore most likely has stringent habitat requirements) merits special attention so that impacts to this species habitat are minimized wherever the species occurs. For an apparently abundant and widespread species undergoing a documented population decline, mitigation measures may need to encompass more than just habitat protection (e.g., predator control).

As an example, the authors of the IAP/EIS indicate that the Buff-breasted Sandpiper is a BLM Alaska Special Status Species, and that it is listed as an imperiled species in the U.S. Shorebird Conservation Plan (U.S. Shorebird Conservation Plan 2004) and of high conservation concern by Partners in Flight and in the Canadian Shorebird Conservation Plan (Donaldson et al. 2001 -- not Brown et al. 2001 as listed on page 3-63). A lengthy description of the species natural history is provided in the IAP/EIS, but information on why the species has special listing status and how these listing factors may impact the species should also be included. The species is listed because of its small and likely declining population, and threats faced by the species during migration. Not included as a reason for listing, but equally important, is the fact that the species occurs sporadically across years (i.e., is a nomadic species). This last factor makes the species difficult to survey, requiring multiple year studies conducted during the few short weeks when the species is observable at lek sites. In addition, this species could be especially vulnerable to oil and gas development because its preferred habitats are the drier areas that would be most suitable for placement of facilities and roads. Development could displace Buff-breasted Sandpipers and other upland species from this limited habitat (Lanctot and Laredo, Birds of North America, No. 91, 1994). We suggest that more detailed information be provided on all shorebird species that are of high conservation concern so that potential impacts of oil and gas development can be better ascertained.

How are shorebirds likely to be impacted by oil and gas development?

[23.006] There are several interacting factors that make predicting how shorebirds will be impacted by oil and gas development challenging. Much of the placement and extent of oil and gas industry infrastructure is yet unplanned, and despite efforts to estimate the footprint of

development, it remains uncertain. There are also changes occurring within the landscape on the North Slope due to climate change (e.g., coastal erosion, thermokarsting and draining of lakes with permafrost melting). In addition, species vary in their ability to withstand disturbance, and population sizes of individual species will likely change through time due to factors occurring at other places in their annual cycle. It is difficult to understand and predict how these factors will interact, but to simply indicate that some species are likely to benefit and others decline is highly one-dimensional and potentially grossly inaccurate (see page 4-625).

[23.007] Much of the complexity inherent in addressing interacting effects is additionally summed up in the IAP/EIS as speculative, and the document advocates that post-EIS adaptive management be used to meet desired outcomes (see page 4-626). We believe this viewpoint ignores the fact that certain factors, such as climate change, do have predictable outcomes. For example, it is quite clear from recent history that coastal erosion will increase as the Arctic Ocean remains ice free longer (Mars and Houseknecht 2007). The area north of Teshekpuk Lake in particular is predicted to lose considerable coastline in the coming years (D. Douglas, pers. comm.). This erosion leads to breaching of thermokarst lakes and subsequent draining of the lakes followed by marine flooding, as well as erosion of river deltas. While it is unclear how this erosion will affect the amount of habitat available to postbreeding shorebirds, it will make it impossible to maintain a no development stipulation within a mile buffer along the coast when that coast is constantly eroding inland. Any efforts (e.g., retaining walls) to protect developments that become inundated with marine water in the future due to coastal erosion (e.g., pre-1970s capped wells off the coast) will likely significantly and negatively influence shorebirds. **[23.007 cont'd]** Based on these very predictable events, we expect that the synergistic effects of climate change and oil and gas development be considered when determining how shorebirds and other species will be affected. To consider separately the potential impacts of climate change and oil and gas development is irresponsible.

[23.008] Although it is admittedly difficult to determine how shorebirds respond to synergistic changes in the environment (see above paragraph), it is still important to indicate the range of possible effect sizes given what is known about shorebird biology/ecology and the scenarios for development under each of the IAP/EISs alternatives. For example, the authors of the IAP/EIS estimate that 35,000 acres of land on the North Slope have already been directly lost to gravel pads, gravel roads, and gravel mines, and indirectly to upslope water impoundment and thermokarst erosion (see page 4-697). Given that much of this area was likely used by shorebirds for nesting, an estimate of the number of birds that were disturbed could be determined using the average territory size of a particular species. Based on field studies in the Olak area (Liebezeit and Zack 2006), an average territory for a Semipalmated Sandpiper pair might be 10 acres (assuming 10.6 nests/km²). If this entire area was inhabited by this species, an estimated 1,500 pairs of Semipalmated Sandpipers would be displaced were the area to be converted to oilfield conditions. Of course, not all of this area is likely suitable for this species, nor would all individuals likely be displaced, but calculating rough numbers like this clearly provides a more quantifiable cumulative impact. A simulation could easily be conducted based on species composition and territory size found on intensive study sites in the Northeast NPR-A that could more clearly show the number of breeding birds of all species that might be affected under each alternative.

[23.009] While we chose to illustrate the IAP/EIS lack of quantification of impacts to shorebirds by describing the number of birds likely to be affected by habitat loss, the same could be said for other types of impacts, such as disturbance, increased predation, mortality resulting from collisions, or exposure to contaminants. More study is needed to fully understand the potential

for impacts on the species, and every effort should be made to estimate the potential damages to shorebirds that could result.

[23.010] Authors of the IAP/EIS indicate that adaptive (or performance-based) management be used to evaluate and minimize impacts from oil and gas development to species, including shorebirds. For this to be effective, adequate measures of wildlife response to actions must be developed and implemented. To date, such measures have not been fully developed nor tested. Accordingly, we recommend against using unproven performance-based mitigation measures as opposed to the prior 1998 ROD protections for the Northeast NPR-A. We believe a more appropriate approach would be to test the performance-based measures in areas currently open for development, rather than in the biologically important Northeast NPR-A. Should this approach prove promising, performance-based management could be integrated at a later date.

[23.011] Finally, we read in many places that various activities may impact a small number of birds but are unlikely to have an effect at the population level. We feel the authors of the IAP/EIS use such statements too freely and without support. While we agree that some populations may be resilient to disturbance, it seems likely that other populations may not be. Blanket statements of this sort should be removed without hard evidence to support such claims. **[23.012]** Further, BLM should make every effort to determine the range of possible effect sizes for activities that could result in shorebird displacement or mortality, as well as determine thresholds for when individual-level effects are large enough to constitute population-level impacts. Accordingly, we support the concept of phased leasing, whereby leases in the Northeast NPR-A Planning Area are made available to private industry over a period of time rather than all at once. A program of phased leasing would enable a) the collection of additional baseline data on shorebird populations and habitat requirements that could aid in quantitative estimates of effect size (i.e., the number of birds at risk of habitat loss or mortality) and whether this constitutes a population-level effect, b) development of mitigating measures that are based on real estimates of effect sizes and thresholds, and c) opportunities for adaptive management of industry activity based on quasi-experimental evidence comparing new development in Northeast NPR-A to control, non-developed areas.

Thank you very much for the opportunity to present our recommendations. If you have need for expertise about shorebirds in any future EIS, we would be very pleased to assist you. My e-mail address is ftart@uaf.edu. The ASG secretary is Joe Liebezeit (jliebezeit@wcs.org) and our staff support person is the U.S. Fish and Wildlife Services Regional Coordinator for shorebirds, Rick Lanctot (richard_lanctot@fws.gov). Questions for the ASG about shorebird conservation in Alaska can be directed to any one of us. We look forward to continued interactions with the Bureau of Land Management in the future.

Sincerely,

Audrey R. Taylor, PhD Candidate, UAF
Chair, Alaska Shorebird Group

[Response to 23.001]

Data has been received from Brad Andres and has been incorporated into the SEIS.

[Response to 23.002]

These comments have been incorporated into the final document to the extent practicable.

[Response to 23.003]

The new data you have provided has been incorporated into the final document.

[Response to 23.004]

The coastal protection measure setback is a protection that was not provided in the No Action alternative. In some cases the objectives of this stipulation or other resource protection objectives may best be met by permitting placement of some permanent structures within the coastal setback area. This decision is best made in the context of review of a specific development proposal and would be subject to environmental analysis at that time.

[Response to 23.005]

The BLM has presented Information regarding densities and distributions of shorebirds in Section 3.3.6.4 of the Supplemental IAP/EIS. Due to the diversity of avian species present in the NE NPR- A BLM has chosen to describe potential impacts organized by the type of potential impact rather than by individual species. On a project specific level BLM will be able to better assess potential impacts to shorebirds using life history trait information and will be better able to provide site specific protections for the species.

[Response to 23.006]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project specific scale appropriate for exploration and development a more quantitative approach such as you suggest will be conducted at that time.

[Response to 23.007]

At this point in time the potential components of the systems and organisms that may be affected by climate change are being determined. However, how the potential effects will impact these systems and organisms are unknown thus the synergistic effects of climate change and oil and gas development on shorebirds can not be determined.

[Response to 23.008]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project specific scale appropriate for exploration and development a more quantitative approach such as you suggest will be conducted.

[Response to 23.009]

The BLM has properly described the habitat requirements for shorebirds in the avian section of Chapter 3 in the SEIS. Due to the diversity of avian species present in the NE NPR-A BLM has chosen to describe potential impacts organized by the type of potential impact rather than by individual species. On a project specific level BLM will be able to better assess potential impacts to shorebirds and will be better able to provide site specific protections for the species.

[Response to 23.010]

Performance-based stipulations and ROPs will allow the BLM to measure wildlife responses to development actions and adjust mitigation accordingly.

[Response to 23.011]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project-specific scale appropriate for exploration and development a more quantitative approach such as you suggest will be conducted at that time.

[Response to 23.012]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project specific scale appropriate for exploration and development a more quantitative approach such as you suggest will be conducted.

COMMUNICATION NUMBER 24

From Alaska Wilderness League

Betsy Beardsley, Environmental Justice Program, speaker at Nuiqsut Public Meeting October 11, 2007

Hi. My name is Betsy Beardsley. I'm with the Alaska Wilderness League in Anchorage, Alaska. And the Alaska Wilderness League is a nonprofit conservation organization. My program that I work on is environmental justice. And environmental justice is the right to clean air, clean water, community health, culture, and well-being. Alaska Wilderness League was one of the organizations that challenged the Department of the Interior decision to change the '98 plan and allow leasing in the Teshekpuk Lake area. And there were about 200,000 people nationwide that actually wrote in comments during the last planning process to protect the areas around Teshekpuk Lake from development.

I want to thank everybody for allowing me to be here today, and especially the Elders. It's really an honor to be able to be here and -- and speak and -- and see the wonderful area where you live. So I do really, again, appreciate the opportunity to speak here tonight. I was able to speak in Anchorage, just providing comments as an individual. So these are actually on the record. These are the opinions of Alaska Wilderness League.

And we believe that the Northeast NPR-A, in particular the region around Teshekpuk Lake, is a critical area for wildlife and subsistence activities. Development near Teshekpuk Lake would disturb the tens of thousands of vulnerable molting geese, pregnant caribou cows, newborn caribou calves. It could impact -- threatened species like the spectacled and Steller's eiders, as well as yellow-billed loons, and many other important species of wildlife, such as the polar bears that people have mentioned tonight.

Due to the cumulative effects of 30 years of oil and gas activity on the North Slope, changes the Arctic has seen from global warming, growing threats of offshore oil and gas development, it is critical that special places like the Teshekpuk Lake area be set aside from development.

[24.001] 14 We -- we're happy to see the additions to this Supplemental EIS on health impact studies; however, we believe that much further study on impacts to health in the communities where development is being proposed or is ongoing should be done before any new development is allowed in the Northeast NPR-A area. I've had the opportunity to visit many people in communities on the North Slope, and I -- it is my understanding that the people living near Nuiqsut have experienced the greatest impacts to health and well-being as you live alongside development. And until we have a better understanding of health impacts to the communities like Nuiqsut, how subsistence has suffered, or how to wrongfully adapt, then we must not allow any further development in the Northeast NPR-A.

And also in my discussions with people around Barrow, and all the people that live in Barrow and subsist in the area around Teshekpuk Lake, it is my understanding that the majority of those people do not want any changes to the current management plan, or they do not want to see any new development in the Teshekpuk Lake region.

So because of the dire consequences the development can pose on the wildlife, the caribou, all of the different living species, and the impacts to subsistence, the -- the cumulative effects from the years of ongoing oil and gas activity, and now new threats from global warming and offshore oil and gas development, I request that you take the no-action alternative. We need to maintain the protections and stipulations that are in place under the '98 plan that so many different groups worked so hard to maintain. In particular, the people living here in Nuiqsut.

And in closing, I would ask that the BLM and the Department of the Interior take this opportunity to really listen to the people here, and all the communities that have spoken, all the different groups, and consider adopting permanent measures to protect the key areas like the Teshekpuk Lake area, the subsistence areas in the Northeast NPR-A, for permanent protection from any future oil and gas leasing and development. Thank you.

[Response to 24.001]

The BLM has utilized the best available data and methods to evaluate potential impacts to public health in this Draft IAP/EIS. The BLM has outlined potential new mitigation measures that would require further baseline data collection, health impact analysis, and public health monitoring measures for any development in the planning area. The BLM considers the analysis it has conducted to be sufficient for this IAP/EIS.

COMMUNICATION NUMBER 25
From Center for Biological Diversity
Miyoko Sakashita, Staff Attorney, Oceans Program

November 6, 2007

Jim Ducker
Bureau of Land Management
c/o Northeast NPR-A Supplemental IAP/EIS Comments
ENSR Project Office
1835 South Bragaw Street, Suite 490
Anchorage, AK 99508

Fax: 888-907-3677

Re: Northeast NPR-A Supplemental IAP/EIS Comments

Thank you for the opportunity to comment on the Bureau of Land Management's ("BLM") Supplemental Environmental Impact Statement ("SEIS") regarding the Northeast NPR-A. These comments are submitted on behalf of the Center for Biological Diversity. While we believe that no lease sales should be offered anywhere in the NPR-A, in the event BLM proceeds with any further lease sales in the Northeast NPR-A, the environmental review for the sales must be thorough, and include an analysis of global warming impacts, alternatives to reduce greenhouse gas emissions, impacts on endangered, threatened and sensitive species such as the polar bear, spectacled and Steller's eider and yellow-billed loon, and mitigation measures to reduce all such impacts. None of the alternatives considered in the SEIS meet all of these requirements. Moreover, the analysis contained in the SEIS is grossly inadequate as a matter of law. It should be withdrawn, rewritten, and recirculated prior to any approval.

[25.001, 002, 003, 004, 005, 006, 007, 008] Specifically, we believe the SEIS is fatally flawed because it failed to adequately disclose, analyze, and mitigate, inter alia, the following:

[25.001 cont'd] - The greenhouse gas emissions from the exploration, development, production, transportation, and combustion of the oil and gas ultimately produced as a result of the lease sales under each alternative. Such analysis must include both CO₂ and non-CO₂ emissions (e.g. black carbon, methane);

- **[25.002 cont'd]** The environmental, societal, social, economic, and health consequences of the greenhouse gas emissions and consequent warming associated with the lease sales under each alternative;

[25.003 cont'd] - Global warming and ocean acidification, both as cumulative impacts of the lease sales, and as part of the environmental baseline;

- **[25.004 cont'd]** The rapidly changing Arctic, both as the direct affected environment of the lease sales, and as an environmental consequence of the greenhouse emissions of the lease sales;

[25.005 cont'd] - The sensitive species and habitats affected by the lease sales, including the polar bear, bowhead whale, various ice seal, and other marine mammals, seabirds, fish, invertebrates, as well as terrestrial wildlife;

[25.006 cont'd] - The legal context of the lease sales, including compliance with domestic law (NEPA, ESA, MBTA) and international law (International Agreement for the Conservation of Polar Bears, United Nations Framework Convention on Climate Change;

[25.007 cont'd] - A range of reasonable alternatives, including an alternative that improves protection of the NE NPR-A by, inter alia, prohibiting any further leasing in the area;

[25.008 cont'd] - Alternatives to the proposed action, including an alternative that is consistent with the call put out by leading climate scientists and incorporated in several legislative proposals, to reduce U.S. greenhouse gas emissions by 80% by 2050;

- All necessary mitigation measures to reduce the direct and indirect impacts of the proposed action.

Among the alternatives discussed in the SEIS, Alternative A, the "no action" alternative is the environmentally preferable alternative as it leaves the mitigation measures from the 1998 ROD in place. However, we cannot support this or any other of the alternatives in the SEIS as "no action" is not good enough, as it is not a true no action alternative given the substantial leasing and development allowed under the 1998 ROD. Given the measures contained in the 1998 ROD are themselves inadequate to avoid and mitigate the significant adverse impacts of oil and gas leasing and development on the land and resource of the NPR-A, and substantial cumulative impacts on the resources in the NPR-A have occurred since 1998, particularly with regard to global warming, BLM should have considered an alternative that prohibited any further leasing or development in the NE NPR-A, including in areas authorized for such leasing and development in the 1998 ROD. Further details on each of these issues, as well as background information on the impacts of global warming, the need to reduce greenhouse gas emissions, and the species directly and indirectly affected by the leasing authorized under the alternatives in the SEIS follows.¹

THE SEIS FAILS TO PROPERLY ANALYZE NUMEROUS SIGNIFICANT IMPACTS OF THE ACTION

A. The National Environmental Policy Act

The National Environmental Policy Act ("NEPA") is the "basic national charter for protection of the environment." 40 C.F.R. § 1500.1(a). Congress intended NEPA to "encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation." 42 U.S.C. § 4321.

To accomplish these goals, all federal agencies must assess the environmental impacts of their proposals before taking any action on them. The preparation of an Environmental Impact Statement ("EIS") lies at the heart of NEPA, and must "provide full and fair discussion" of impacts like greenhouse gas emissions and global warming implications and must "inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize" these impacts. 40 C.F.R. § 1502.1.

The purpose of the NEPA review process is two-fold: "First, it places upon [the action] agency the obligation to consider every significant aspect of the environmental impact of a proposed action. Second, it ensures that the agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process." *Kern v. United States Bureau of Land Management*, 284 F.3d 1062, 1066 (9th Cir. 2002). See also *Columbia Basin Protection Ass'n v.*

Schlesinger, 643 F.2d 585, 592 (9th Cir. 1981) ("[T]he preparation of an EIS ensures that other officials, Congress, and the public can evaluate the environmental consequences independently.").

These dual objectives require that environmental information be disseminated "early enough so that it can serve practically as an important contribution to the decisionmaking and will not be used to rationalize or justify decisions already made." 40 C.F.R. § 1502.5. See also *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 371 (1989) ("the broad dissemination mandated by NEPA permits the public and other government agencies to react to the effects of a proposed action at a meaningful time"); *Metcalf v. Daley*, 214 F. 3d 1135, 1143-44 (9th Cir. 2000). Ultimately, an EIS satisfies NEPA only if "its form, content, and preparation substantially (1) provide decision-makers with an environmental disclosure sufficiently detailed to aid in the substantive decision whether to proceed with the project in light of its environmental consequences, and (2) make available to the public, information of the proposed project's environmental impacts and encourage participation in the development of that information." *Trout Unlimited v. Morton*, 509 F.2d 1276, 1283 (9th Cir. 1974).

[25.009] Under NEPA, BLM must fully analyze the environmental impacts of oil and gas leasing in the NE NPR-A, including the greenhouse gas impacts of such leasing. The SEIS however, is grossly inadequate in this regard.

B. Global Warming Science and Impacts

Greenhouse gases trap heat within the earth's atmosphere and the science underlying global warming is well established. The earth absorbs heat in the form of radiation from the sun, which is then redistributed by atmospheric and oceanic circulations and also radiated back to space (Albritton et al. 2001). The earth's climate is the result of a state in which the amount of incoming and outgoing radiation is approximately in balance (Albritton et al. 2001). Changes in the earth's climate can be caused by any factor that alters the amount of radiation that reaches the earth or the amount that is lost back into space, or that alters the redistribution of energy within the atmosphere and between the atmosphere, land, and ocean (Albritton et al. 2001). A change in the net radiative energy available to the global earth-atmosphere system is called "radiative forcing" (Albritton et al. 2001). Positive radiative forcings tend to warm the earth's surface while negative radiative forcings tend to cool it (Albritton et al. 2001).

Radiative forcings are caused by both natural and anthropogenic factors (Albritton et al. 2001, ACIA 2004). The level of scientific understanding of these different forcings varies widely, and the forcings themselves and interactions between them are complex (Albritton et al. 2001). The primary cause of global warming, however, is society's production of massive amounts of "greenhouse gases" such as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and halocarbons that cause positive radiative forcings (Albritton et al. 2001, IPCC 2001, ACIA 2004). Greenhouse gases are, in fact, the radiative forcing mechanism that is currently best understood (Albritton et al. 2001).

Increasing concentrations of greenhouse gases in the earth's atmosphere causes the Enhanced Greenhouse Effect. As greenhouse gas concentrations increase, more heat reflected from the earth's surface is absorbed by these greenhouse gases and radiated back into the atmosphere and to the earth's surface. Increases in the concentrations of greenhouse gases slow the rate of heat loss back into space and warm the climate, much like the effect of a common garden greenhouse (Albritton et al. 2001, ACIA 2004). The higher the level of greenhouse gas concentrations, the larger the degree of warming experienced.

By the time of the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) in 2007, the atmospheric concentration of carbon dioxide had increased by 36% since 1750 to a level that has not been exceeded during the past 650,000 years and likely not during the past 20 million years (Denman et al. 2007). About three fourths of anthropogenic carbon dioxide emissions come from fossil fuel burning, and most of the remaining emissions are due to land-use changes, primarily deforestation (Denman et al. 2007). Carbon dioxide is considered the most important greenhouse gas overall because the volumes emitted dwarf those of all the other greenhouse gases combined. Not surprisingly, the rate of increase of total atmospheric carbon dioxide concentrations is speeding up as well. Carbon dioxide emissions accelerated during 2000 to 2005 (4.1 ± 0.1 GtC yr⁻¹) compared to emissions during the 1990s (3.2 ± 0.1 GtC yr⁻¹) (Denman et al. 2007). As of March 2006, the atmospheric carbon dioxide concentration was 381 ppm and rising at over 2 ppm per year (Shukman 2006).

The atmospheric concentration of methane, another important greenhouse gas, has increased by about 150% since 1750, continues to increase, and has not been exceeded during the past 650,000 years (Forster et al. 2007). About 60% of current methane emissions come from human activities, and there is also evidence that current carbon monoxide (CO) emissions are a cause of increasing methane concentrations (Denman et al. 2007). Over a 100-year period, methane will trap about 23 times more heat than an equal amount of carbon dioxide (Albritton et al. 2001).

The atmospheric concentration of nitrous oxide has increased by about 18% since 1750, continues to increase, and has not been exceeded during at least the last 2000 years (Forster et al. 2007). About half of the nitrous oxide emissions to the atmosphere come from human activities (Denman et al. 2007). Over a 100-year period, nitrous oxide will trap about 296 times more heat than an equal amount of carbon dioxide (Albritton et al. 2001).

The global average temperature has risen by approximately $0.74^{\circ}\text{C} \pm 0.18^{\circ}\text{C}$ ($1.33^{\circ}\text{F} \pm 0.32^{\circ}\text{F}$) during the past 100 years (1906-2005) (Trenberth et al. 2007). Important advances in the detection and attribution of global warming have demonstrated, beyond any legitimate scientific debate, that a significant portion of this observed warming is due to anthropogenic greenhouse gas emissions (Barnett et al. 2005, Trenberth et al. 2007).

Past anthropogenic greenhouse gas emissions have altered the energy balance of the earth by 0.85 ± 0.15 watts per square meter (Hansen et al. 2005). Due to the lag time in the climate system, this energy imbalance commits the earth to additional warming of 0.6°C (1°F) of warming that is already "in the pipeline," even absent additional greenhouse gas emissions (Hansen et al. 2005).

Because greenhouse gas emissions are continuing to increase, warming is projected to accelerate. Based on differing scenarios of future greenhouse gas emissions and the world's leading climate models, the IPCC has projected 1.1 to 6.4°C (2° - 11.5°F) of additional warming by the end of this century (Solomon et al. 2007). The higher the level of greenhouse gas emissions, the more the world will warm.

As scientific understanding of global warming has advanced, so too has the urgency of the warnings from scientists about the consequences of our greenhouse gas emissions. Scientists are now able to tell us, with a high degree of certainty, that additional warming of more than 1°C (1.8°F) above year 2000 levels will constitute "dangerous climate change," with particular reference to sea level rise and species extinction (Hansen et al. 2006, Hansen et al. 2007). Furthermore, scientists are able to tell us the atmospheric greenhouse gas level "ceiling" that must not be exceeded in order to prevent additional warming of more than 1°C (1.8°F) above

year 2000 levels (Hansen et al. 2006, Hansen et al. 2007). In turn, scientists can tell us the limitations that must be placed on greenhouse gas emissions to avoid exceeding this "ceiling" of approximately 450-475 ppm of carbon dioxide (Hansen et al. 2006)

In order to stay within the ceiling, emissions must follow the "alternative," rather than the "business as usual," greenhouse gas emissions scenario (Hansen 2006, Hansen et al. 2006, Hansen et al. 2007). In the business as usual scenario, carbon dioxide emissions continue to grow at about 2% per year, and other greenhouse gases such as methane and nitrous oxide also continue to increase. In the alternative scenario, by contrast, carbon dioxide emissions decline moderately between now and 2050, and much more steeply after 2050, so that atmospheric carbon dioxide never exceeds 475 parts per million. The alternative scenario would limit global warming to less than an additional 1° C in this century (Hansen et al. 2006, Hansen et al. 2007).

Since the year 2000, however, society has not followed the alternative scenario. Instead, carbon dioxide emissions have continued to increase by 2% per year since 2000 (Hansen et al. 2006, Hansen et al. 2007). This rate of increase itself appears to be increasing (Denman et al. 2007). If this growth continues for just ten more years, the 35% increase in carbon dioxide emissions between 2000 and 2015 will make it impractical if not impossible to achieve the alternative scenario (Hansen et al. 2006, Hansen et al. 2007). Moreover, the "tripwire" between keeping global warming to less than 1° C, as opposed to having a warming that approaches the range of 2-3° C, may depend upon a relatively small difference in anthropogenic greenhouse gas emissions (Hansen et al. 2006, Hansen et al. 2007). This is because warming of greater than 1° C may induce positive climate feedbacks, such as the release of large amounts of methane from thawing arctic permafrost, that will further amplify the warming (Hansen et al. 2006, Hansen et al. 2007).

Just ten more years on current greenhouse gas emissions trajectories will essentially commit us to climate disaster. Dr. James E. Hansen, Director of the NASA Goddard Institute for Space Studies, and NASA's top climate scientist, has stated: "In my opinion there is no significant doubt (probability > 99%) that . . . additional global warming of 2° C would push the earth beyond the tipping point and cause dramatic climate impacts including eventual sea level rise of at least several meters, extermination of a substantial fraction of the animal and plant species on the planet, and major regional climate disruptions" (Hansen 2006:30).

Studies that have used climate model projections to forecast species extinctions have predicted large species losses. Using a mid-range climate scenario, Thomas et al. (2004) predicted that 15-37% of species are already committed to extinction by 2050. Malcolm et al. (2006) estimated that 11-43% of endemic species in biodiversity hotspots will go extinct by the end of the century under a scenario of doubled carbon dioxide concentrations, which includes an average of 56,000 endemic plants and 3,700 endemic vertebrate species.

In order to avoid truly unacceptable consequences of global warming, we must stop the growth of greenhouse gas emissions, and, in relatively short order, begin reducing them. Achieving the reductions necessary to keep additional global warming between the years 2000-2100 within 1° C will be extremely challenging, and will require deep reductions in emissions from industrialized nations such as the United States. Until and unless, the United States has adopted and begun to implement an effective and rational plan to reduce such emissions, we believe there must be a moratorium on any additional oil and gas lease sales as such sales commit us to further greenhouse gas emissions.

C. Global Warming and the Arctic

Global warming is already having pronounced impacts on Alaska and the Arctic. In November 2004 the Arctic Climate Impact Assessment's ("ACIA's") report *Impacts of a Warming Arctic* was released. (Hassol et al. 2004). The ACIA is "a comprehensively researched, fully referenced, and independently reviewed evaluation of arctic climate change and its impacts for the region and for the world. It has involved an international effort by hundreds of scientists over four years, and also includes the special knowledge of indigenous people." The ACIA report concludes that greenhouse gas driven climate changes "are being experienced particularly intensely in the Arctic. Arctic average temperature has risen at almost twice the rate as the rest of the world in the past few decades. Widespread melting of glaciers and sea ice and rising permafrost temperatures present additional evidence of strong arctic warming." Significantly, "acceleration of these climatic trends is projected to occur during this century, due to ongoing increases in concentrations of greenhouse gases in the earth's atmosphere."

The ACIA's analysis and conclusions regarding Arctic temperature increases are dramatic. For example, in Alaska and western Canada, winter temperatures have increased by as much as 3-4° C in the past 50 years. Over the next 100 years, under a moderate emissions scenario, annual average temperatures are projected to rise 3-5°C over land and up to 7° C over the oceans. Winter temperatures are projected to rise by 4-7°C over land and 7-10°C (13-18°) over the oceans.

[25.010] The rising temperatures in Alaska have significant repercussions for the species and resources of the NPR-A. A recent published study documented a doubling of coastal erosion rates in the Teshekpuk Lake area. Mars et al (2007) concluded that "most of this additional land loss is attributed to the breaching of thermokarst lakes by coastal erosion and the subsequent flooding of those thermokarst depressions by marine water." Such loss of pond habitat is consistent with global warming:

the results are consistent with climate change trends that have resulted in warming of permafrost and shrinking summer pack ice in the Arctic Ocean. The former would render permafrost coastal bluffs and inland lakeshores more susceptible to erosion by waves and headward erosion of ephemeral streams, respectively, and the latter would increase wave fetch and contribute to more intense summer storms.

Id. Such accelerated erosion represents a significant threat to the species and resources of the NPR-A that should have been evaluated in the SEIS.

Another study documented a different climate related dynamic that also result in the loss of waterbird breeding ponds such as those in the NPR-A. Smol et al (2007) document the loss of Arctic ponds from desiccation in a warming climate. The effects on the ecosystem, and the eiders and loons dependant on that ecosystem are likely to be severe.

A key "tipping point" has now been passed: Arctic ponds that were permanent water bodies for millennia are now ephemeral. The ecological ramifications of these changes are likely severe, and will cascade throughout the Arctic ecosystem (e.g., waterfowl habitat and breeding grounds, invertebrate population dynamics and food for insectivores, drinking water for animals, etc.). Furthermore, lower water levels will have many indirect environmental effects, such as further concentration of pollutants. Ironically, high Arctic ponds, which are such important bellwethers of environmental change, are now disappearing because of climatic warming.

As these studies and others demonstrate, global warming is already impacting key the species and resources of the NPR-A. Such changes are likely to lead to a reduction of available breeding habitat and prey for the threatened, endangered and sensitive species of the NPR-A, compromising their chances of survival and recovery. As the impacts of global warming increase over the foreseeable future, these impacts will become all the more severe.

[25.011] Additionally, global warming is dramatically affecting sea ice in the Arctic an important habitat element for many animals in the NPR-A. The record summer sea ice minimum was reached on September 16, 2007. The record low of 4.13 million square kilometers (1.59 million square miles) is far less than the previous record low of 5.32 million square kilometers (2.05 million square miles) in 2005 (NSIDC 2007). The 2007 record low is also 2.61 million square kilometers (one million square miles) (an area approximately equal to the size of Alaska and Texas combined) less than the long-term average minimum, of 6.74 million square kilometers (2.60 million square miles) (NSIDC 2007). A combination of high temperatures, changes in the age and thickness of ice, and fluctuations in atmospheric circulations caused the sea ice to recede. Id. Sea ice extent is important for a variety of animals such as polar bears that have adapted to the arctic environment and the loss of sea ice can have devastating impacts. The SEIS fails to adequately analyze this important issue.

D. Black Carbon

[25.012] A significant contributor to Arctic warming, not adequately considered in the SEIS, is black carbon. Black carbon, or soot, consists of particles or aerosols released through the inefficient burning of fossil fuels, biofuels, and biomass (Quinn et al. 2007). Black carbon warms the atmosphere, but it is a solid, not a gas. Unlike greenhouse gases, which warm the atmosphere by absorbing longwave infra-red radiation, soot has a warming impact because it absorbs shortwave radiation, or visible light (Chameides and Bergin 2002). Black carbon is an extremely powerful greenhouse pollutant. Scientists have described the average global warming potential of black carbon as about 500 times that of carbon dioxide over a 100 year period (Hansen et al. 2007; see also Reddy and Boucher 2007). This powerful warming impact is remarkable given that black carbon remains in the atmosphere for only about four to seven days, with a mean residence time of 5.3 days (Reddy and Boucher 2007).

Black carbon contributes to Arctic warming through the formation of "Arctic haze" and through deposition on snow and ice which increases heat absorption (Quinn et al. 2007; Reddy and Boucher 2007). Arctic haze results from a number of aerosols in addition to black carbon, including sulfate and nitrate (Quinn et al. 2007). The effects of Arctic haze may be to either increase or decrease warming, but when the haze contains high amounts of soot, it absorbs incoming solar radiation and leads to heating (Quinn et al. 2007).

Soot also contributes to heating when it is deposited on snow because it reduces reflectivity of the white snow and instead tends to absorb radiation. A recent study indicates that the direct warming effect of black carbon on snow can be three times as strong as that due to carbon dioxide during springtime in the Arctic (Flanner 2007). Black carbon emissions that occur in or near the Arctic contribute the most to the melting of the far north (Reddy and Boucher 2007; Quinn et al. 2007).

Reductions in black carbon therefore provide an extremely important opportunity to slow Arctic warming in the short term, and mitigation strategies should focus on within-Arctic sources and northern hemisphere sources that are transported by air currents most efficiently to the Arctic. Conversely, allowing black carbon emissions to increase in the Arctic as the result of oil and gas development, increased shipping or other industrial activity, will accelerate Arctic warming and

consequent loss of tundra ponds and the seasonal sea ice, leading to the extinction of the polar bear and other species. Black carbon reductions will also provide air quality and human health benefits. **[25.013]** Numerous direct and indirect impacts of the leasing proposed under the alternatives of the SEIS will result in substantial releases of black carbon in the Arctic. This factor is not considered in the SEIS.

E. Sea Level Rise

[25.014] As discussed above, sea level rise is already impacting the shoreline and lakes of the NPR-A. Such impacts are only going to get worse. The SEIS, however, severely underestimates such sea level rise.

In 2007, the IPCC projected that global sea level will rise between 18-59 cm in this century (Solomon et al. 2007). One of the most troubling of recent scientific findings is that this projection is almost certainly a substantial underestimate. Melting of the Greenland ice sheet has accelerated far beyond what scientists predicted even just a few years ago, with a more than doubling of the mass loss from Greenland due to melting observed in the past decade alone (Rignot and Kangaratnam 2006). The acceleration in the rate of melt is due in part to the creation of rivers of melt water, called "moulins," that flow down several miles to the base of the ice sheet, where they lubricate the area between the ice sheet and the rock, speeding the movement of the ice towards the ocean. The IPCC projection of 18-59 cm in this century assumes a negligible contribution to sea level rise by 2100 from loss of Greenland and Antarctic ice, but leading experts have stated that that conclusion is no longer plausible due to multiple positive feedback mechanisms including dynamical processes such as the formation of moulins, reduced surface albedo, loss of buttressing ice shelves, and lowered ice surface altitude (Hansen et al. 2006). Paleoclimatic evidence also provides strong evidence that the rate of future melting and related sea-level rise could be faster than previously widely believed (Overpeck et al. 2006).

While it has been commonly assumed that the response time of ice sheets is millennia, this may reflect the time scale of the forcings that cause the changes, rather than the inherent response time of the ice sheets (Hansen et al. 2007). The forcing from continued unabated greenhouse gas emissions in this century could lead to a dynamically changing ice sheet that is out of our control (Hansen et al. 2007). Just 2-3°C (3.6-5.4° F) of warming would likely cause sea level to rise by at least 6 m (18 feet) within a century (Hansen 2006). Temperature changes of 2-3°C (3.6-5.4° F) are well within the range of estimates for this century provided by the IPCC (Solomon et al. 2007). Change of this magnitude is very likely if carbon dioxide concentrations exceed 475 ppm, and, if current greenhouse gas emission trajectories continue for just 10 more years, it will be difficult if not impossible to keep carbon dioxide levels below 475 ppm (Hansen 2006, Hansen et al. 2006, Hansen et al. 2007).

F. Ocean Acidification

The world's oceans are an important part of the planet's carbon cycle, absorbing large volumes of carbon dioxide and cycling it through various chemical, biological, and hydrological processes. The oceans have thus far absorbed approximately 30% of the excess carbon dioxide emitted since the beginning of the industrial revolution (Feely et al. 2004, WBGU 2006). The world's oceans, in fact, store about 50 times more carbon dioxide than the atmosphere (WBGU 2006), and most carbon dioxide released into the atmosphere from the use of fossil fuels will eventually be absorbed by the ocean (Caldeira and Wickett 2003). As the ocean absorbs carbon dioxide from the atmosphere, this changes the chemistry of the seawater by lowering its pH. The oceans' uptake of these excess anthropogenic carbon dioxide emissions, therefore, is causing ocean acidification (WBGU 2006).

Surface ocean pH has already dropped by about 0.1 units on the pH scale, from 8.16 in 1800 to 8.05 today -- a rise in acidity of about thirty percent (Orr et al. 2005). Ocean acidification is likely more pronounced in the Beaufort and Chukchi Seas because scientists found increased changes at higher latitudes. The highest decrease in pH was observed at high latitudes, a decrease of 0.12 units (Bindoff 2007). The pH of the ocean is currently changing rapidly at a rate 100 times anything seen in hundreds of millennia, and may drop by another 0.3 or 0.4 (100 - 150% increase in the concentration of H⁺ ions) by the end of this century (Orr et al. 2005, Meehl et al. 2007). If carbon dioxide emissions continue unabated, resulting changes in ocean acidity could exceed anything experienced in the past 300 million years (Caldeira and Wickett 2003). Even if carbon dioxide emissions stopped immediately, the ocean would continue to absorb the excess carbon dioxide in the atmosphere, resulting in further acidification until the planet's carbon budget returned to equilibrium.

Ocean acidification from unabated anthropogenic carbon dioxide emissions poses a profound threat to marine ecosystems because it affects the physiology of numerous marine organisms, causing detrimental impacts that may ripple up the food chain. Changes that have been observed in laboratory experiments include impacts to the productivity of algae, photosynthesis of phytoplankton, metabolic rates of zooplankton and fish, oxygen supply of squid, reproduction of clams, nitrification by microorganisms, and the uptake of metals (WBGU 2006). Perhaps most importantly, increasing ocean acidity reduces the availability of carbonate ions needed by marine life to build shells and skeletons (Orr et al. 2005).

Phytoplankton, corals, coralline macroalgae, urchins, seastars, clams, oysters, crustaceans and many other organisms rely on calcium carbonate in the ocean to build skeletons (WBGU 2006). Normally, ocean waters are saturated with carbonate ions that marine organisms use to build skeletons (WBGU 2006). However, the acidification of the oceans shifts the water chemistry to favor bicarbonate, thus reducing the availability of carbonate to marine organisms (WBGU 2006). Acidic waters also dissolve existing protective carbonate skeletons and shells (Orr et al. 2005). Already the ocean surface layer has lost 10% of its carbonate compared to preindustrial levels (WBGU 2006). Continuing carbon dioxide emissions could result in a decrease in calcification rates by up to 60% by the end of this century (Ruttimann 2006). Alarmingly, the Southern Ocean will be under-saturated at the surface in aragonite (a form of calcium carbonate) in a matter of decades (by 2050), and marine organisms that use aragonite, such as shelled pteropod marine snails, will no longer be able to survive in the Southern Ocean (Orr et al. 2005). Among the various organisms likely to be affected by ocean acidification, effects on plankton deserve concern. Plankton are at the base of the marine food web and therefore adverse impacts of ocean acidification on calcifying plankton will reverberate up the food chain.

[25.015] Any activity, such as the leasing under the SEIS, that will lead to further carbon dioxide emissions must thoroughly examine the direct and cumulative impacts and contribution of those emissions to the problem of ocean acidification. The SEIS fails to do so.

G. Economic Costs of Greenhouse Gas Emissions Must Be Considered

[25.016] In its NEPA analysis, BLM should have evaluated the economic costs of greenhouse gas emissions from both the exploration and extraction activities as well as the consumption of the produced oil and gas. Important peer-reviewed literature exists on estimating the social costs of climate change and quantifying the cost of carbon dioxide emissions (Stern 2006). As this field has developed, the methodology and inclusiveness of economic studies has improved. At the same time, the scientific understanding of global warming impacts and predictive ability has also improved. The result is that the estimated cost of greenhouse gas emissions in the literature has increased steadily, and we now know that the cost of continued greenhouse gas

emission trajectories would be astronomical (Stern 2006). While monetizing the impact of greenhouse gas emissions cannot substitute for a full discussion of all impacts under NEPA, an estimate of the economic costs should be included.

Researchers have concluded that \$73/tc2 (year 2010) is a reasonable figure for decisionmakers to use as a lower benchmark of the economic cost of greenhouse gas emissions, but this figure rises sharply over time (Downing et al. 2005). An upper benchmark is more difficult to deduce from the current literature but the risk of higher values for the social cost of carbon is significant (Downing et al. 2005, Watkiss et al. 2005). One widely respected report commissioned for the British government recommended that decisionmakers use the range of values displayed in Table 1.

Table 1: Economic Cost of Carbon: Values for Use in Project Appraisal (USD per ton carbon) (Source: Adapted from Watkiss et al. 2005:ix)³

Year of Emission	Central Guidance	Lower Estimate	Central	Upper Estimate	Central
2000	\$101	\$64		\$238	
2010	\$119	\$73		\$293	
2020	\$146	\$91		\$375	
2030	\$183	\$119		\$475	
2040	\$256	\$165		\$603	
2050	\$384	\$238		\$768	

The Stern Review of the Economics of Climate Change, another comprehensive report commissioned by the British government, recently concluded that allowing current emissions trajectories to continue unabated would eventually cost the global economy between 5 to 20 percent of GDP each year within a decade, or up to \$7 trillion, and warned that these figures should be considered conservative estimates (Stern 2006). By contrast, measures to mitigate global warming by reducing emissions were estimated to cost about one percent of global GDP each year (Stern 2006). **[25.017]** The SEIS's utter failure to look at the economic costs of the greenhouse gas emissions generated by the various alternatives violates NEPA

H. Cumulative Effects

[25.018] NEPA requires a thorough analysis of cumulative effects. The SEIS fails in this regard as well. The most significant cumulative effects to the resources of the NPR-A are those associated with global warming as discussed above. The SEIS' treatment of such effects is superficial at best and often inaccurate. This alone renders the SEIS legally infirm under NEPA.

Additionally, the other significant source of cumulative effects on the resources of the NPR-A is further oil and gas leasing and development activity, both in the immediate vicinity of the NPR-A, and elsewhere in the range of the species dependant on the NPR-A. As the map below (Figure 1) demonstrates, the majority of the North Slope has either already been leased or is subject to a pending proposal for leasing. The species of the NPR-A such as the polar bear and yellow-billed loon face the very real risk of having most of their currently suitable habitat rendered unsuitable within the very near (and clearly foreseeable) future.

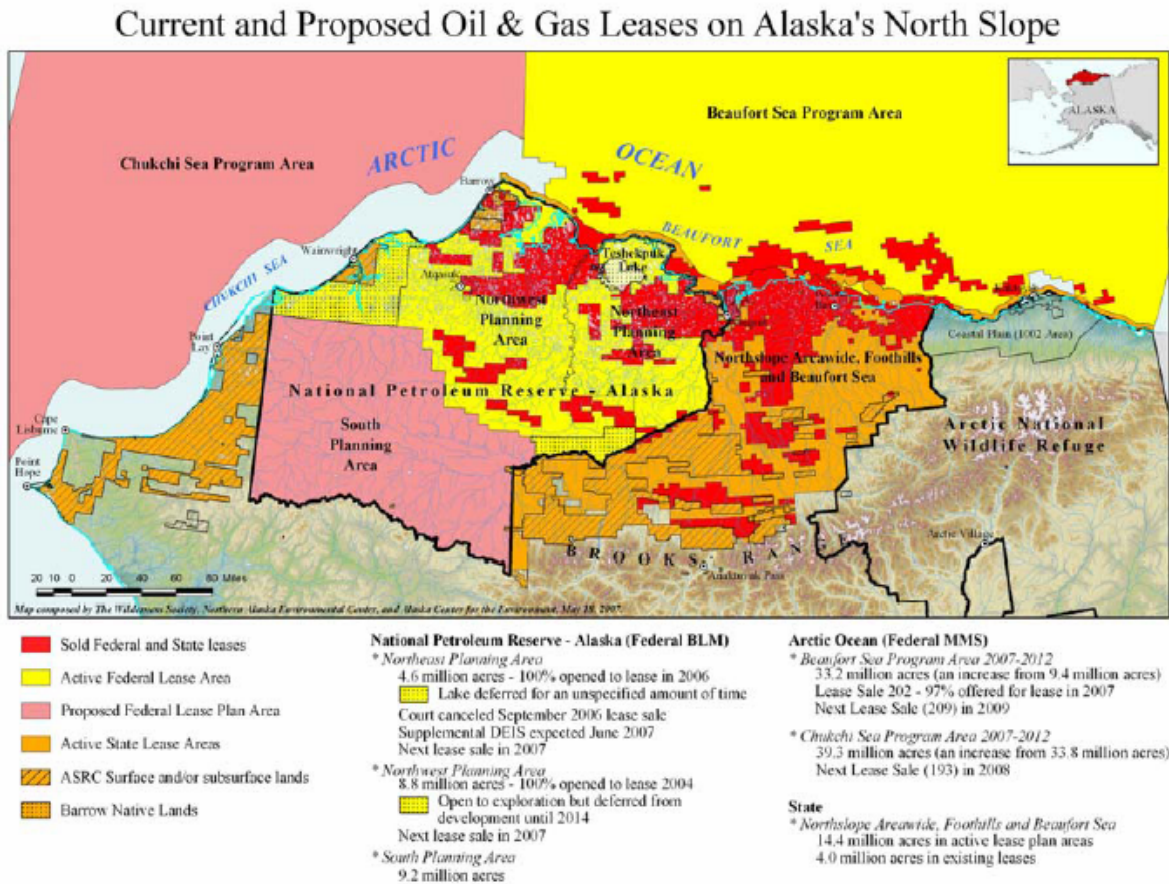


Figure 1: North Slope Oil and Gas Leases

[25.019] While disturbance and development of the terrestrial habitat of the North Slope is of the greatest concern for species dependant on the region, we believe BLM must also examine the significant threat posed to the species by offshore oil and gas development. On June 29, 2007 Secretary of Interior Kempthorne approved the 2007-2012 Program for leasing of the Outer Continental Shelf. In the Program, lease sales are planned in the Chukchi Sea in 2008, 2010, and 2012, in the Beaufort Sea in 2009 and 2011, and in Cook Inlet in 2009 and 2011 and the Bering Sea in 2011. These areas are all either foraging habitat or wintering habitat for the eiders and loons that nest in the NPR-A. In addition to planned lease sales, activity on existing offshore leases is scheduled or now underway, including exploration drilling by Shell and BP's planned development of the Liberty prospect. Because yellow-billed loons and eiders forage offshore of their breeding areas, as well as in their wintering areas, they are highly vulnerable to direct impacts from offshore development. Additionally, construction and operation of offshore facilities will result in increased helicopter activity over onshore breeding areas along with other land-based disturbances related to servicing offshore operations. These offshore activities will affect not only waterbirds, but also polar bears and other marine mammals. See Figure 2 below.

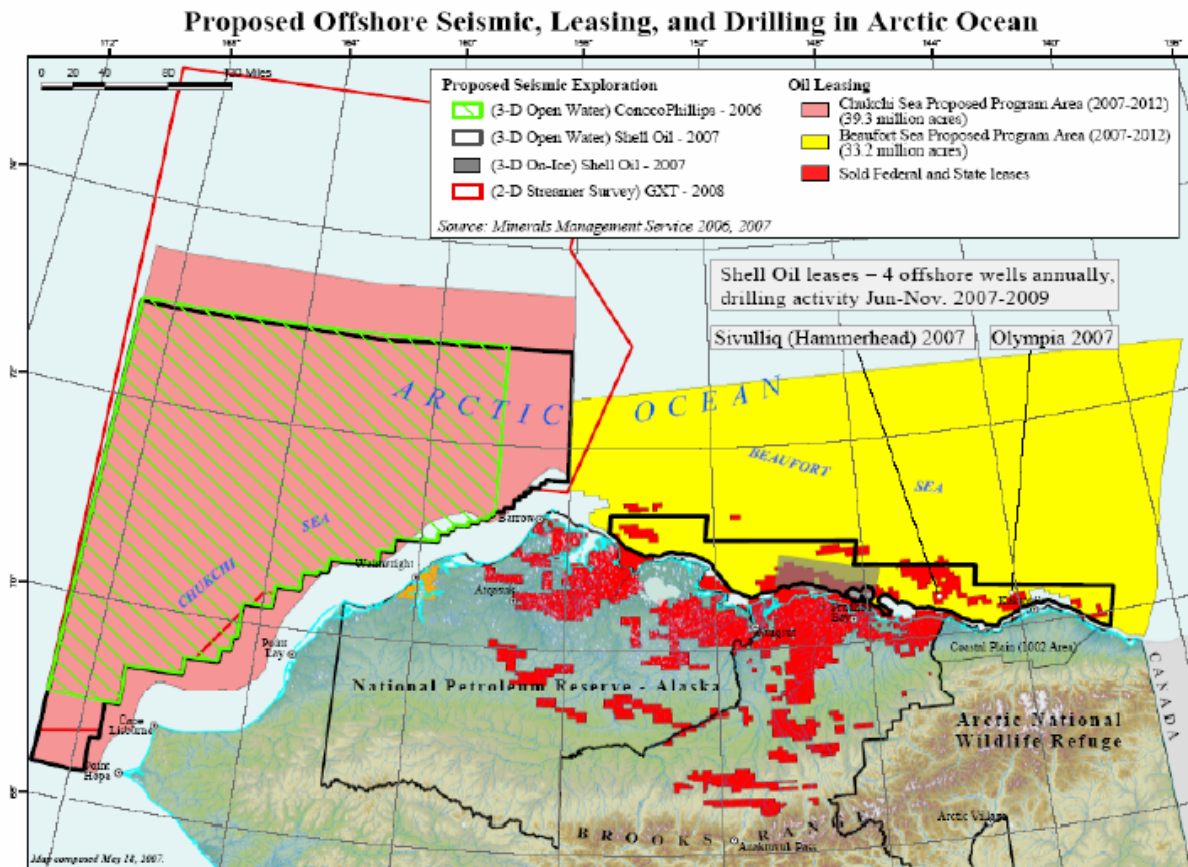


Figure 2: Offshore Oil Leases

[25.020] Readily available information about the cumulative impacts of oil and gas activities on and offshore in Alaska demonstrate significant cumulative effects on the resources of the NPR-A. However, these impacts are only superficially analyzed in the SEIS. This is not legally adequate. While less information is available about such activities and their impacts in Canada and Russia, what information that does exist, indicates reason for concern and highly significant cumulative impacts.

In Canada, there are numerous proposals for oil and gas development in the Arctic. Largest of these is the proposed Mackenzie Gas Project, which would likely result in wide-scale impacts to the Mackenzie River Delta and adjacent areas. Yellow-billed loons are known to breed just to the east of the Delta. For the official Canadian government description of planned oil and gas activities in the Canadian Arctic see http://www.ainc-inac.gc.ca/oil/bkgd/nor/index_e.html. For an analysis of the cumulative impacts of these proposed activities, see http://www.carc.org/oil_and_gas.php. The development of oil and gas resources in the Canadian Arctic would have comparable deleterious impacts on the yellow-billed loons and other sensitive waterbirds nesting in the region as similar development in the NPR-A and other areas of Alaska. Further detail on oil and gas projects in the Canadian Arctic

is contained in the 2006 status review prepared by FWS for the polar bear (Schliebe et al 2006). In carrying out its status review on the yellow-billed loon, FWS should examine the ongoing, proposed and foreseeable oil and gas development in the Canadian range of the species.

What information that is available regarding the impacts of oil and gas development in the Russian Arctic indicates likely disaster for the yellow-billed loon and other waterbirds. Both breeding areas for Russian nesting loons as well as marine wintering areas for Alaska nesting birds are subject to rapid industrial development in the Russian Arctic. Additional information on Russian Arctic oil development is contained in Schliebe et al (2006). The SEIS is largely devoid of discussion of such significant impacts.

[25.021] An additional cumulative impact to Arctic ecosystem to which the NPR-A is a part, is the ongoing and projected increase in shipping in the Arctic. Such impacts are likely to be substantial and information on them is readily available. See, e.g. Transport Canada (2005); Office of Naval Research (2001). Yet these impacts are not discussed in the SEIS.

[25.022] Finally, many of the species dependant on the NPR-A, such as the yellow-billed loon, Pacific brant, and buff-breasted sandpiper, migrate from breeding or molting grounds in the NPR-A to wintering areas in North and South America and elsewhere. Many of these wintering grounds are undergoing rapid transformation, resulting in substantial cumulative effects on these species. There is little to any discussion of such impacts in the SEIS.

I. Impacts on Polar Bears

[25.023] The actions considered under the SEIS will have significant direct and cumulative impacts on polar bears. The SEIS's treatment of this issue is inadequate. The Fish and Wildlife Service has proposed listing polar bears under the ESA. 72 Fed. Reg. 1064 (Jan 9, 2007). Polar bears are completely dependent on sea ice for hunting, migration, and other activities necessary for their survival. Due to global warming, the habitat of the polar bear is literally melting away thus threatening the survival of the polar bears (ACIA 2004, Derocher 2004). Polar bears have drowned while making long swims due to the reduced sea ice extent. New research by the United States Geological Survey ("USGS") concluded that reduced sea ice would result in loss of approximately 2/3 of the world's polar bear population within 50 years and Alaska's polar bears will likely be extirpated if business as usual emission scenarios occur (Amstrup et al. 2007). The proposed lease sales under all alternatives in the SEIS and the resultant greenhouse gas emissions are consistent with the business as usual scenario that will lead to polar bear extinction. The primary concerns for polar bears in the region are the impacts of global warming, which continue to increase both the expanse and duration of open water in summer and fall, human activities including industrial development within the near-shore and onshore environment, increases in the atmospheric and oceanic transport of contaminants into the region, and possible over-harvest of a stressed or declining population (Schliebe et al 2006).

[25.024] BLM must analyze not just the direct impacts of oil and gas leasing in the NPR-A and subsequent exploration, development and production, on the polar bear, but also the greenhouse emissions of the oil and gas produced from these sales.

J. Alternatives and Mitigation

[25.025] BLM should have considered a reasonable range of alternatives and mitigation measures to reduce impacts on the environment. For example, BLM should have considered alternatives that promote the reduction of greenhouse gas emissions such as limiting lease sales. The SEIS failed to do this.

NEPA requires that the EIS "rigorously explore and objectively evaluate all reasonable alternatives' to a proposed plan of action that has significant environmental effects. 40 C.F.R. § 1502.14(a) (2000). This is 'the heart' of an EIS." *Natural Resources Defense Council v. U.S. Forest Service*, 421 F.3d 797, 813 (9th Cir. 2005). The purpose of NEPA's alternatives

requirement is to ensure agencies do not undertake projects "without intense consideration of other more ecologically sound courses of action, including shelving the entire project, or of accomplishing the same result by entirely different means." *Env'tl Defense Fund., Inc. v. U.S. Army Corps. of Eng'rs*, 492 F.2d 1123, 1135 (5th Cir. 1974); see also, *City of New York v. Dept. of Transp.*, 715 F.2d 732, 743 (2nd Cir. 1983) (NEPA's requirement for consideration of a range of alternatives is intended to prevent the EIS from becoming "a foreordained formality."); *Utahns for Better Transportation v. U.S. Dept. of Transp.*, 305 F.3d 1152 (10th Cir. 2002), modified in part on other grounds, 319 F.3d 1207 (2003). Whether an alternative is "reasonable" or not turns on whether it will accomplish the stated purpose for the project. *City of Carmel-By-The-Sea v. U. S. Dep't of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997).

Importantly, this evaluation extends to considering more environmentally protective alternatives and mitigation measures. See, e.g., *Kootenai Tribe of Idaho v. Veneman*, 313 F.3d 1094, 1122-1123 (9th Cir. 2002) (and cases cited therein). NEPA regulations require that alternatives "include appropriate mitigations measures." 40 C.F.R. § 1502.14(f). Additionally, the regulations require that the analysis of environmental consequences discuss "means to mitigate adverse environmental impacts." 40 C.F.R. § 1502.16(h).

An environmental review document must fully disclose and analyze impacts to any listed, candidate, or sensitive species, and discuss alternatives and enforceable mitigation measures to avoid, reduce, and mitigate impacts to the species.

We believe that an alternative in which no further leasing in the NPR-A occurs, until and unless it is part of and consistent with a national plan to reduce greenhouse gas emissions by 80% by 2050, the levels top climate scientists such as Dr. Hanson indicate are necessary to avert the most disastrous impacts of global warming, is a completely reasonable alternative. In fact, it is an absolutely essential alternative if we as a nation are to successfully address the climate crisis. The failure to analyze such an alternative, or for that matter any alternatives that increase environmental protections in the NPR-A, itself is evidence of an inadequate NEPA process. The SEIS is patently unlawful.

K. Compliance with Other Environmental Laws

In concert with its environmental review under NEPA, BLM must also comply with other environmental laws implicated by its action.

1. Endangered Species Act

Section 7 of the ESA requires that BLM consult with the appropriate wildlife services agencies to ensure that the lease sales do not jeopardize threatened or endangered species or adversely modify their critical habitat. 16 U.S.C. § 1536(a)(2). Section 7 consultation is required for "any action [that] may affect listed species or critical habitat." 50 C.F.R. § 402.14. Agency "action" is defined in the ESA's implementing regulations to include "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas. Examples include, but are not limited to: (a) actions intended to conserve listed species or their habitat; (b) the promulgation of regulations; (c) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (d) actions directly or indirectly causing modifications to the land, water, or air." 50 C.F.R. § 402.02. See also *Pacific Rivers Council v. Thomas*, 30 F.3d 1050, 1054-55 (9th Cir. 1994), cert. denied, 514 U.S. 1082 (1995) (recognizing that Congress intended "agency action" to be interpreted broadly, admitting of no limitations).

When a proposed action may affect a protected species, consultation must occur and be completed before the federal action may take place. *Pacific Rivers*, 30 F.3d at 1056; *Thomas v. Peterson*, 753 F.2d 754, 764-65 (9th Cir. 1985). The action agency consults with the appropriate wildlife agency. NMFS has primary responsibility for administering the ESA with regards to most marine species, including bowhead whales and most marine mammals, while FWS has responsibility for terrestrial species, as well as some marine mammals, and all seabirds. During the course of consultation, NMFS or FWS may "suggest modifications" to the action to "avoid the likelihood of adverse effects" to the listed species. 50 C.F.R. § 402.13. At the completion of consultation, NMFS or FWS issues a Biological Opinion ("BO") that determines if the agency action is likely to jeopardize the species. See 50 C.F.R. § 402.02. If so, the agency may not proceed with any program, permit, or decision that would jeopardize a species' survival unless the BO specifies reasonable and prudent alternatives that will avoid jeopardy and allow the agency to proceed with the action. 16 U.S.C. § 1536(b). See also *Sierra Club v. Marsh*, 816 F.2d 1376, 1384-86 (9th Cir. 1987) (enjoining highway construction because agency could not meet burden of absolute assurance that mitigation required to avoid jeopardy was possible).

Although procedural, consultation is the backbone of the ESA. As the Ninth Circuit recognized, "[o]nly by requiring substantial compliance with the act's procedures can we effectuate" congressional intent to protect species. *Sierra Club v. Marsh*, 816 F.2d at 1384 (9th Cir. 1987).

The opening up of any areas of the NPR-A to oil and gas lease sales certainly affect ESA-listed species. Numerous listed species inhabit the NPR-A and adjacent waters. These include bowhead whale, humpback whale, and fin whales, and spectacled and Steller's eiders. Additionally, the polar bear and the Kittlitz's murrelet have been petitioned for listing and are likely to be listed during the implementation of the proposed lease sales. Moreover, these species as well as other listed species are vulnerable to global warming and therefore the greenhouse gas emissions of the leases may affect species. BLM must complete consultation with NMFS and FWS on the impacts of both the direct impacts (e.g. noise, oil spills) and indirect impacts (greenhouse gas emissions) of the lease sales and other management decisions regarding the NPR-A. We do not see how any action by BLM that opens up Teshekpuk Lake to leasing could be considered consistent with the agency's obligation to avoid jeopardizing the Steller's and spectacled eiders and other listed species.

Conclusion

In sum, to further the goals of NEPA and provide full consideration and disclosure of the environmental consequences of the management of the NPR-A, BLM must discuss in its SEIS the direct as well as global warming implications of its proposal. **[25.026] BLM needs to analyze the greenhouse gas emissions from the use of the fossil fuels produced from these lease sales.** **[25.027] Additionally, the potential impacts on the wildlife and the environment in the lease sale area from further global warming need analysis. BLM should consider these impacts from its actions, all cumulative impacts affecting the species and communities in the Alaskan Arctic, and adjacent areas directly and indirectly affected by the lease sales. BLM must also take steps to avoid and mitigate all of these adverse affects of the lease sales. Unfortunately, this SEIS accomplishes none of these objectives.** Again, we believe that the only conclusion compatible with NEPA, the ESA and common sense, is to forgo the proposed lease sales entirely, withdraw the SEIS, and proceed with a new NEPA process that includes alternatives to increase protection of the NPR-A and the Arctic and reduce greenhouse gas emissions. Thank you for the opportunity to provide these comments.

Sincerely,

/s/ Miyoko Sakashita

Miyoko Sakashita
Staff Attorney, Oceans Program
Extension 308
miyoko@biologicaldiversity.org

1 We also join in and incorporate by reference the critique of the SEIS contained in the coalition comment letter submitted by the Alaska Center for the Environment and other groups to the degree such comments are consistent with these.

2 tc = tonne carbon = 3.664 tons of carbon dioxide.

3 Figures from Watkiss et al. 2005:ix were converted from GBP (£) to USD (\$) with the exchange rate calculator at http://coinmill.com/GBP_USD.html on July 18, 2006 and rounded to the nearest dollar.

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[Response to 25.001]

As described in the Draft EIS, since CO₂ has not been regulated as an air pollutant, potential CO₂ emissions were not specifically calculated. However, potential CO₂ emissions for exploration, development and production were estimated and reported based on calculated CO emissions. When compared to the 2003 total U.S. emissions of CO₂, each alternative would contribute minuscule amounts of direct emissions to national levels. The Draft EIS further stated “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

Environmental and economic impacts of greenhouse gas emissions from oil and gas consumption are not effects of the Northeast NPR-A planning decision as defined by the Council on Environmental Quality, and thus are not required to be analyzed under NEPA. Greenhouse gas emissions from consumption of NPR-A oil and gas are not direct effects under NEPA because they do not occur at the same time and place as the action. They are also not indirect effects because NPR-A oil and gas leasing and production would not be a proximate cause of greenhouse gas emissions resulting from consumption. Also, because the impacts of consumption are not direct or indirect effects of the proposed action, a cumulative impact analysis would not reveal an incremental effect attributable to the proposed Northeast NPR-A leasing decision.

There is no reliable methodology to assess the relation between leasing in NPR-A and changes in nationwide or worldwide oil and gas consumption levels. Leasing and future development of NPR-A will not measurably increase consumption, nor would a decision to forego leasing measurably reduce consumption. Consumption of oil and gas is driven by a variety of complex interacting factors including energy costs, energy efficiency, availability of other energy sources, economics, demography, and weather or climate. If the proposed leasing and anticipated development were not to occur in the Northeast NPR-A, consumption levels of oil and gas would essentially be unaffected with the potential production from NPR-A replaced by a combination of imports, fuel switching, and other domestic production. While on a national basis lower levels of domestic oil and gas production could occur and may trigger some modest conservation measures having some benefits in terms of reduced greenhouse gas emissions, no single leasing decision would be expected to result in any discernable responsive conservation measures. This is particularly true with regard to NPR-A where the actual productive capacity is currently an unknown. Furthermore, it is not known whether or to what extent NPR-A oil and gas would be refined into plastics or other products that will not be burned, what mix of vehicles or power plants might utilize the product, or what mitigation measures would offset any such consumption.

Moreover, BLM does not regulate fuel consumption or carbon emissions at any level; nor does BLM dictate the destination of the oil and gas produced from a federal lease or the products to be refined from it, which would determine the emissions produced. Even if it were possible to causally connect greenhouse gas emissions from consumption to leasing in Northeast NPR-A, the effects from consumption are not only speculative but beyond the scope of agency authority

or control. While the Energy Information Administration has reported emissions from a variety of petroleum products (e.g., aviation gasoline, motor gasoline, etc.), natural gas and other gaseous fuels (e.g., methane, landfill gas, etc.), electricity, coal, and renewable sources, an attempt to translate this information into emissions from the ultimate consumption of the oil and gas produced from Northeast NPR-A would be a highly speculative exercise unnecessary for the land management decisions for which BLM is responsible.

[Response to 25.002]

As described in the Draft EIS, since CO₂ has not been regulated as an air pollutant, potential CO₂ emissions were not specifically calculated. This also applies to other so-called “greenhouse gases.” Potential direct CO₂ emissions were estimated and reported in the Draft EIS. For further discussion of analysis of greenhouse gas emissions and climate change, specifically those related to consumption of oil and gas produced under the various alternatives, see the response to 25.001.

[Response to 25.003]

Global warming is discussed in both the Climate and Meteorology section of Chapter 3 and in multiple sections of Chapter 4. Greenhouse gas emissions from oil and gas activities within the planning area are too small to have any discernable impact on ocean acidification. For further discussion of analysis of greenhouse gas emissions, specifically those related to consumption of oil and gas produced from the planning area, see the response to 25.001.

[Response to 25.004]

Changes in the Arctic, including those related to climate change, are discussed in both the Climate and Meteorology section of Chapter 3 and in multiple sections of Chapter 4.

[Response to 25.005]

The BLM disagrees. The IAP/EIS discusses both the existing status of all of the types of wildlife mentioned (Chapter 3); the potential direct, indirect, and cumulative impacts to them and their habitats (Chapter 4); and provides means to mitigate impacts to them, most of which are addressed in Table 2-2.

[Response to 25.006]

The BLM disagrees. The IAP/EIS adequately describes the legal context for making decisions to offer lands for lease within the NPR-A. (For example, see the "Authority" and "Consistency with Federal, State, and Local Laws and Regulations" subsections in Chapter 1). In addition, the BLM has prepared a Biological Assessment and the U.S. Fish and Wildlife Service is developing a Biological Opinion as part of the ESA Section 7 process.

[Response to 25.007]

The BLM considers introduction of any alternative such as proposed here to be beyond the scope of this Supplement to the Amended IAP/EIS. Discussion of why such an alternative is not within the scope of this IAP/EIS is provided in Chapter 2 under the heading of Alternatives Considered but Eliminated from Detailed Analysis, particularly those discussing making less land available for oil and gas leasing and considering Wilderness and Wild and Scenic River designation.

[Response to 25.008]

The BLM disagrees. The range of alternatives presented in the Supplemental IAP/EIS is fully

sufficient to address the purpose and need for the IAP/EIS described in Chapter 1. While BLM does consider means to reduce impacts to air quality, it is not required by NEPA to develop alternatives specifically designed to meet a purpose and need of reducing speculative emissions of non-regulated greenhouse gases.

[Response to 25.009]

The Supplemental IAP/EIS addresses potential greenhouse gas emissions related to oil and gas leasing in the planning area in the Air Quality and Climate sections for each alternative as well as in the cumulative impact analysis of Chapter 4.

[Response to 25.010]

The IAP/EIS discusses the cumulative impacts associated with coastal erosion in numerous subsections, including, but not limited to, those for soils, water, vegetation, fish, birds, and mammals.

[Response to 25.011]

The Draft IAP/EIS appropriately considers the effects of the reduction in extent and location of sea ice on the physical and biological environment in the context of the effects of the Alternatives in the cumulative effects sections, including shoreline erosion, potential changes in the range and distribution of marine mammals, including noting that reduction in sea ice extent, location, and duration are expected to have significant effects on the worldwide polar bear population.

[Response to 25.012]

The Draft IAP/EIS described both the current air quality conditions and regulations in Chapter 3 – Affected Environment, and indicated, to the extent possible, potential future air quality impacts due to additional leasing in Chapter 4 – Environmental Consequences. This included a comparison to site-specific conditions, as well as predicted future impacts, to existing and proposed development on the North Slope. However, as stated in the Draft IAP/EIS, “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

For the first time, the IPCC recently recognized the potential for “black carbon” (light absorbing carbon) to deposit on snow and ice, altering the albedo, and enhancing melting. However, the use of low sulfur diesel fuel by industry and communities, as recently mandated by EPA, would reduce the potential “black carbon” emissions. The BLM recognizes there are several areas of ongoing research regarding Global Climate Change, including those identified in your comment. We will strive to incorporate the most appropriate information and analysis in our future NEPA analyses as required under CEQ Regulations.

[Response to 25.013]

The Draft IAP/EIS described both the current air quality conditions and regulations in Chapter 3 – Affected Environment, and indicated, to the extent possible, potential future air quality impacts due to additional leasing in Chapter 4 – Environmental Consequences. This included a comparison to site-specific conditions, as well as predicted future impacts, to existing and proposed development on the North Slope. However, as stated in the Draft IAP/EIS, “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

For the first time, the IPCC recently recognized the potential for “black carbon” (light absorbing carbon) to deposit on snow and ice, altering the albedo, and enhancing melting. However, the

use of low sulfur diesel fuel by industry and communities, as recently mandated by EPA, would reduce the potential “black carbon” emissions. The BLM recognizes there are several areas of ongoing research regarding Global Climate Change, including those identified in your comment. We will strive to incorporate the most appropriate information and analysis in our future NEPA analyses as required under CEQ Regulations.

[Response to 25.014]

Additional analysis has been added to the Cumulative Effects section of Chapter 4 as part of the Water Resources analysis to more fully describe the potential rise in sea level.

[Response to 25.015]

Potential direct CO₂ emissions were estimated and reported in the IAP/EIS. Greenhouse gas emissions from oil and gas activities within the planning area are too small to have any discernable impact on ocean acidification. For further discussion of analysis of greenhouse gas emissions and climate change, specifically those related to consumption of oil and gas produced as a result of leasing in the planning area, see the response to 25.001.

[Response to 25.016]

The potential direct, indirect, and cumulative economic impacts are analyzed in Chapter 4 of the IAP/EIS. For further discussion of analysis relevant to the economic costs associated with greenhouse gas emissions and climate change, specifically those related to consumption of oil and gas produced as a result of leasing in the planning area, see the response to 25.001.

[Response to 25.017]

The potential direct, indirect, and cumulative economic impacts are analyzed in Chapter 4 of the IAP/EIS. For further discussion of analysis relevant to the economic costs associated with greenhouse gas emissions and climate change, specifically those related to consumption of oil and gas produced as a result of leasing in the planning area, see the response to 25.001.

[Response to 25.018]

The IAP/EIS's cumulative impacts discussion has been modified to provide additional analysis of climate change.

[Response to 25.019]

The cumulative analysis presented in Chapter 4 discusses cumulative impacts associated with offshore oil and gas development.

[Response to 25.020]

BLM acknowledges in the Cumulative Effects Section (Section 4.7) of the SEIS that there are factors outside of the Planning Area that may adversely affect the species including impacts associated with wintering areas and along migratory routes. Under the heading Factors Outside of the North Slope BLM states several factors including habitat loss and alteration of habitat may impact critical bird habitats that lay outside of the planning area resulting in cumulative effects to a suite of species.

[Response to 25.021]

The IAP/EIS discusses the potential impacts associated with anticipated marine shipments relevant to NPR-A. Neither of the sources cited provide projections of future shipping or discussions of related impacts. Office of Naval Research (2001) states: "The timeline for a significantly navigable Arctic may extend decades into the future."

[Response to 25.022]

BLM acknowledges, in the Cumulative Effects Section (Section 4.7) of the IAP/EIS that there are factors outside of the Planning Area that may adversely affect the species including impacts associated with wintering areas and along migratory routes. Under the heading "Factors Outside of the North Slope," BLM states several factors including habitat loss and alteration of habitat may impact critical bird habitats that lay outside of the planning area resulting in cumulative effects to a suite of species.

[Response to 25.023]

The analysis in the Draft IAP/EIS, supported by the Status Review conducted by USFWS (Schieble et al 2006) adequately describes the potential types of direct impacts and the likelihood that they will occur. Impacts to polar bears as the result of any lease sale and subsequent development are expected to be minimal.

The Draft IAP/EIS notes that significant effects to polar bears are likely if current decline in the extent and seasonality of sea ice continues as projected. While the anthropogenic production of "greenhouse gases" is likely to contribute to the processes resulting in the reduction of sea ice, the potential contribution resulting from leasing under any alternative would be minimal.

[Response to 25.024]

The potential direct, indirect, and cumulative impacts on polar bears are analyzed in Chapter 4 of the IAP/EIS. For further discussion of analysis of greenhouse gas emissions and climate change (which can have an impact on polar bears), specifically those related to consumption of oil and gas produced as a result of leasing in the planning area, see the response to 25.001.

[Response to 25.025]

The BLM disagrees. The range of alternatives presented in the Supplemental IAP/EIS is fully sufficient to address the purpose and need for the IAP/EIS described in Chapter 1. While BLM does consider means to reduce impacts to air quality, it is not required by NEPA to develop alternatives specifically designed to meet a purpose and need of reducing greenhouse gases.

[Response to 25.026]

Environmental and economic impacts of greenhouse gas emissions from oil and gas consumption are not effects of the Northeast NPR-A planning decision as defined by the Council on Environmental Quality, and thus are not required to be analyzed under NEPA. Greenhouse gas emissions from consumption of NPR-A oil and gas are not direct effects under NEPA because they do not occur at the same time and place as the action. They are also not indirect effects because NPR-A oil and gas leasing and production would not be a proximate cause of greenhouse gas emissions resulting from consumption. Also, because the impacts of consumption are not direct or indirect effects of the proposed action, a cumulative impact analysis would not reveal an incremental effect attributable to the proposed Northeast NPR-A leasing decision.

There is no reliable methodology to assess the relation between leasing in NPR-A and changes in nationwide or worldwide oil and gas consumption levels. Leasing and future development of NPR-A will not measurably increase consumption, nor would a decision to forego leasing measurably reduce consumption. Consumption of oil and gas is driven by a variety of complex interacting factors including energy costs, energy efficiency, availability of other energy sources, economics, demography, and weather or climate. If the proposed leasing and anticipated development were not to occur in the Northeast NPR-A, consumption levels of oil and gas would essentially be unaffected with the potential production from NPR-A replaced by a combination

of imports, fuel switching, and other domestic production. While on a national basis lower levels of domestic oil and gas production could occur and may trigger some modest conservation measures having some benefits in terms of reduced greenhouse gas emissions, no single leasing decision would be expected to result in any discernable responsive conservation measures. This is particularly true with regard to NPR-A where the actual productive capacity is currently an unknown. Furthermore, it is not known whether or to what extent NPR-A oil and gas would be refined into plastics or other products that will not be burned, what mix of vehicles or power plants might utilize the product, or what mitigation measures would offset any such consumption.

Moreover, BLM does not regulate fuel consumption or carbon emissions at any level; nor does BLM dictate the destination of the oil and gas produced from a federal lease or the products to be refined from it, which would determine the emissions produced. Even if it were possible to causally connect greenhouse gas emissions from consumption to leasing in Northeast NPR-A, the effects from consumption are not only speculative but beyond the scope of agency authority or control. While the Energy Information Administration has reported emissions from a variety of petroleum products (e.g., aviation gasoline, motor gasoline, etc.), natural gas and other gaseous fuels (e.g., methane, landfill gas, etc.), electricity, coal, and renewable sources, an attempt to translate this information into emissions from the ultimate consumption of the oil and gas produced from Northeast NPR-A would be a highly speculative exercise unnecessary for the land management decisions for which BLM is responsible.

[Response to 25.027]

The IAP/EIS includes the effects of predicted future climate change in the cumulative effects analysis. While no specific mitigation is proposed to avoid, minimize, or mitigate the effects of climate change, the designation of lands as unavailable for or deferred from oil and gas leasing and the imposition of protections through stipulations and ROPs provide for mitigation. For example, river, coastal, and lake buffers protect areas that may be used by female polar bears in the future if the continued trend of landward and eastward movement of polar bear denning continues.

COMMUNICATION NUMBER 26
From Climate Policy Center et al.
Brooks Yeager, Executive VP

November 6, 2007

Secretary of the Interior Kempthorne
Northeast NPR-A Supplemental IAP/EIS comments
ENSR Corporation Suite 490
1835 South Bragaw Street
Anchorage, AK 99508

Re: Draft Supplemental Integrated Activity Plan/Environmental Impact Statement (SEIS) for Northeast portion of the National Petroleum Reserve - Alaska (NPR-A).

Dear Secretary Kempthorne:

We write to comment on the Draft Supplemental Integrated Activity Plan/Environmental Impact Statement (SEIS) for Northeast portion of the National Petroleum Reserve- Alaska (NPR-A).

This proposal includes alternatives which would allow leasing and development in the Teshekpuk Lake region, among the most sensitive and important wildlife habitats in the entire circumpolar Arctic. This is an area which has been protected in all past leasing programs, including those developed under Secretary Babbitt (1998) and Secretary Watt (1984). The 1998 Arctic ecology and wildlife biology as well as from the U.S. Fish and Wildlife Service, and the no-leasing decision in the ensuing record of decision was based correctly on this body of evidence.

At a time when Congress is actively considering requiring our land managing agencies to take account of climate impacts in their natural resource planning, **[26.001]** the current SEIS gives only superficial recognition to the new threat which accelerating climate change poses to the region's ecology. If anything, climate change in the Arctic will make the wildlife resources of the NPRA more, not less, vulnerable to stress from other sources. **[26.002]** The SEIS ignores regionally-specific developments relating to these changes, including the fact that polar bears are already denning on shore more frequently than in the past, and that walrus are hauling out in great numbers on the Chukchi Sea coast for the first time in recorded memory. **[26.003]** It also fails to address the potential cumulative impact of expanded oil and gas development on regional air quality, and the accumulating evidence that black soot and sulfate aerosols are accelerating the regional warming trend.

[26.004] Further, the SEIS in no way contravenes the scientific evidence that led Secretary Babbitt to exclude the Teshekpuk Lake area from drilling, and gives no basis in additional scientific evidence concerning the wildlife or habitat values of the area for contradicting the 1998 no-leasing decision.

The Teshekpuk Lake area is vital habitat for migratory shorebirds and waterfowl, and other wildlife, including the 45,000-head Teshekpuk Lake Caribou Herd. Native Alaskans on the North Slope rely on the area's abundance and diversity of wildlife. At a time when global warming is dramatically affecting the Arctic, the wisest and only responsible course of action is the continued protection of this singularly sensitive wildlife habitat and to require the most stringent environmental protections in any areas of the NPRA made available for leasing.

We urge the Bureau of Land Management (BLM) to adopt Alternative A, the "No Action" Alternative and to take no action that would allow petroleum development within the boundaries of the Teshekpuk Lake Special Area.

Thank you for considering our comments.

Sincerely yours,

Brooks B. Yeager
Executive Vice President
Climate Policy Center
1730 Rhode Island Ave. NW
Suite 707
Washington, D.C. 20036

For:

Adam Markham
Executive Director
Clean Air - Cool Planet
100 Market Street, STE 204
Portsmouth, New Hampshire 03801

[Response to 26.001]

BLM disagrees, the potential effects of climate change and how they could interact with each alternative and cumulative effects is considered for each resource area in Section 4.7.7

[Response to 26.002]

The landward and eastward change in polar bear den distribution is noted in the IAP/EIS in the analysis of the direct and indirect impacts of the alternatives in Chapter 4 and in the Cumulative Effects analysis. The recent high levels of use of terrestrial haul-outs along the Russian and Alaskan Chuckchi Sea coasts and apparent distributional changes among walrus is noted in Chapter 4's Cumulative Effects analysis.

[Response to 26.003]

The Draft EIS described both the current air quality conditions and regulations in Chapter 3 – Affected Environment, and indicated, to the extent possible, potential future air quality impacts due to additional leasing in Chapter 4 – Environmental Consequences. This included a comparison to site-specific conditions, as well as predicted future impacts, to existing and proposed development on the North Slope. However, as stated in the Draft EIS, “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

In addition, “black soot” (light absorbing carbon) and secondary ammonium sulfate aerosols would have variable effects on global climate change. At high altitudes, both constituents would generally cause radiative cooling, whereas deposition (especially of soot) on snow and ice would alter the albedo, and enhance melting. Regardless, the use of low sulfur diesel fuel by industry and communities would reduce the emissions of both constituents. The Final EIS has been modified to describe an agreement reached between the State of Alaska, BP Exploration, and ConocoPhillips to manufacture and use ultra low sulfur diesel fuel in all of their vehicles and

equipment (including contractors) beginning in January 2009 (see also <http://www.dec.state.ak.us/air/anpms/as/ulsd/ulsdhome.htm>).

[Response to 26.004]

The BLM maintains that the Draft Supplemental IAP/EIS considered an appropriate range of alternatives to meet the purpose and need described in Chapter 1 and that each alternative provides a multiple use strategy consistent with BLM's mission and applicable law and regulations.

COMMUNICATION NUMBER 27
From Ducks Unlimited
Alan Wentz, Group Manager Conservation

Ducks Unlimited National Headquarters
One Waterfront Way
Memphis, TN 38120-2351
(901) 758-3825 fax (901) 758-3850
www.ducksunlimited.org

Northeast NPR-A Supplemental IAP/EIS
ENSR Project Office
1835 South Bragaw Street, Suite 490
Anchorage, AK 99508

Dear Mr. Drucker:

Ducks Unlimited (DU) is pleased to provide comments on the Northeast NPR-A Supplemental Integrated Activity Plan/Environmental Impact Statement (IAP/EIS). We provided written comments on the draft EIS and also provided thoughts verbally during specific meetings with Bureau of Land Management (BLM) staff. Despite offering extensive comments, we feel many of our concerns have not been addressed and therefore we continue to believe there will be significant impacts of leasing on key waterfowl habitats.

Ducks Unlimited is the largest waterfowl and wetland conservation organization in North America with 1 million members and supporters. We are concerned about any action that could have significant impact on waterfowl and their habitats. DU scientists used our extensive remote sensing expertise in work with the Bureau of Land Management (BLM) in the mid-1990s to map vegetation cover types across the entire NPR-A. Therefore, we have unique field experience and knowledge related to waterfowl and their relationships to habitat in the area. We have an interest in how BLM's action in the Northeast NPR-A will affect wetland habitats and waterfowl resources, and have commented previously on proposed action in the Northeast Planning Area. We are commenting again because critical and unique habitats of important waterfowl populations remain threatened by BLM projects.

We supported the "No Action" alternative in comments dated August 18, 2004 on the draft EIS to amend the 1998 integrated Activity Plan for the 4.6 million-acre Northeast Planning Area. But, we also stated that DU is not opposed too additional oil and gas leasing in Northeast NPR-A. We stated then that we believed the draft EIS was highly deficient. It failed to provide any alternative that would have expanded leasing while protecting the globally significant waterfowl habitat on the Northeast Planning Area's coastal plain, including the Teshekpuk Lake Special Area (TLSA) and the Ikpikpuk Delta by avoiding leasing in those areas. The lack of such an alternative unreasonably and unnecessarily hampered discussion and consideration of a responsible, centrist approach to the development of energy resources in the Northeast NPR-A.

Ducks Unlimited staff subsequently met several times with Alaska and Washington Office BLM and other Interior Department staff before issuance of the ROD in January 2006 to discuss our concerns related to allowing oil and gas leasing in the TLSA. On January 4, 2007, we sent additional comments, this time responding to the Federal Register Notice that announced preparation of this Supplemental IAP/EIS. In those comments we reiterated our concern about the potentially irreversible and catastrophic impacts to important waterfowl populations and

habitats of opening all of the TLSA to oil and gas leasing. The goose molting area within the TLSA is especially critical to waterfowl of the Pacific Flyway because it contains unique wetland and tundra habitats that are free of human disturbance. This is an important habitat component for some species of waterfowl, and in particular for Pacific black brant and Western High Arctic brant, both of which are now at low population levels. Our concern also extends to other species that use the area, including white-fronted geese, tundra swans, spectacled eider, greater scaup, American wigeon, and Northern pintail, a species of concern due to the population level significantly below management objectives in the North American Waterfowl management Plan. Protecting the waterfowl resources of the TLSA must be included in the alternative for any leasing plan.

In January 7, 2007, letter we also pointed out the need for complete impact analysis of exploration, development, and transportation activities before any leasing activities should be permitted in the TLSA. We recommended that BLM use scientific and agency expertise to develop a science-based alternative for leasing in the Northeast NPR-A that protects waterfowl.

[27.001] The IAP/EIS describes qualitative differences in cumulative effects between alternatives. It appears that other agency or independent scientific expertise was not used to develop more complete quantitative analyses of possible effects, and that limits the validity of the IAP/EIS in projecting impacts on waterfowl and waterfowl habitat of activities related to and resulting from oil and gas leasing.

There are a few quantitative estimates of cumulative impacts to birds in the Northeast NPR-A listed in the IAP/EIS. The impacts projected are very sobering. Cumulative, additive, direct, and indirect impacts are anticipated to affect from 28% to 39% of the planning area, depending on which alternative is selected. The ROD issued in January 2006 used Alternative D as the basis for leasing action, and cumulative impacts under this alternative are now assessed to potentially affect 39% of the habitat in the planning area. The magnitude of this effect would clearly be devastating to critical habitat used by molting brant. Brant concentrate in very limited vegetation zones in the lakes north and east of Teshekpuk Lake, making brant particularly susceptible to cumulative impacts as described.

[27.002] Without a much more complete quantitative analysis of direct and indirect impacts, including the effects of climate change, we believe it is impossible to determine how the protective measures, leasing and occupancy restrictions in the various alternatives would provide any protection to waterfowl. Since impacts to bird and other biological resources are potentially irreversible and catastrophic, Ducks Unlimited strongly urges BLM to adopt a preferred alternative in the Final Supplemental IAP/EIS that avoids leasing in the TLSA. Or, at the very least, BLM should undertake a phased leasing approach and not offer lease sales in the TLSA until true impacts from leasing and development in the TLSA are understood.

Ducks Unlimited looks forward to continuing to work with BLM to find a balanced solution to oil and gas leasing in the Northeast NPR-A.

Sincerely,

W. Alan Wentz, Ph.D.

Senior Group Manager

[Response to 27.001]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage.

Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project-specific scale appropriate for exploration and development a more quantitative approach such as you suggest will be conducted at that time.

[Response to 27.002]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project specific scale appropriate for exploration and development a more quantitative approach will be undertaken and will result in appropriate project-specific mitigations.

COMMUNICATION NUMBER 28
From The Nature Conservancy
Randall Hagenstein, State Director

November 6, 2007

Mr. Jim Ducker
Bureau of Land Management
Alaska State Office
222 West 7th Avenue
Anchorage, Alaska 99513-7599

Subject: Comments on the Northeast NPR-A Planning Area, Draft Supplemental Integrated Activity

Plan/Environmental Impact Statement

Dear Mr. Ducker:

Thank you for inviting The Nature Conservancy to comment on the Northeast NPR-A Planning Area,

Draft Supplemental Integrated Activity Plan/Environmental Impact Statement. As with the 2005 Northeast IAP/EIS, our comments are based largely on the results of a comprehensive ecological assessment of the Alaska-Yukon Arctic ecoregion conducted by The Nature Conservancy. Ecological studies undertaken during the intervening years have highlighted additional issues of importance; thus, our comments also reflect concerns about climate change and adaptive management. These issues, as well as the conclusions of the ecological assessment, underscore our conviction that there are places in the Northeast NPR-A, such as the area around Teshekpuk Lake, that have outstanding biological values and should be managed with the primary goal of conserving those biological values. Until we are more certain about the impacts that development will have on the wildlife and habitat of these areas, we recommend delaying leasing of particularly sensitive areas such as Teshekpuk Lake, while going forward with leasing and development plans in other parts of NE NPR-A using a scientifically rigorous adaptive management approach. These recommendations are consistent with our previous comments and acknowledge the value of a balanced portfolio of development and conservation in a biologically and economically significant part of the U.S.

The intent of the Conservancy's two and a half year study of the Alaska-Yukon Arctic ecoregion--composed of the Brooks Range mountains and foothills, and the Beaufort coastal plain--was to identify the lands and waters most necessary to sustain the ecoregion's biodiversity. A full project description and the products of the assessment to date have been provided to BLM and are available online at:

<http://www.nature.org/wherewework/northamerica/states/alaska/preserves/art13301.html>. The results of the study point to several areas in the NPR-A that have higher than average wildlife and habitat values. Foremost among these biologically significant areas is Teshekpuk Lake (see attachment), identified as important for the following reasons:

- Three species targets are very heavily represented in the Teshekpuk Lake area; over 50% of their total distribution in the ecoregion occurs here. These three species and their key life stages include geese molting concentrations (100%), Teshekpuk Lake caribou mosquito relief

area (100%), Teshekpuk Lake caribou calving area (53%), Teshekpuk Lake caribou oestrid fly relief area (48%) and black brant nesting colonies (46%).

- The northern, eastern, and southeastern portions of the Teshekpuk Lake area are particularly high on the relative biodiversity index.
- Compared to the rest of the Alaska-Yukon Arctic ecoregion, as well as the relatively rich Beaufort coastal plain subregion, the Teshekpuk Lake area supports remarkable biodiversity values.

Clearly, Teshekpuk Lake has great significance to biodiversity, and requires careful management to ensure the long-term vitality of its fish and wildlife. One of the issues in the EIS is whether or not certain areas around Teshekpuk Lake should be closed to oil and gas leasing and/or surface activity.

[28.001] Should the area around Teshekpuk Lake be opened to leasing, it is incumbent on the BLM to prove that mechanisms for mitigating development impacts can ensure adequate protection of important species and habitats. Because they have not been tested in a systematic way--such as through a scientifically rigorous adaptive management program with clear benchmarks--the performance-based stipulations proposed in Alternatives B, C, and D cannot be guaranteed to adequately safeguard the significant biodiversity of the Teshekpuk Lake area against impacts from development and climate change. **[28.002]** Furthermore, the stipulations are written in such a way that the BLM can grant exceptions if the lessee/permittee can demonstrate to the Authorized Officer's satisfaction that the existing stipulation is technically not feasible, is economically prohibitive, or that an alternative is available that fully satisfies the objectives of the existing stipulation. The resulting lack of certainty of protection increases the risk that we could lose very significant portions of our biodiversity resources.

[28.003] Closures as a conservation tool offer the least risk to biodiversity and provide protection to the largest number of species within a given area. Therefore, the Conservancy recommends a delay in leasing of the sensitive areas around Teshekpuk Lake – specifically, the area labeled as ‘Public Land, Not Available for Leasing’ on Map 2-1 in the EIS, until potential impacts of development and climate change are better understood and are projected to be of an acceptable level to the long-term health of the species and habitats in the area.

During a deferral period we recommend:

- A thorough, quantitative analysis of the climate change impacts to wildlife and habitat (including shoreline erosion, sea level rise, forage opportunities, and habitat use) and an analysis of cumulative impacts that fully integrates predicted changes related to climate. Such analyses might include the following:
 - Baseline wildlife studies of the five life-stage targets which represent biodiversity values most at risk from a change in the current surface protection area: Teshekpuk Lake caribou calving, mosquito relief, and fly relief areas; geese molting concentration areas; and black brant nesting colonies.
 - Studies of changes in lake size and shoreline vegetation and predictions about how changes might impact waterfowl, including brant.
 - Analyses of shifts in bird concentrations and concentration areas.

- Analysis of potential changes in the calving area of the Teshekpuk Lake caribou herd-- from development and/or climate change—and how these changes may affect the rest of the herd's life cycle?
- Examination of vegetation shifts due to climate change. A number of terrestrial ecosystems defined for the Conservancy's ecoregional assessment occur only on the Beaufort Coastal Plain.¹ Four of these ecosystems (coastal wet sedge tundra, lowland lake, coastal barrens, and coastal grass and dwarf shrub tundra) are well-represented inside the current Teshekpuk Lake surface protection area but outside the area proposed in Alternative B as closed to leasing. Very little (4% or less) of each of these four ecosystems is currently found on lands managed for conservation suggesting that their conservation at Teshekpuk Lake could be important.²
- Development, implementation, and funding of a scientifically rigorous adaptive management approach to biological protection during exploration and development in other parts of Northeast NPR-A.
- Implementation of a monitoring plan for biological and subsistence resources.

The Conservancy believes that we should strive to balance our economic and environmental needs. A well-balanced management plan includes a range of conservation tools from closures to stipulations, depending on the specific place, species, and habitat of concern. The changing climate of the Alaskan Arctic may have pronounced effects on the dynamics of ecosystem relationships in the Teshekpuk Lake area and therefore climate change must be a focus of continuing assessment of the adequacy of any protection measures employed. [28.004] Conservation of the unique biodiversity of the Teshekpuk Lake area will also require an analysis of the impacts of development activities in the broader region of the Northeast section of NPR-A. We are eager to work closely with the BLM and other stakeholders in coming years to define and implement a science-based adaptive management framework that will improve our collective understanding of the dynamic biological systems of the NPR-A, the anticipated and unanticipated changes driven by rapid climate change, and the effects of oil and gas exploration and development.

We cannot overstate the biological significance of the unfragmented landscape of NPR-A, both within the context of the North Slope and from a circumpolar perspective. The BLM has described possible impacts of development in the EIS but a thorough quantitative analysis is needed before we can know what density and intensity of development the area is capable of absorbing. We urge BLM to delay leases in the critical habitat around Teshekpuk Lake and to establish rigorous adaptive management strategies in other biologically important areas of Northeast NPR-A.

Sincerely,

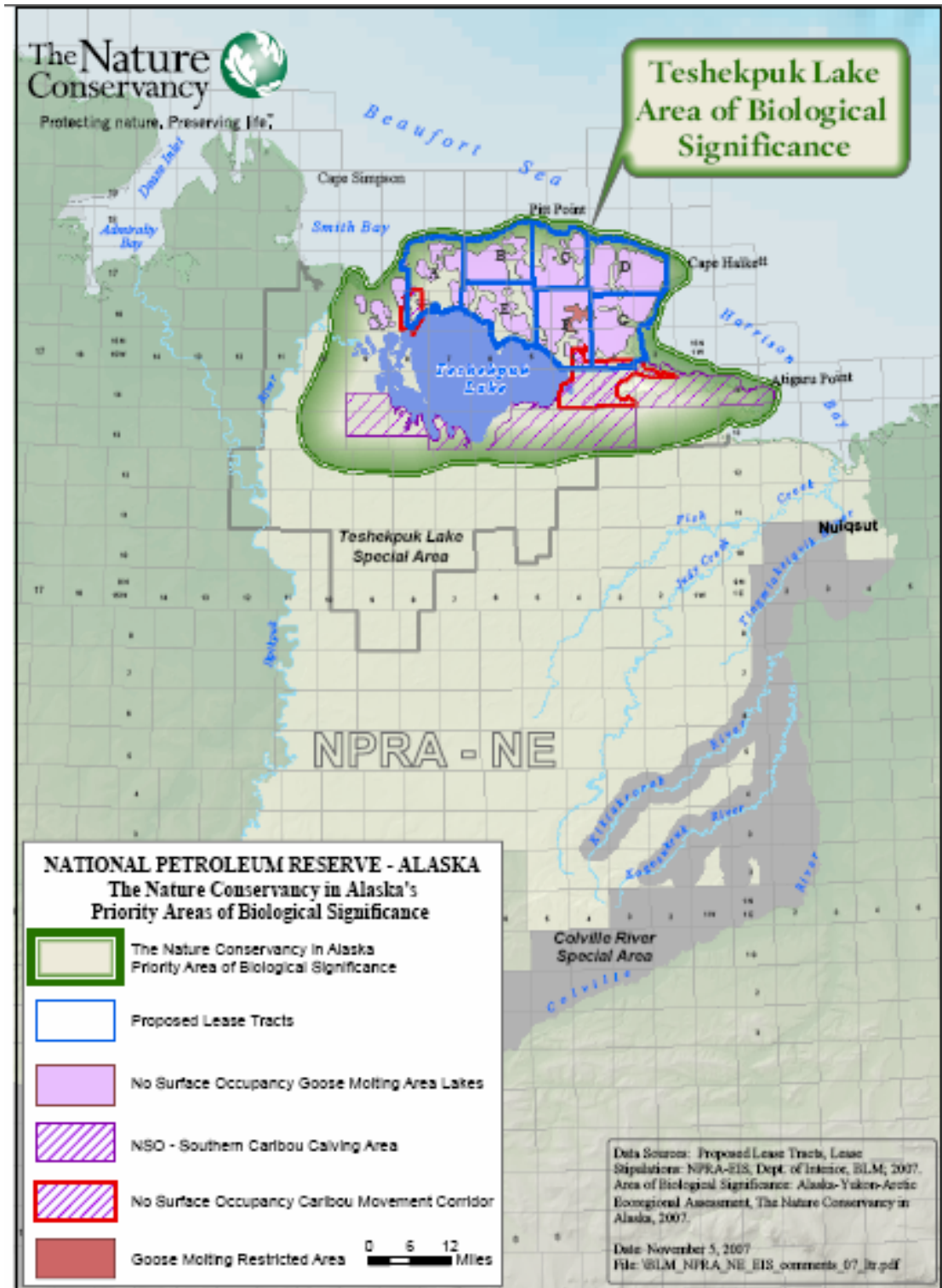
Randall H. Hagenstein

State Director

enc: attachment

1 See Update #2: Predictive Terrestrial Ecosystem Model.

2 See Update #3: Gap Analysis of Terrestrial Ecosystems for more information about the classification of lands managed for conservation and the conservation status of terrestrial ecosystems in the Alaska-Yukon Arctic ecoregion.



[Response to 28.001]

Because the BLM recognizes that specific measures to protect resources may not be effective in all cases, it is proposing in Alternatives B through D to adopt performance-based stipulations and ROPs. Under Alternative A, there is no means built into the measures to require alternative methods to protect resources. Under the performance-based stipulations and ROPs, the AO has the ability to learn from experience and, as appropriate, adopt new means to achieve the stipulation or ROP objective.

[Response to 28.002]

The comment confuses the provisions of the exception clause for Alternative A, which it paraphrases, with the requirement of the other alternatives that would allow other methods—alternative procedures as the Supplement terms them—to meet the objective. It is BLM's contention that the performance-based stipulations and ROPs are written in a way to be more responsive to the need to protect resources/uses of the planning area. For further discussion of the difference between the exception clause for Alternative A and the flexibility of performance-based stipulations and ROPs contained in the other alternatives, refer to the "Stipulations and Required Operating Procedures" discussion in Chapter 2.

[Response to 28.003]

Alternative D, the Preferred Alternative, as described in Chapter 2 adopts the strategy of deferring leasing in the lands indicated in the comment or, in the case of Teshekpuk Lake, not making the lands available for leasing. The BLM will continue to work with all interested parties to craft appropriate resource studies and monitoring to facilitate land management.

[Response to 28.004]

The IAP/EIS has addressed the potential impacts of development for the planning area as a whole.

COMMUNICATION NUMBER 29

From Northern Alaska Environmental Center

Pamela Miller, speaker at Fairbanks Public Meeting October 10, 2007

Thank you for this opportunity to speak. My name is Pamela A. Miller, and I live here in Fairbanks. And I've been involved with watching the issues on the North Slope of Alaska for about 20 years. And I work for the Northern Alaska Environmental Center. We'll be submitting more detailed comments in writing.

At this time, with the information that BLM has prepared, we can support the no-action alternative as the only one that's on the table for consideration. All the other alternatives will offer leases in internationally important goose molting areas and critical -- critical caribou calving and post-calving habitats north and east of Teshekpuk Lake. In fact, we believe that additional protection around the south side of the lake is warranted, based on new and the best scientific information. As well, we hope, in the future, that there can be permanent protection for this -- these critical areas north and east of Teshekpuk Lake.

In fact, many Interior secretaries over the years have kept lands off-limits to leasing in these critical areas, recognizing their importance. And we believe that -- that new information that BLM has collected in this process that was required by the court is -- just gives us more reason for precaution with respect to the habitats north of the lake.

There is some new information on coastal erosion and climate change, which adds to the double-whammy in effect that molting geese and vulnerable habitat -- caribou could face by -- they're already facing changes to their habitats that we're just starting to measure. On top of that there could be additional effects.

As well there, it was very good information on public health impacts to people on the North Slope, to the communities that, through the involvement of the North Slope Borough, and through a physician who conducted an initial health impact analysis, the social, as well as physical -- you know, kind of doctor -- health consequences, such as increased diabetes, increased other -- other health impacts are included in the report, and we commend the BLM for including that analysis.

There was also additional information because the polar bear has been proposed for listing under the Endangered Species Act by the Fish & Wildlife Service. And there are polar bear habitats within this area that we're talking about.

So we believe that it's important to have a balance in the National Petroleum Reserve. We recognize that it's a petroleum reserve; that there already is roughly four million -- almost four million acres available for leasing in this northeast part of the petroleum reserve. And across the whole North Slope there's quite a bit of land dedicated to the primary purpose of oil and gas development.

The lands at Teshekpuk Lake we believe are so special -- this is one place that we should reserve for the future generations for their known wildlife subsistence, cultural, and bird values that are enjoyed by Americans very far from here.

There's a couple of other specific recommendations.

[29.001] 1 We believe that in the 1998 decision, there was a -- I think it's a resource -- research management team that was pulled together to help decide what kind of information in the science realm should BLM have. It was a committee, it was an official committee with official notification. We think that was a good process, and that needs to continue into the future so that the BLM can have the best science.

We also believe that in the 1998 decision, we weren't entirely happy with everything that's in there, with -- there were 79 stipulations, many of them had loopholes. There was a good stipulation that called for no connecting roads outside of the NPR-A, and to kind of hold industry accountable to the rhetoric of "We can build roads" -- "oil fields without roads." In fact, I know from my experience that on land, all oil fields today have roads. But instead of having vast networks of roads, to hold them to the minimum amount of roads.

The new plan with the three-year -- three new alternatives roll back those stipulations and elim- -- and we can -- and we believe that as they were, they were a little bit stronger, they were attached to a lease in a more legally binding way, and we think that was a better approach.

As far as the cumulative impacts analysis, we think that BLM still hasn't taken the full approach that they need to with doing a scientifically rigorous analysis of potential scenarios of oil activities and infrastructure, both onshore and offshore, and from other potential development activities on the North Slope. We think a more scientifically rigorous method should be used. And, in fact, there's really -- you know, they don't kind of lay down, "Here is what oil impa-" -- "infrastructure could be there, look at what the wildlife is," and so on. And we think that still needs to be done.

[29.002] From a process standpoint, we believe that in this day and age, at least in Alaska, it's really important for people to be able to punch in some comments as an e-mail and send it off, instead of having to use the BLM's Web form. And we can appreciate there may be volumes of comments. 200,000 Americans wrote in in the last comment period, most of whom opposed opening the Teshekpuk Lake area to leasing. We think that's a good thing, and should be invited, not halted.

So other people, I'm sure, will speak to the values of the place, but it really is a cool place. I've been there, and the birds and the -- the intact landscape is pretty amazing.

Thank you for your time.

[Response to 29.001]

The BLM is responsible for ensuring that there is appropriate scientific baseline data and analysis to responsibly manage lands within the planning area. It continually assesses its need for such data and analysis. For further discussion of BLM's research and monitoring activities and why the agency considers the RMT unnecessary to reinstate, please see Section 4.2.3 entitled, "Research and Monitoring Consultation and Coordination."

[Response to 29.002]

The BLM provided multiple means to make comments. Written comments could be submitted by hand, through the mail, by toll-free fax, and through the website. Verbal comments were received at eight public meetings in Alaska and one public meeting in Washington, D.C. Approximately 150,000 comments were received.

COMMUNICATION NUMBER 30
From Northern Alaska Environmental Center
Pamela Miller, Arctic Coordinator

Dear BLM, **[30.001]** Our organization requests an additional 30 day comment period in order to have adequate time to analyze the draft supplemental EIS. We note that in October there are many oil related meetings and conferences, and other North Slope comment periods (including the Arctic Ocean) that are also taking place during this time and there are cumulative effects of responding to so much at once. We are also disappointed that the Fairbanks hearing is taking place on the same day as the International Oil on Ice Workshop in Anchorage, so our attendance at that conference will be curtailed in order to attend the hearing in Fairbanks.

Sincerely,

Pamela A. Miller

[Response to 30.001]

The BLM considered the request for extending the comment period to 90 days, twice the period required under NEPA, and extended the comment period to 74 days.

COMMUNICATION NUMBER 31
From Wildlife Conservation Society
Dr. Steve Zack and Joe Liebezeit,

We of the Wildlife Conservation Society welcome the opportunity to comment upon the Bureau of Land Management's Northeast National Petroleum Reserve Alaska Draft Supplemental Integrated Activity Plane / Supplemental Environmental Impact Statement of August 2007. The Wildlife Conservation Society is a science-based conservation group with a worldwide reach of projects and conservation activities centered on the conservation of wildlife and wild lands. We have been engaged in wildlife conservation activities in arctic Alaska since 2001, and have conducted field work in a remote tented camp near Teshekpuk Lake in the spring from 2005 to the present. We have also been conducting wildlife research near Prudhoe Bay in the existing oil fields since 2002. Thus, we bring considerable experience and expertise on arctic wildlife in general, and from the internationally important Teshekpuk Lake region in particular.

We strongly support the Vision of the BLM regarding balanced stewardship of our public lands and its resources. The National Petroleum Reserve-Alaska (NPR-A) is the single largest piece of public land in the United States (23.5 million acres), and it is dominated by one of the largest (if not the largest) wetlands complexes in the circumpolar arctic. Arctic wetlands are the most important habitat for arctic wildlife, particularly for migratory birds. Migratory birds, including waterfowl, shorebirds, and others, migrate, literally, from all continent and all oceans to breed in this region. The Teshekpuk Lake region of the NPR-A is particularly rich in wildlife resources, and encompasses two unique and internationally important wildlife phenomena: the large aggregations of goose species (prominently Pacific Brant and White-fronted Geese, but also large numbers of Snow Geese and Cackling Geese) undertake their flightless molt in the late summer northeast of Teshekpuk Lake. The geese come from Siberia, Alaska, and Canada to do so. The time of their flightless molt is when waterfowl are most energetically stressed and most easily prone to disturbance. The second unique wildlife feature in this region is the Teshekpuk Lake Caribou Herd, the only caribou herd in Alaska largely restricted to the coastal plain, and its dependence on the region northeast of Teshekpuk Lake for calving young in the spring and for insect relief in the summer months. From our own studies near Teshekpuk Lake, we have found that bird diversity, abundance, and nest productivity are generally higher in comparison to other regions we and our colleagues have studied in the coastal plain of Alaska. Aerial surveys conducted by the U.S. Fish and Wildlife Service show the Teshekpuk region to have high densities of waterfowl and other waterbirds, and to be a region of high diversity. Thus, the Teshekpuk Lake region is singular for its goose molt aggregations, its calving grounds of the Teshekpuk Lake Caribou herd, and remarkable for its diversity, abundance, and productivity of birds in general.

We at the Wildlife Conservation Society join many other groups and thousands of individuals in recognizing the importance of the Teshekpuk Lake region, and advocate for its protection, as have all Secretaries of State prior to the current administration. We feel strongly that there is ample room for development in the NPR-A, and that there can be a balance of responsible development and protection of key regions like that around Teshekpuk Lake.

We have commented upon previous planning documents put forth by the BLM regarding the NPR-A. The critical difference in this Supplemental IAP/EIS is the effort to remedy an insufficient cumulative effects analysis, as found by a U.S. District Court which vacated the Record of Decision. Therefore, our comments will primarily focus on the renewed cumulative

effects portion of this document. Our efforts will emphasize the wildlife aspects of the cumulative effects part.

A cumulative effects analysis evaluates incremental impacts of anthropogenic actions when added to other actions across time and space. Key determinations are to be made regarding the potential to interact or accumulate through time (reasonably foreseeable) and space, particularly when combined with other effects.

Two recent, peer-reviewed publications provide powerful examinations of cumulative effects in arctic environs and demonstrate the diverse forms of data (quantitative and qualitative) and analysis (prominently modeling) that can result in a credible effort capable of external discussion, consensus and debate. As such, these papers provide templates for conducting a transparent and defensible cumulative effects analysis.

The first example is by Johnson et al. (2005. Wildlife Monographs 160:1-36). They developed predictive models from wildlife distributional information, satellite imagery, and the proposed and actual locations of development to generate resource-selection models for large mammals (caribou, grizzly bear, wolf, and wolverine) to develop predictive models to understand patterns of avoidance and habitat use. Their models including evaluations of habitat use seasonally, and where animals exhibited avoidance a subsequent analysis of the reduction in high quality habitat used. The models examined interaction of several variables across space and time. It is an important study of cumulative effects in the arctic as it quantified multiple sources of disturbance and the effects on habitat displacement for arctic wildlife. Because their models are explicit (with both sources of data made clear and assumptions transparent) there is ample opportunity to validate the models with follow-up monitoring.

The second, recent cumulative effects analysis concerning arctic wildlife and development is by Nellemann and Cameron (1978. Canadian Journal of Zoology 76:1425-1430). They conducted helicopter surveys of caribou in the Kuparuk part of the existing oil fields, and noted the location and age-sex composition of individuals. They coupled these surveys with locations of infrastructure and examined statistically the relationships between caribou density and road density, with particular attention to calving females.

Thus both of the example efforts above at cumulative effects used spatially explicit data, accounting for habitat quality differences, of wildlife with well known habitat and seasonal requirements, in relation to proposed or actual infrastructure. The analyses are statistical and transparent, and allow for close discrimination of both sources of data and of assumptions to run the analyses. Critically for any credible cumulative effects analysis, the relationship among data sets was used to examine interactive effects and a quantitative series of results were generated that collectively examined effects in a cumulative way relevant to arctic environments and the nature of development in a spatially explicit manner.

[31.001] We have closely read over the revised effort in the current Supplemental IAP/EIS, with particular attention paid to the wildlife sections and the supposedly overhauled cumulative effects analysis sections. Our professional opinion is that no true cumulative effort was undertaken as most all effects mentioned were qualitative and vague and, most critically, there is no analysis of any kind to speak of. No interactive effects were jointly considered, let alone any compilation of effects that could credibly be called cumulative; all effects mentioned were mentioned in different paragraphs in vague and qualitative ways that in no manner made them a variable to be considered an effect, and no modeling, no use of spatially explicit GIS, no statistical effort of any kind, no integration of prevalent and growing climate change factors was integrated into anything analytical or substantive to meet any defensible definition of an

analysis. There is no there there. As scientists, representatives of an international wildlife conservation group, and as citizens, we are extremely disappointed by the SEIS supposed effort in a cumulative effects analysis that doesn't provide any credible and professional effort to deliver what is mandated by law, and has been a full year in the undertaking since an injunction by a federal court for failure to adequately do so in previous drafts.

The wildlife issues in the NPR-A and in the Teshekpuk region in particular require an open and transparent cumulative effect analysis of pending development proposals to allow informed public and expert comments in advance of such development. Excellent satellite imagery is readily available, the U.S. Fish and Wildlife Service has ample aerial survey data on spatially explicit abundance and diversity patterns across the entire North Slope for large wildlife species (caribou and waterfowl included), a diversity of publications provide empirical data on displacement patterns to wildlife due to infrastructure, quantitative data exists on how predator populations have increased with development, and quantitative estimates of disturbance and displacement of molting geese available. Recent publications and reports exist on the distribution and abundance of shorebirds in western arctic Alaska (Liebezeit and Zack 2005, 2005; Johnson et al., 2007 in Arctic). Thus, there exists an available and analogous opportunity to undertake a credible cumulative effects analysis worthy of our largest public land in the United States.

[31.002, 003, 004, 005, 006, 007, 008] We propose the following variables could be modeled in a spatial and temporal manner explicitly with modern GIS tools and capacity and reveal important interactive effects in time and space for the northeast NPR-A:

[31.002 cont'd] Wildlife is not uniformly distributed in western arctic Alaska in space (or across time). The USFWS data makes very clear that there are regions of high density and high diversity for different species and different groups of wildlife. These include data on the distribution of Endangered Species like the Spectacled Eider and BLM Sensitive Species like breeding Black Brant, King Eider, Long-tailed Duck, Red-throated Loon, and Yellow-billed Loon. (Arraying development in ways that reduce effects on these key areas would reduce population threat.)

[31.003 cont'd] The area immediately south and east of Teshekpuk Lake seems characterized as particularly important for diverse and abundant populations of breeding birds (USFWS data; Johnson et al., 2007) and perhaps characterized as having particularly high productivity (Liebezeit and Zack 2006). (This then appears to be a region of differentially high-quality habitat).

[31.004 cont'd] Caribou migrate to and from their calving grounds northeast of Teshekpuk Lake. Satellite and radio collars have documented these movement patterns in time and space, and provide critical information on necessary corridors the caribou travel to gain access.

[31.005 cont'd] The goose molting region northeast of Teshekpuk Lake is well-documented. The peculiar geography of the region lends insight as to why the aggregation happens there: large oriented lakes dominate the area, creating a landscape with narrow corridors of terrestrial habitat surrounded by large lakes. Any hypothetical mapping of development in this critical region would reveal how little land is available for molting geese, and thus the great threats of disturbance and displacement with any quantitative assessment of the unique geography here. Aerial and road vehicles and their displacement parameters can be modeled on this landscape. This is a necessary and heretofore unconsidered analysis by the BLM: the region is unique, and population displacement is confined as Teshekpuk Lake and the Beaufort Sea dramatically surround this region. Proposed development could risk the viability of thousands of molting

geese. In the absence of any real effort to ground-truth displacement and disturbance parameters, a spatially explicit examination of potential development and different parameters of displacement could reveal the severe implications of disturbance to these internationally important populations of geese in their most vulnerable part of their annual cycle.

[31.006 cont'd] The increase of predators and their proximity to infrastructure (e.g., fox near roads with culverts) is well known. Expansive development in the northeast NPR-A will necessarily be more similar to the existing oil fields than the now-isolated Alpine development (contrary to assertions in 4-742). Predators are associated with development for many more reasons than simply garbage (see 4-737). The concentration of increased arctic foxes in the goose molting area must be examined in the context of the unique geography and unique aggregations (and thus vulnerability) of geese in July and August.

[31.007 cont'd] A realistic assessment of permanent road development needs to be brought forth. Winter ice road seasons have collapsed (and presumably will continue to collapse) to a point where most all structures will need permanent road access. A roadless infrastructure is a misleading fantasy. Newer developments in Kuparuk are the relevant model here, and hypothetical scenarios could be developed in the northeast NPR-A of road deployment.

[31.008 cont'd] A much more serious accounting of the current and pending changes due to climate change in the arctic is seriously required. Climate change patterns are evident and have serious implications for both wildlife and development practices and deployment. A set of simple paragraphs noting some climate change effects is wholly insufficient. A cumulative effects analysis needs the integration of such effects examined in relation to geography. Some examples to be included in a real cumulative effects analysis would include:

Coastal shoreline erosion is dramatic and increasing. North of Teshekpuk Lake, fully 100 meters of shorelines was lost two years ago. Such losses are reducing terrestrial habitat, pushing salt water into previously fresh water lakes, and would seriously jeopardize any development near such shorelines. The core goose molting region is shifting eastward in part due to such forces. None of this was discussed. Shoreline erosion is being measured, and thus can and should be included in a real cumulative effects analysis.

Thawing of permafrost, thermokarst, and lake draining patterns are seen elsewhere in the arctic, as made clear by several publications. Are the wetlands in the NPR-A soon to be subject to such patterns? What would be the effects on wildlife habitat, on development infrastructure (loss of water for development; loss of stability for buildings over eroding permafrost; how would thermokarst prevalence affect the injection process and safety in oil drilling muds; etc.), and security of both resource issues in the near future?

What is the projected pattern of sea level rise on this low-elevation landscape? How do such projections affect the capacity to deploy and then dismantle (4-677) infrastructure?

What is the effect of sub-arctic species moving north into arctic faunas? For example, Red Fox, Grizzly Bear, and Moose have been noted as moving further north elsewhere in the arctic (and individuals are seen now in the NPR-A and east in the existing oil fields). What wildlife interactions (competition, predation, displacement) result from such faunal changes? Do such changes exacerbate stresses caused by development?

We cannot know for certain the cumulative effects of these and other issues raised by the possibility of expanding oil development into the wildlife-rich environs of western arctic Alaska. But we can have our federal land stewards to a credible job of undertaking a real cumulative

effects analysis, drawing from studies cited here and others, that lays bare scenarios and possibilities that can be available to experts and the public alike. We deserve no less.

Because of a deficient (even absent) cumulative effects analysis, we propose that Alternative A, the no action alternative, is the only reasonable alternative proposed. Alternatives C and D will intrude upon, and thus possibly irrevocably disrupt wildlife (caribou and molting geese) and disrupt important wildlife populations around the Teshekpuk Lake region, while Alternative B does not provide protection for migratory caribou to access their calving grounds and likewise fails to protect abundant, diverse, and productive wildlife populations south of the lake. Only with a real cumulative effects analysis can we, or any other stakeholder, adequately contrast such alternatives. Until that time, our hopes (and the interests of many other stakeholders and citizens) of balanced development, with real protection of the region around Teshekpuk Lake, can be realized.

Sincerely,

Dr. Steve Zack, Wildlife Conservation Society
Joe Liebezeit, Wildlife Conservation Society

[Response to 31.001]

Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown, that there is a lack of precise surface resource and use information for many resources and uses, and that a relatively small amount of total cumulative impacts are likely to be attributable to the alternatives considered in this Supplemental IAP/EIS, the additional methods of evaluating cumulative effects suggested in the comment would add little or no value to the impact analysis. BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 31.002]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project specific scale appropriate for exploration and development a more quantitative approach will be undertaken and will result in appropriate project specific mitigations.

[Response to 31.003]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project specific scale appropriate for exploration and development a more quantitative approach such as you suggest will be conducted.

[Response to 31.004]

Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown (NRC 2003), that there is a lack of precise surface resource and use information for many resources and uses, and that perhaps a relatively small amount of total cumulative impacts may be attributable to the alternatives considered in this Supplemental IAP/EIS, a quantitative analysis of cumulative effects suggested in the comment would add little or no

value to the impact analysis overall. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

The DSEIS documents the importance of those corridors and Lease Stipulation K-9 for Alternative D would reduce the impact in those corridors by prohibiting permanent facilities other than pipelines within them.

[Response to 31.005]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project specific scale appropriate for exploration and development a more quantitative approach such as you suggest will be conducted.

[Response to 31.006]

The BLM considers its analysis fully appropriate for the decisions to be made regarding which lands to offer for oil and gas leasing and what protections to adopt at the leasing stage. Separate NEPA analysis and permitting processes are required for exploration and development. When NEPA analysis are conducted at a project specific scale appropriate for exploration and development a more quantitative approach such as you suggest will be conducted.

[Response to 31.007]

The BLM has considered the arguments regarding whether it is reasonable to project that oil and gas development in NPR-A will occur with isolated sets of road-linked processing and production pads that are themselves not linked to the existing larger oil development infrastructure at Prudhoe Bay or to other isolated sets of processing and production pads. The Bureau continues to consider such a scenario the most likely way to develop oil and gas in NPR-A. The implication in the comment that infrastructure requires ice roads to accommodate winter resupply is not valid; snow-packed trails, which have a much longer winter season than ice roads, can also furnish winter transportation needs. We consider the arguments provided in the "Transportation" section, "Roads" subsection, in Chapter 4 to be valid. Such a scenario represents how Badami and Alpine have been developed.

[Response to 31.008]

Discussions of the possible effects of climate change on the resources of the planning area are specifically addressed in the Cumulative Impact sections for the various resources and uses in Chapter 4 as well as in an introductory section of the Cumulative Impact discussion entitled, "Climate Change Overview." The discussions include consideration of coastal erosion, changes to the permafrost and hydrology of the area, changes in the vegetative communities, among other climate-change induced alterations of the environment. The BLM considers the cumulative impact analysis of climate-change induced alterations of the environment of the planning area provided in the Final Supplemental IAP/EIS an appropriate level of analysis of the diverse resources of the planning area and the potential impacts to them.

COMMUNICATION NUMBER 32
From The Wildlife Society
Michael Hutchins, Executive Director/CEO

November 6, 2007

Northeast NPR-A Supplemental IAP/EIS Comments
Attn: Jim Ducker
ENSR Project Office
1835 South Bragaw Street, Suite 490
Anchorage, AK 99508

Fax: 888-907-3677

Dear Mr. Ducker:

This letter is in response to the August 2007 Draft Supplemental Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) for the Northeast National Petroleum Reserve-Alaska (NPR-A). The primary deficiency in the final Amended IAP/EIS identified by the U.S. District Court in September 2006 was the failure to adequately address cumulative impacts of development on wildlife resources within the NPR-A, many of which in turn are relied upon by subsistence hunters who reside on the North Slope. The Wildlife Society (TWS) believes that a rigorous and meaningful cumulative impacts analysis by the Bureau of Land Management (BLM) should include the direct and indirect impacts associated with potential oil and gas exploration, development, and production activities and the potential effects of climate change.

The Wildlife Society was founded in 1937 and is a non-profit scientific and educational association of nearly 8,000 professional wildlife biologists and managers, dedicated to excellence in wildlife stewardship through scientific and education. Our mission is to enhance the ability of wildlife professionals to conserve diversity, sustain productivity, and ensure responsible use of wildlife resources for the benefit of society.

In previous correspondence, TWS has consistently recommended continued protection of the Teshekpuk Lake Surface Protection Area, including 588,998 acres that were deferred from oil and gas leasing (No Leasing) and 268,861 acres of No Surface Activity, which were identified in the 1998 Record of Decision. The Wildlife Society submitted comments on the Draft Amended IAP/EIS (19 August 2004), Final Amended EIS/IAP (25 February 2005), and Supplemental IAP/EIS (8 January 2007), and TWS also met with the BLM (4 April 2005). In the above correspondence and meeting, TWS recommended that the BLM ensure protection of large lakes used by molting geese; habitats used by the Teshekpuk Lake Caribou Herd during calving, migration and insect relief periods; and wetlands that hundreds of thousands of migratory birds depend on during breeding, brood-rearing and staging. Our comments here will focus primarily on the IAP/EIS cumulative effects analysis. Our concern continues to be that the highly productive wetlands surrounding Teshekpuk Lake and the wildlife populations that depend on these seasonally important habitats in the Northeast NPR-A planning area could be negatively impacted and potentially irreparably damaged by opening these lands to oil and gas development.

General comments on cumulative effects analysis:

[32.001] The U.S. District Court required that cumulative effects analysis be a major objective of this supplemental IAP/EIS. Unfortunately, the analysis presented in this plan is mostly a general literature review and qualitative discussion of potential cumulative effects that does not incorporate the potential impacts of climate change consistently or rigorously. The IAP/EIS (e.g. 4-757, caribou) primarily describes qualitative differences in cumulative effects among alternatives rather than attempting to quantify differences with stated levels of uncertainty. Few analyses in the IAP/EIS appeared to incorporate comprehensive data in to a geographic information system (GIS) for spatial analysis, modeling, or quantifying the probability of effects at development thresholds. It would have been instructive to portray even simple scenarios of future industry infrastructure (roads, pipelines, pads) among development alternatives using a GIS and then overlay the condition and status of biological resources and subsistence harvest to quantify spatial relationships within the planning area, particularly in light of changing conditions on the North Slope (e.g. rate of coastal erosion that will reduce the area of insect relief for caribou north of Teshekpuk Lake). It does not appear that such evaluations were even attempted.

The IAP/EIS (4-756) states "...the large amount of natural variation inherent in the system limits our understanding of the consequences of climate change. This and the complexity of tundra ecosystems make predicting the effects of climate change on terrestrial mammals difficult." TWS recognizes the difficulty in evaluating climate change and the potential impacts on resources, including the level of uncertainty with forecasts. However, that is the purpose of this IAP/EIS, and in highly uncertain conditions, such as this, it is best to be conservative in making decisions that could have long-term effects on critical natural resources. Unfortunately, the document contains little quantitative analysis and lacked simulation modeling, trends analysis, or substantive GIS mapping on which to base decisions.

Wildlife professionals have provided detailed comments and expressed concern previously over the risk of development impacts on the wildlife resources in the Northeast Planning Area (Teshekpuk Caribou Herd, waterfowl and raptor nesting, goose molting, shorebird migration, plus federally threatened and endangered species). In light of these previous comments and recognized value of these resources, we believe this IAP/EIS lacks scientific rigor and is inadequate for making informed decisions regarding resource management for this important ecosystem within the Northeast NPR-A planning area.

Caribou:

The Teshekpuk Lake caribou herd is an important subsistence resource, providing most of the caribou harvested by the North Slope communities of Atkasuk, Barrow, Nuiqsut, and Wainwright. Telemetry data have documented that over 90% of pregnant cows calve in the area south, east, and north of Teshekpuk Lake. There is a narrow corridor of land between the east side of Teshekpuk Lake and the Kogru Inlet through which nearly all of the maternal cows must travel through shortly before or after calving to get to insect relief areas. In most years, more than 75% of the herd uses the area around and north of Teshekpuk Lake for relief during the insect season.

[32.002] The IAP/EIS (4-159) states that maternal females are displaced by no less than 1.2 to 2.4 miles from roads because of human activity. Roads and infrastructure would have to be placed outside of wetlands on the limited surfaces between the lakes in the Northeast planning area, particularly north of Teshekpuk Lake. After construction activity that could occur during winter, infrastructure will require year-round monitoring for safety and operations resulting in periodic and sometimes frequent surface travel, even during periods when caribou calve or seek relief from insects. We are unaware of any substantive attempt by the BLM to use GIS to

simulate potential road networks and produce 1.2 or 2.4 mile buffers on each side of such roads to calculate the amount of surface area in which maternal caribou would be potentially be displaced under various leasing alternatives.

[32.003] The IAP/EIS (4-753) states that in context to the entire Arctic Coastal Plain and North Slope, cumulative impacts on caribou habitat would be relatively small occurring on only 1.3% and the coastal plain and 0.29% on the North Slope. However, the discussion acknowledged that "...these estimates do not take into account the quality of habitat that would be impacted on the North Slope...Areas to the north and east of Teshekpuk Lake provide important calving, post-calving, and insect-relief habitat for TLH caribou. Thus, impact to caribou and other mammals from development in this area would likely be much greater than if development occurred in areas that were little used by caribou." Thus, while it concedes that the potential cumulative effects of development on the Teshekpuk Lake Caribou Herd could be greater, there was no attempt to quantify the potential cumulative effects on the herd.

[32.004] The IAP/EIS states (4-754) that the effects of oil and gas development "...on the TLH, CAH, and WAH caribou would accumulate with other past effects on these herds, although the likely magnitude of these effects is difficult to ascertain, especially given the increase in herd sizes that have occurred in recent years in spite of oil and gas development on the North Slope." The only Arctic herd that has significantly overlapped major oil and gas development is the CAH. To suggest that the magnitude of these effects is difficult to ascertain without first attempting to conduct a cumulative effects analysis demonstrates a lack of understanding of the science inherent in conducting an appropriate and comprehensive EIS.

Polar Bears:

[32.005] The IAP/EIS (4-789) describes impacts that may affect polar bears in the southern Beaufort Sea population. The focus is on the direct loss of tundra habitat, which makes up a relatively small percentage of the coastal plain. Seismic and exploration activity during late fall and winter are acknowledged to be the activities most likely to have adverse impacts on polar bears, primarily denning females and cubs. Unfortunately, there is no spatial analysis or attempt to measure the amount of coastal habitat impacted that are also denning areas. The continued reduction in ice cover in the Beaufort Sea from climate change will likely result in more polar bears using terrestrial habitats along the coastline for protracted periods of time, thus increasing potential conflicts with human activities, including oil development. The IAP/EIS states (4-791) that: "Recent past, present, and reasonably foreseeable actions that could affect polar bears are not expected to accumulate to the level that result in population level effects." There is no quantitative analysis or modeling to support this statement. In contrast, the U.S. Fish and Wildlife Service has found sufficient evidence to warrant listing of polar bears as a threatened species under the Endangered Species Act and prepared a proposed rule in January 2007.

Waterfowl and shorebirds:

The U.S. Fish and Wildlife Service has previously documented that the numbers of Pacific brant and the total number of all geese that use the area north and east of Teshekpuk Lake exceed those of any known molting area in the North American and Siberian Arctic. Changes in environmental conditions are expected to cause shifts in the distribution and abundance of goose populations utilizing the Teshekpuk area. The Service has also previously documented that shorebird breeding densities and concentrations of staging shorebirds are greatest at coastal locations within the NPR-A, particularly north and east of Teshekpuk Lake. Development within the Teshekpuk area will have disproportionately greater effect on

shorebirds than development further inland. Concerns are greatest for shorebird species that are declining and are found in greater than average abundance in the Teshekpuk Lake area, including dunlin, red phalarope, and ruddy turnstone. **[32.006]** Stresses associated with oil development (aircraft overflight or activity associated with surface occupation) could add to or accelerate impacts already underway to molting geese, breeding or migrating shorebirds, and other wildlife as a result of climate change. No attempt was made in the IAP/EIS to quantify the extent of spatial overlap between levels of disturbance in the four alternatives relative to molting or staging areas, or to assess the potential for displacement or increased energetic costs to the birds.

Summary:

The 2006 Record of Decision largely ignored the recommendations of The Wildlife Society, National Audubon Society, Pacific Flyway Council, Wildlife Management Institute, Ducks Unlimited, North Slope Borough, and the California Waterfowl Association. The Environmental Protection Agency recommended that the BLM maintain lands closed or under No Surface Activity restrictions as specified in the No Action Alternative. The U.S. Fish and Wildlife Service stated that avoiding surface disturbance in the most biologically sensitive areas, as presented in the No Action Alternative, would provide the greatest level of protection (and least risk) to wildlife, and was its preferred management approach.

The Draft Supplemental IAP/EIS does little to assure wildlife professionals that BLM conducted an adequate cumulative effects analysis on the risk of oil and gas development to the wildlife resources within the Northeast Planning Area of the NPR-A. Without a science-based plan and a credible quantitative comparison of alternatives, it is impossible to reliably estimate the impacts of the various alternatives considered, particularly in light of recent and forecasted trends associated with climate change. Under the circumstances, the precautionary approach and most responsible action is to support Alternative A; maintain the No-leasing and No Surface Activity areas in the Teshekpuk Lake Surface Protection Area; and maintain the lack of road connection between the Teshekpuk Lake Surface Protection Area and other oilfield developments on the North Slope. These options are supported by nearly all wildlife experts who have reviewed this plan.

TWS appreciates the opportunity to provide these comments to the BLM. Please contact me if you need a copy of any previous comments by TWS or literature cited therein. Thank you for considering the views of wildlife professionals.

Sincerely,

Michael Hutchins, Ph.D.

Executive Director/CEO

cc: Tom Lonnie, BLM Alaska State Director
Henri Bisson, BLM Deputy Director
Edward Itta, Mayor, North Slope Borough

[Response to 32.001]

Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown (NRC 2003), that there is a lack of precise surface resource and use information for many resources and uses, and that perhaps a relatively small amount of total cumulative impacts may be attributable to the alternatives considered in this Supplemental IAP/EIS, the additional methods of evaluating cumulative effects suggested in the comment would add little or no value to the impact analysis. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 32.002]

Cameron et al. (1992) showed decreased calving caribou density within 4 km (2.5 miles) of roads, but not a complete lack of calving caribou, and their results were statistically significant only within 1 km of roads. This is not to say that the observed, decreased density in the 1-4 km range was not real. If a larger sample size had been possible, the results may have been statistically significant but this is not known. Moreover, within the area affected by Lease Stipulation K-11 for Alternative D, those corridors between lakes not affected by the restricted surface occupancy (RSO), excluding pipelines, requirement are often 1-2 miles in width. This provides room both for adjustment of development proposals to better mitigate impacts to caribou and for caribou to move around developments and use drier habitats on either side of them. In addition, caribou will readily move through marshy areas (including those within the RSO's) and may prefer movement through some marshy types over movement through tussocks, but perhaps depend more on the drier habitat types for foraging. Finally, given the above and the fact that the location of oil in the planning area is unknown and that the type of development that would be proposed to extract any oil that might be found is also unknown (NRC 2003), the use of GIS to simulate potential road networks would add little or no value to the impact analysis already provided in the Supplemental IAP/EIS.

[Response to 32.003]

Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown (NRC 2003), and that there is a lack of precise, experience-based knowledge about how the Teshekpuk Lake caribou herd would react to development, attempts to quantify the cumulative effects to the herd would add little or no value to the impact analysis provided in the IAP/EIS. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 32.004]

For reasons provided in the prior responses, the BLM considers its approach to cumulative impact analysis for caribou appropriate for this IAP/EIS.

[Response to 32.005]

The text has been edited to clarify potential impacts of climate change on polar bears.

[Response to 32.006]

Given that the location of oil in the planning area is unknown and that the type and location of development that would be proposed to extract any oil that might be found is also unknown (NRC 2003), attempts to show spatial overlap between levels of disturbance would be misleading and add little or no value to the impact analysis provided in the IAP/EIS. More precise analysis of impacts will be possible when analyzing a specific proposal submitted for agency approval. The IAP/EIS discusses the potential for displacement and energetic costs to birds for each alternative in Chapter 4.

COMMUNICATION NUMBER 41
From Alaska Oil and Gas Association
Marilyn Crockett, Executive Director

November 6, 2007

Northeast NPR-A Supplemental IAP/EIS Comments
ENSR Corporation
Suite 490
1835 South Bragaw Street
Anchorage, AK 99508

Dear Sir/Madam:

The Alaska Oil & Gas Association (AOGA) is a private non-profit trade association. Its member companies represent the majority of oil and gas exploration, production, transportation, refining and marketing activities in Alaska.

AOGA continues to recommend Alternative C in the Draft Supplemental Integrated Activity Plan/Environmental Impact Statement (SEIS/EIS) for the Northeast National Petroleum Reserve-Alaska (NE NPR-A). This alternative makes available 100% of the planning area's 4.6 million acres for oil and gas leasing. Permanent oil and gas facilities, with the exception of pipelines and some roads, are prohibited from approximately 1,113,000 acres.

On the North Slope of Alaska each oil and gas activity is individually regulated and monitored. It has been said that no other developments in the world are as closely studied, regulated and monitored as oil and gas activities on the North Slope. Based on the performance-based stipulations and required operating procedures required under Alternative C, AOGA believes the NE NPR-A can be explored and developed to meet our Nation's energy needs and still maintain the highest standards of environmental excellence as indicated by a long and successful track record.

AOGA recognizes that the Bureau of Land Management (BLM) was mandated by court to address issues not considered in the NE NPR-A Amended IAP/EIS in January 2005. As a result, a few new sections have been added that address such issues as cumulative impact analyses, public health, and the potential listing of polar bears under the Endangered Species Act. Alternative C has since been modified to include mitigation measures and stipulations to address these issues. Our comments are detailed below.

Requirements given under Alternative C as potential mitigation measures (4.4.19.5):

1) Health Advisory Board: In proposals for permanent facilities, this measure requires that lessees provide an "appropriate analysis of potential public health impacts of the proposal and means proposed to mitigate these impacts as part of their development plan." The Health Advisory Board, as voluntarily designated by the North Slope Borough or other North Slope representatives, could offer advice to better coordinate and design public research and review proposals and suggest health mitigations to BLM.

Comment: **[41.001]** Rationale for the requirement of a public health analysis is not provided and a causal link between North Slope oil and gas development and the health of the Alaska Native population is not demonstrated. **[41.002]** Specific details as to what would be minimally required in the analysis should be clearly listed for planning and compliance purposes. **[41.003]**

The initiation of a Health Advisory Board is duplicative of existing health programs on the North Slope and it is unclear what authority and guidelines would be given to such a board.

2) Subsistence: This measure requires lessees to design and fund subsistence studies.

Comment: [41.004] This measure duplicates existing regulations provided under other Alternative C ROPs. [41.005] Specific details as to what would be minimally required in the study should be clearly listed for planning and compliance purposes. The term of the study should also be clearly determined. It is unclear if the presumed three-year term allows the inclusion of historical data collected by others, if such an accessible database exists, or if it is upon the lessee to collect all data. As such, this requirement could unnecessarily extend the permitting process time and without justification appears to transfer BLM responsibility to the lessee. In addition, consideration should be given to define what constitutes a complete monitoring plan rather arbitrarily defining it by its length.

3) Public Health Monitoring: This measure requires lessees to fund the design and implementation of a public health monitoring study to detect changes in health and social conditions three years before development through the life of the development.

Comment: [41.006] Rationale for the requirement of a monitoring program is not provided and a direct link between North Slope oil and gas development the health of the Alaska Native population is not demonstrated. [41.007] Specific details as to what would be minimally required to meet the measure should be clearly listed for planning and compliance purposes and should preferably be conducted by public health department personnel. [41.008] In addition, this measure duplicates existing monitoring programs such as Healthy People 2010 and Healthy Alaskans 2010 and appears to, without justification, transfer BLM responsibilities to lessees. [41.009] It is unclear if the presumed three-year term allows the inclusion of historical data collected by others, if such an accessible database exists, or if it is upon the lessee to collect all data. As such, this requirement could unnecessarily extend the permitting process time. Further consideration should be given to define what constitutes a complete monitoring plan rather arbitrarily defining it by its length. [41.010] Finally, this measure fails to acknowledge how such monitoring would be required if there is more than one development by multiple lessees or companies. Would each company be required to do a separate study? Or, can they coordinate and consolidate their monitoring efforts to meet each company's compliance responsibilities?

4) Control of Contaminant – related Health Risk: This measure requires lessees to design and fund a baseline study to determine the level of contaminants commonly associated with oil production in subsistence food species and their habitat as well as continue contaminant monitoring during the construction, operation, and abandonment of operations.

Comment: [41.011] As examples of contaminants of concern, benzene, toluene, ethyl benzene, and xylene are listed. However, as volatile organic hydrocarbons, these chemicals are not likely to accumulate in subsistence food species. In addition, [41.012] PCBs are also listed, but have not been associated with oil development since the use of electrical transformers which are typically no longer used. Based on chemicals presented, the need for contaminant studies is unsubstantiated.

5) Air Quality Monitoring and Management: This measure requires lessees to identify background air quality and meteorological data to predict future air quality conditions resulting from the proposed action and other Reasonably Foreseeable Future Actions. It also requires the

lessee to prepare a list of foreseeable emissions, complete modeling if directed, and monitor air pollutant emissions or impacts for at least one year of operation if directed.

Comment: [41.013] This measure duplicates existing regulations provided under the Clean Air Act and the National Ambient Air Quality Standards imposing additional costs and administrative burdens with no added benefit. In addition, [41.014] current air quality monitoring methods are not practical or feasible in remote areas of Alaska (i.e. diesel power required at remote sites would impact measurements). Existing monitoring stations should be used until new monitoring technologies are available.

6) Public Safety and Infectious Diseases: This measure requires that lessees include modules designed to ensure strict compliance with local and corporate drug and alcohol policies and train employees on how to prevent transmission of communicable diseases to local communities.

Comment: [41.015] The drug and alcohol measure duplicates corporate policies and practices which have been in place for many years. [41.016] Rationale for the requirement of a communicable disease program is not provided and a causal link between North Slope oil and gas development and an increase of communicable disease of the Alaska Native population is not demonstrated.

7) Oil Spills: This measure requires lessees to fund the institution of a scientific review panel and fund all monitoring subsequent to a spill that indicates a potential to substantially impact subsistence resources.

Comment: [41.017] This measure is duplicative of existing regulation under the Oil Pollution Act of 1990 imposing additional costs and administrative burdens with no added benefit. [41.018] Use of the word “substantial” is not clearly defined leading to conflicting interpretation and possible litigation.

Stipulations and Required Operating Procedures (ROPs) given under Alternative C (Appendix E):

Stipulation K-1: This stipulation prohibits permanent oil and gas facilities within three miles of a river’s high water mark. [41.019] This stipulation should be changed to allow for a site specific determination as some areas may warrant shorter setbacks. [41.020] In addition, the stipulation states that setbacks will be measured from the bank of the river as determined by the hydrology at the time of application. This method is inconsistent with that used in Northwest NPR-A. To ensure consistency, AOGA recommends that river setbacks be measured from the centerlines.

[41.021] Stipulation K-5e.5: This stipulation states that fixed-wing aircraft takeoffs and landings shall be limited to an average of one round-trip per day. AOGA recommends that this daily limit allow for more flexibility to account for employee safety, inclement weather, remoteness of site, wildlife migrations, and hunting seasons.

[41.022] Stipulation K-5e.6 and ROP F-1e: This stipulation and required operating procedure states that flight altitudes within the Teshekpuk Lake Caribou Habitat Area be limited to 2,000 feet. This may conflict with altitudes necessary to conduct BLM-required surveys such as wildlife monitoring.

[41.023] ROP B-1: This ROP states that water withdrawal from rivers and streams during winter is prohibited. This ROP contradicts new regulations provided by the State of Alaska that allow winter water removal from the Colville River to construct annual ice bridges.

[41.024] ROP E-7c: This ROP states that a minimum distance of 500 feet between pipelines and roads shall be maintained. This ROP contradicts previous recommendations by the 1994 report of the Alaska Caribou Steering Committee that identified a minimum distance of 350 feet with a maximum separation distance of 1,000 feet.

ROP E-11: This ROP states that spectacled and/or Steller's eiders and yellow-billed loon surveys shall be conducted by the lessee for at least three years before authorization of construction if a site is within an eider survey area or within 1 mile of a lake 25 acres or larger. This ROP could unnecessarily extend the permitting process time. [41.025] Further consideration should be given to define what constitutes a complete survey rather arbitrarily defining it by its length.

Summary

As acknowledged by BLM under Potential New Mitigation Measures in 4.6.19.5 Potential Effects on Oil and Gas Development:

The expense of the above potential mitigation measures varies widely, from insignificant to potentially millions of dollars. To the extent that the potential mitigation measures would add expense to oil and gas activities, they could discourage leasing, exploration, and development of oil and gas.

[41.026] The costs associated with developing and implementing the potential mitigation measures can not be overstated as many of these measures appear to transfer BLM responsibilities to lessees. While AOGA understands the concerns that these measures are attempting to address, [41.027] AOGA strongly recommends that BLM ensure that the measures included in the Final SEIS: directly meet the concern as shown by historical scientific data or other evidence; enlist the most cost-efficient requirements; do not duplicate or contradict existing measures, regulations, or programs; and do not include any arbitrary planning requirements or subjective terms that can easily lead to litigation due to opposing interpretations.

To minimize the expense of these mitigation measures even further, [41.028] AOGA also recommends that BLM carefully assess all monitoring programs and research requirements to ascertain where administrative, operational, and cost efficiencies can be realized. In particular, any mitigation efforts that can be shared, such as public health monitoring, by companies that agree to coordinate and collaborate should be highly encouraged by BLM requirements. Details regarding in what circumstances companies can share compliance and how the requirements can be shared should be clearly given.

Conclusion

The environmental record of oil and gas operations on Alaska's North Slope provides the solid foundation and basis for supporting continued development in NPR-A. For elaboration, please consider our comments made for the NE NPR-A Amended IAP/EIS in January 2005. Through unique regulation under local, federal and state law in addition to the Performance-Based Stipulations and ROPs, AOGA believes that Alternative C can meet the Nation's need for additional energy sources while still maintaining the highest environmental protection and continuing in our role as a model for the world.

Thank you for your consideration of our comments.

Sincerely,

MARILYN CROCKETT
Executive Director

[Response to 41.001]

The analysis of public health impacts is appropriate under NEPA. As discussed in the Draft EIS/IAP (see, for example, the Public Health sections of Chapter 3 and 4), the issue of public health has been raised by numerous stakeholders. The potential causal linkages between North Slope oil and gas development and the health of the Alaska Native population are discussed in multiple sections of the DEIS (see, for example, the Public Health sections of Chapter 4).

[Response to 41.002]

The text of the measure has been revised to provide clarification regarding the scope of requirements under this potential mitigation measure. The analysis would be approved by the AO, and should utilize a process, such as health impact assessment, that ensures a systematic and comprehensive assessment of potential impacts to public health, as outlined in the measure. The final study design would be dependent upon the specific proposed activities, location in relation to human populations and subsistence activities, and other factors that would be evaluated in a project-specific proposal.

[Response to 41.003]

The Potential Mitigation Measure has been revised and no longer contemplates creation of a Health Advisory Board.

[Response to 41.004]

The BLM disagrees. The BLM is unaware of other measures in Alternative C or other alternatives that duplicates all elements of the subsistence potential mitigation measure described within the Public Health subsection.

[Response to 41.005]

The final study design would be dependent upon the specific proposed activities, location in relation to human populations and subsistence activities, and other factors that would be evaluated in relation to a specific development proposal. The AO would be able to approve use of applicable historical data collected by others. The measure has been revised to provide clarification in response to this comment.

[Response to 41.006]

The rationale for the potential mitigation measure is discussed under Potential Benefits and Residual/Unavoidable Impacts. The potential links between activities expected under the proposed action and public health are discussed in sections of Chapter 4 addressing Public Health.

[Response to 41.007]

The measure has been modified in response to this comment. The intention of the measure is to detect changes in health status that might be related to the oil and gas development anticipated under the proposed action. As such, responsibility for tracking these potential effects would lie with the developer.

[Response to 41.008]

BLM has revised the text of the potential mitigation measure 3, "Public Health Monitoring," to clarify the requirement. The measure proposes a limited monitoring program, and is intended to augment rather than replace or duplicate existing surveillance. Examples of some indicators that might be pertinent for such a monitoring program are found in (GNWT 2003) and (ERG 2007). These citations are not included to suggest a specific monitoring program, but rather to provide examples of the types of indicators that might prove relevant to a specific project proposal and are not commonly tracked by existing surveillance programs. The final study design would be dependent upon the specific proposed activities, location in relation to human populations and subsistence activities, and other factors that would be evaluated in relation to a specific development proposal, as stated in the measure.

The intention of the measure is to detect changes in health status that might be related to the oil and gas development anticipated under the proposed action. As such, responsibility for tracking these potential effects would lie with the lessee.

[Response to 41.009]

The AO would be able to approve the use of applicable historical data collected by others. The final study design would be dependent upon the specific proposed activities, location in relation to human populations and subsistence activities, and other factors that would be evaluated in relation to a specific development proposal, and would be determined in consultation with appropriate public health experts and subject to approval by the AO. The text has been modified in response to this comment.

[Response to 41.010]

The text has been modified to address this comment.

[Response to 41.011]

The text of the potential mitigation measure has been modified to address this comment.

[Response to 41.012]

The text of the potential mitigation measure has been modified to address this comment.

[Response to 41.013]

The BLM recognizes that ambient air quality monitoring may be required by different agencies under different regulations (including, but not limited to monitoring required by the Alaska Department of Environmental Conservation, Division of Air Quality, under the Federal Clean Air Act, and subject to EPA oversight). Monitoring required by BLM would be implemented based on the FLPMA. However, BLM simply would not require "duplicative" air quality monitoring if information collected under the Clean Air Act also met BLM's needs under FLPMA.

[Response to 41.014]

The BLM is aware of concerns regarding the potential for power generating systems to impact air quality measurements. It will take this factor into consideration when considering this potential mitigation measure. The agency, however, is also aware that some air quality monitoring technology does not require either highline power or diesel generators. It is premature to either require or eliminate any particular monitoring method at this time. The appropriate monitoring methodology would be determined once a specific need is identified.

[Response to 41.015]

The potential mitigation measure has been modified to address this comment.

[Response to 41.016]

The rationale for this potential requirement is discussed in "Potential Benefits and Residual/Unavoidable Impacts." The potential causal linkages are discussed in Chapter 4, in subsections on Public Health.

[Response to 41.017]

The OPA does not specify a specific mechanism through which adequate expertise will be enlisted to monitor and prevent adverse impacts to subsistence and public health from a large oil spill with a potential for substantial impacts to subsistence resources.

[Response to 41.018]

The potential mitigation measure would apply in the case of an oil spill with “a potential for substantial impacts to subsistence resources” so that it would not apply to the many spills of small size that could not conceivably cause notable impacts to subsistence resources. For larger spills the AO will have to use his or her judgment, in consultation with appropriate experts, to determine whether there is a potential for impacts that could substantially affect subsistence resources.

[Response to 41.019]

Stipulation K-1 identifies resource protection objectives that are to be met. The distance of the setback in the Requirement/Standard is considered appropriate to meet those objectives in most cases. Performance-based measures such as K-1, however, allow for flexibility to tailor site-specific requirements to meet the objectives, including the possibility that in some areas a shorter setback may be adequate to meet the objectives.

[Response to 41.020]

The BLM has considered the question whether setbacks should be from the centerlines or banks of rivers. The BLM has determined that it is better for the resources and uses of riparian areas if the setback is measured from the bank.

[Response to 41.021]

The text of Stipulation K-5(e)(5) has been clarified to better reflect the BLM's intention.

[Response to 41.022]

The BLM has added text to ROP F-1 and Stipulation K-5(e)(6) to clarify its intention to not have the identified flight altitude restrictions preclude scientific wildlife monitoring.

[Response to 41.023]

The BLM does not manage the waters of the Colville River in lands near the Northeast NPR-A planning area, so State practice regarding the Colville River is not pertinent and no contradiction exists.

[Response to 41.024]

The BLM considers it prudent to maintain the current 500-foot distance cited in the requirement/standard at ROP E-7(c). Studies, including one by LGL Alaska Research Associates, Inc. (Cronin, M.A., W.B. Ballard, J.Truett, and R. Pollard. 1994), have shown that additional protection is provided with more than the 350-feet minimum distance between pipelines and roads.

[Response to 41.025]

The design of the surveys required by ROP E-11 will have to reflect the proposed development and the science at the time the survey is being conducted.

[Response to 41.026]

The BLM has reviewed the potential mitigation measures in the Final IAP/EIS with these factors in mind. Further discussion may be found in response to more specific comments.

[Response to 41.027]

The BLM has reviewed the potential mitigation measures in the Final IAP/EIS with these factors in mind. Further discussion may be found in response to more specific comments.

[Response to 41.028]

The BLM may allow several permittees or lessees to combine their efforts to meet their individual obligations for research and monitoring. Text has been added to the monitoring discussion in Chapter 2 to clarify this point.

COMMUNICATION NUMBER 42
From Resource Development Council, Inc.
Carl Portman, Deputy Director

November 6, 2007

NE NPR-A Supplemental IAP/EIS Comments
ENSR Corporation
1835 South Bragaw Street, Suite 490
Anchorage, Alaska 99508

Dear NE NPR-A Planning Team:

On behalf of the Resource Development Council for Alaska, Inc. (RDC), I am writing to urge the Bureau of Land Management (BLM) to adopt Alternative C as the Preferred Alternative in the Final Supplemental Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) for the Northeast National Petroleum Reserve-Alaska (NE NPR-A).

RDC is a statewide, non-profit, business association comprised of individuals and companies from Alaska's oil and gas, mining, timber, tourism and fisheries industries. Our membership also includes Native regional and village corporations, local governments, organized labor and industry support firms. RDC's mission is to help grow Alaska's economy through the responsible development of the state's natural resources.

As we have consistently stated in earlier comments regarding NPR-A, RDC believes full leasing should occur in the planning area. Three decades of oil and gas activity in the Arctic clearly demonstrate that industry has the capability to operate throughout Alaska's North Slope while maintaining high standards of safety and environmental sensitivity.

New advances in technology have greatly reduced industry's footprint, allowing for the preservation of more surface acreage within the oil fields for wildlife habitat. In addition to technological advances, scientific studies conducted since 1998 have greatly improved the agency's knowledge of the biological resources within the planning area.

New exploration and production technologies will be best employed if industry is allowed to explore those lands within the petroleum reserve with the highest prospects for a commercial discovery. Given NPR-A was specifically designated by Congress for the production of energy resources and the need for new oil production has increased, it is important that BLM provide access to the Northeast planning area's best prospects. Alternative C would provide such access. North Slope oil and gas deposits have occurred almost exclusively within a 25-mile strip of the Beaufort Sea coastline. Alternative C would open acreage within this belt acreage that could hold significant deposits.

Under the recently-released IAP/EIS, 373,000 acres north and east of Teshekpuk Lake is further evaluated for leasing. This area was off-limits in the 1998 plan for the Northeast area, but was open to leasing in the amended 2005 plan. It is considered to be among the most oil-rich acreage in NPR-A, perhaps containing two billion barrels of oil. RDC recognizes this area contains large populations of waterfowl and caribou and is coveted by local residents for subsistence hunting.

While Alternative C would open 100 percent of the Northeast area's 4.6 million acres to oil and gas exploration, permanent facilities would be prohibited on more than 1,113,000 acres. A variety of protective measures and stipulations would be employed to mitigate impacts of energy development and other land uses on resources in the planning area. These protective measures would provide BLM flexibility to adopt management decisions to uncertain and changing environmental conditions, and provide more consistent management across the entire northern portion of NPR-A.

Alternative C would retain the setbacks around streams and lakes provided by the 1998 IAP/EIS and it would establish new setbacks north and east of Teshekpuk Lake. It would also utilize performance-based stipulations and mitigation measures.

RDC continues to maintain its support for Alternative C. However, it also recognizes Alternative D has merit as a reasonable compromise that provides access to much of NPR-A's most prospective acreage while providing measures to mitigate impacts. Alternative D should be adopted as the Preferred Alternative, should Alternative C be eliminated in the decision-making process.

While Alternative D would open 95 percent of the Northeast area to oil and gas exploration, permanent facilities would be prohibited on more than 1,451,000 acres. Management practices would emphasize consultations with local residents and coordinated scientific studies to protect wildlife habitat, subsistence use areas, and other resources. Under Alternative D, Teshekpuk Lake (approximately 211,000 acres) would be indefinitely deferred from leasing. This deferral would preclude exploratory drilling and pipeline construction.

Alternative D makes available approximately 389,000 acres that were unavailable in the 1998 Record of Decision. This acreage is within the area of highest oil and gas potential in the Northeast planning area, and is within the Teshekpuk Lake Special Area. A number of protective measures have been developed as requirements and standards to protect important resources and subsistence activities.

[42.001] While RDC supports reasonable mitigation measures, future leasing, exploration and development could be discouraged by inefficient costly requirements that duplicate and contradict existing standards and regulations. Mitigation measures should be science-based and cost efficient.

They should not include arbitrary requirements or subjective terms open to wide-ranging interpretations. Moreover, many of the proposed measures appear to transfer BLM responsibilities to the lessee, compounding expenses of new oil and gas activities.

With regard to controlling the expense of proposed mitigation measures, **[42.002]** RDC recommends that BLM identify where administrative, operational and cost efficiencies can be realized on various monitoring programs and research requirements. In some instances, companies should be encouraged to share mitigation efforts when they agree to coordinate and collaborate on specific projects and programs. It would be helpful if BLM could identify when and how companies could share efforts and compliance requirements.

Alaska's oil and gas industry continues to innovate and invest in environmentally-sound business practices. It operates under the most advanced and stringent regulations and oversight in the world. Under this set of circumstances, it makes sense to open the entire Northeast planning area for leasing, or at the very least, the areas outlined under Alternative D.

Oil and gas development in the petroleum reserve would benefit the economy by creating increased revenues and employment, while enhancing energy and economic security. Revenues, employment and oil and gas production would likely be greater under Alternative C than under the other alternatives.

Thank you for the opportunity to provide comments on the Draft Supplemental IAP/EIS.

Sincerely,

Carl Portman
Deputy Director

[Response to 42.001]

The BLM considers the stipulations and ROPs presented in this Supplemental IAP/EIS as reasonable measures to protect the resources and uses of the lands that the agency manages. The ability of the potential mitigation measures to prevent unnecessary and undue degradation will be considered before any are adopted in the ROD. Suggestions for changes to specific protective measures are addressed in response to comments on specific measures.

[Response to 42.002]

Cost efficiencies such as is suggested in this comment may be appropriate and advantageous both for the permittees/lessees and for the protection of the resources of the planning area. Industry is encouraged to consider them and include them in proposals for BLM's consideration in the permitting process. Text has been added to the "Monitoring" subsection of Chapter 2 acknowledging this. These efficiencies, however, will depend upon the specific proposals being brought forward to BLM by multiple parties; speculating on what these might be at this point is premature.

COMMUNICATION NUMBER 43
From Anadarko Petroleum Corporation
David McBride, VP, Environment, Health & Safety

November 6, 2007

NE NPR-A Supplemental IAP/EIS Comments
ENSR Project Office
1835 South Bragaw Street
Suite 490
Anchorage, Alaska 99508

Re: Supplemental Draft Integrated Activity Plan/Environmental Impact Statement

Northeast National Petroleum Reserve Alaska

Dear Sir/Madam:

Anadarko Petroleum Corporation (Anadarko) submits the following comments on the Bureau of Land Management's (BLM) Draft Supplemental Integrated Activity Plan/Environmental Impact Statement for the Northeast National Petroleum Reserve (NE NPR-A SIAP/EIS) for your consideration. The BLM released the NE NPR-A SIAP/EIS for public comment on August 24, 2007. 72 Fed. Reg. 48661 (Aug. 24, 2007). On October 12, 2007, BLM published a notice extending the comment period to November 6, 2007.

Anadarko is one of the largest independent E&P companies in the world and has been a major participant in the exploration, development, and production of oil and gas on the North Slope of Alaska for over ten years. We are a proven operator on the North Slope and an active drilling partner with ConocoPhillips in the Alpine field, the largest onshore domestic oil discovery in over a decade. Anadarko intends to pursue additional exploration projects across the North Slope both on its own and with partners, including projects within the NE NPR-A. Because of our substantial interests, Anadarko has been an active participant in the BLM's plans for the NE NPR-A.

The National Petroleum Reserve - Alaska (NPR-A) encompasses approximately 23 million acres of highly prospective petroleum lands on the North Slope of Alaska. There is a long history of Congressional enactments governing management of the Reserve that make it clear that the Reserve's non-petroleum values must be protected in a way that does not jeopardize its oil and gas development potential. The President's energy policy also directs the Secretary of the Interior to "consider additional environmentally responsible oil and gas development , based on sound science and the best available technology, through further lease sales in the [NPR-A]."

These enactments make clear the Congress has directed BLM to strike a balance between development of oil and gas resources with protection of the environmental, subsistence and wildlife resources.

The NPR-A potentially contains extensive oil and gas resources, although the extent and location of these resources within the NE NPR-A are currently unknown. Exploration is the critical first step in defining the extent of these resources and the economic feasibility of their development. Therefore, all of the lands within the NE NPR-A should be made available to oil and gas leasing. Environmentally responsible exploration on these leases can be achieved through the application of appropriate stipulations, required operating procedures (ROPs) and

development of site specific permitting requirements through an analysis conducted under the National Environmental Policy Act.

Anadarko is fully committed to environmentally responsible development of resources within the NPR-A as demonstrated by its performance in the NPR-A for the last ten years. We have successfully maintained the delicate balance between oil and gas development and protection of the environment in which those recourses occur. Moreover, we are dedicated to working closely with the applicable State and Federal agencies, Native corporations and organizations and environmental groups to ensure that the concerns of all are addressed throughout the exploration, development and production of the resources of the NPR-A.

We continue to believe BLM should, as outlined in the SIAP/EIS, apply lease stipulations and ROPs similar to those applied in the Northwest NPR-A. Such an alignment of operating procedures will encourage more efficient resources management within the National Petroleum Reserve and the Northeast Plan Area in particular.

General Comments

In its scoping notice for the SIAP/EIS, BLM stated it was preparing this document in response to the U.S. District Court for the District of Alaska's decision in *National Audubon Society v. Kempthorne* in which the District Court invalidated the BLM's record of decision for the NE NPR-A after finding, in part, that the BLM had failed to adequately analyze the cumulative impacts. BLM has gone beyond what was required to address the deficiencies noted by the Court and has included a discussion of public health concerns. Although Anadarko appreciates the need to address public health concerns, **[43.001]** it is not clear from the discussion presented in section 3.4.10 how these issues are tied to oil and gas development. Moreover, **[43.002]** BLM's statements regarding the potential effects to public health as outlined in Chapter 4 (in particular Section 4.4.19) are not substantiated by the information present in the document. For example, in discussing the potential effects, BLM states, without any further analysis or explanation as to how it reached this conclusion that "public health efforts of Alternative B would be similar in nature, but greater in magnitude than those associated with Alternative A." SIAP/EIS at 4-373. Then, again, without any real analysis other than to cite unsubstantiated concerns regarding the efficacy of the proposed mitigation measures, BLM concludes "in the face of expanding development, particularly with the development of important substance areas, it is likely that there would be substantial unmitigated impacts to health and the social determinants of health." SIAP/EIS at 4-381. BLM should either remove this statement or provide more analysis to support this conclusion.

Based on this unsubstantiated conclusion, BLM then proposes to adopt a number of new ROPs that will impose significant and potentially duplicative requirements on lessees. Concerns with each of the proposed measures will be discussed more below. Overall, Anadarko urges BLM to carefully review these proposed measures, especially in light of the pre-existing mitigation measures, which we believe will address the concerns raised in the discussion on public health. **[43.003]** Should BLM carry these public health mitigation measures through to the final document, BLM must provide a clear explanation regarding how each of the proposed measures will address impacts that will supposedly be left unaddressed by the existing measures. In addition, **[43.004]** BLM should provide more of an explanation and analysis regarding how such impacts stem from oil and gas operations.

The NPR-A is one of the last few onshore areas remaining in North America that could contain large, conventional oil and gas resources. As such, these oil and gas resources must, consistent with the President's energy policy, be made available for environmentally responsible

development to meet the ever growing energy demands of our nation. We believe BLM should adopt an alternative that will achieve BLM's dual mandate to open the area to environmentally responsible oil and gas development while simultaneously minimizing potential impacts to the soil, water, air, vegetation, wildlife, archeological and paleontological resources.

[43.005] If BLM believes the whole area should not be opened to leasing, we urge BLM to defer a decision whether to open the Teshekpuk Lake area to leasing until such time as BLM has had the opportunity to learn from exploratory drilling and development activities what, if any, additional stipulations, ROPs or permit requirements would be necessary to protect the resources in the Teshekpuk Lake area. Such an alternative would balance protection of the sensitive resources of the NE NPR-A with development of its energy resources. We believe that concerns regarding potential impacts to environmental resources and wildlife that may be raised as a result of opening the area north and east of the Lake to leasing can be addressed through site-specific analysis for a given project and the adoption of appropriate seasonal stipulations, especially if such a decision is deferred until BLM has obtained more experience and information in addressing these issues. Although, Anadarko believes it may be appropriate given the heightened concerns regarding leasing in Teshekpuk Lake area to defer leasing there, Anadarko opposes deferral or phased leasing in the balance of the NE NPR-A.

[43.006] The BLM should clarify in the final document that not all of the ROPs will be imposed on all projects. Those that are to be included as conditions of approval should only be imposed if the site-specific analysis conducted under the National Environmental Policy Act for that project supports its inclusion.

We acknowledge that potential need for set backs to streams and rivers located within the NPR-A. However, we urge BLM to review and address some of the extensive setbacks that would be imposed. In our opinion, **[43.007]** the proposed three-mile setback is unnecessary, and it is twice the one and a half mile setback recommended in 1998. Similarly, imposition of the one-mile set back for the Colville as a lease stipulation is not justified.

[43.008] It appears that a number of the ROPs unnecessarily duplicate existing regulatory requirements imposed by either state or federal agencies. BLM should review all of the ROPs and include only those that are not duplicative. We have highlighted a few examples of duplicative ROPs below.

Specific Comments

[43.009] ROP A-2: This required operation procedure (ROP) mandates that lessees prepare a comprehensive waste management plan that is to be submitted to the authorized officer for approval. The requirement is unnecessarily duplicative of existing regulatory requirements imposed by other federal and state agencies. We recommend that BLM modify the requirement to remove those provisions, such as disposal of pumpable waste products, which are addressed by other applicable regulations.

[43.010] ROP A-4: This ROP requires a lessee to develop a comprehensive spill prevention and response contingency plan in accordance with 40 C.F.R. § 112. Lessees must already prepare such a plan under existing regulation, and including this requirement as a ROP is unnecessarily duplicative. **[43.011]** Moreover, subparagraph (b) seems to imply that even if a lessee has a permit authorizing a discharge into marine waters, BLM could still prohibit such a discharge. Such a decision is beyond the scope of BLM's authority, and we recommend that BLM revise the ROP to delete this provision.

[43.012] ROP A-6: This ROP prohibits the surface discharge of reserve pit fluids unless the lessee has an applicable federal, state and/or local permit. This requirement seems unnecessarily duplicative of already existing regulations; therefore, we recommend that it not be included in the ROD.

ROP E-11: This ROP requires a lessee to conduct surveys for spectacled and stellar's Eiders and yellow-billed loon for three years prior to any authorization for construction. **[43.013]** Requiring three years of surveys prior to construction will needlessly extend the required planning process and may deprive a lessee of the ability to utilize the full lease term as construction would not be allowed prior to the completion of the requisite surveys. We recommend that BLM shorten the number of years such surveys would be required and provide a definition of what activities would fall within the prohibition on construction.

ROP E-12: The ROP requires the development of an ecological land classification map prior to the approval of facility construction. **[43.014]** This ROP needs to be clarified to specify who will be responsible for the creation of such a map. We respectfully suggest that such a requirement should rest with BLM rather than a lessee. Although we agree that such a map may be a useful tool, mandating its development prior to any and all facility construction is unnecessarily broad.

G-1 Lease Stipulation: We fully support a requirement to rehabilitate lands upon the conclusion of oil and gas development activities, and BLM's ability to waive such a requirement in certain circumstances. However, **[43.015]** we do not support BLM's ability to require that some or all of the facilities be left in place, especially without adequate compensation to the lessee for those facilities along with an appropriate release of liability. Therefore, we recommend that if this provision is retained in the ROD, it be modified to delete the following sentence: "The AO may determine that it is in the best interest of the public to retain some or all facilities." In the alternative, if the sentence is retained, we recommend BLM revise it as follows: "The AO may determine that it is in the best interest of the public to retain some or all of that facilities; however, such a requirement will be subject to BLM and the lessee reaching an agreement regarding compensation and liability."

ROP H-1: Under this ROP, lessees are required to consult directly with affected communities in an effort to "provide opportunities for participation in planning and decision making to prevent unreasonable conflicts between subsistence uses and oil and gas and related activities."

Anadarko fully supports consultation with the affected communities and is committed to a close, co-operative relationship with the potentially affected Native organizations and people.

However, **[43.016]** we also strongly believe that BLM has a strategic role to play in such consultation. Therefore, we recommend that BLM revise this ROP to provide for BLM's active participation in and facilitation of any consultation thereby achieving consistency and a better understanding of all the stakeholders issues and concerns. **[43.017]** If the provision is retained without the above-recommended revision, it should nevertheless be revised as follows:

Subparagraph (b) should be revised to delete any requirement to provide documentation of consultation as part of a plan of operations. Such a requirement is unnecessary and unduly restrictive. In addition, **[43.018]** the last sentence of this paragraph should be deleted. Any analysis of the potential effects of a proposed plan of operations will be included in the applicable environmental analysis of the project prepared by BLM. Mandating such a requirement for a plan of operation unduly shifts BLM's burden to conduct this analysis onto the lessee.

K-1 Lease Stipulation: With respect to Fish Creek, this lease stipulation prohibits the placement of a permanent oil and gas surface facilities within 3 miles of the bank's high water mark. **[43.019]** We believe this provision should not be a lease stipulation and should instead

be a ROP that would only be imposed if site-specific analysis supports the need to impose such a restriction. Moreover, [43.020] the setback should not be automatically imposed as 3 miles. If the site-specific analysis supports a shortened setback, then such a shortened one should be imposed. That same is true for the prohibition regarding the location of surface facilities within a half mile of Judy Creek. The same is true for the one-mile set back proposed for the Colville River. It should not be a lease stipulation, should only be imposed if justified by site-specific conditions and should be clearly worded to allow imposition of shortened setback.

[43.021] K-4 Lease Stipulation: This stipulation should be revised to remove subparagraph (c). Winter exploration activities do not impact molting geese; therefore, this provision is unnecessary.

[43.022] K-5 Lease Stipulation: Subparagraph (a) should be revised to clarify what constitutes an "acceptable study."

Health Advisory Board

Under this proposal, the North Slope Borough (or a similar entity) would establish a health advisory board to "offer advice to better coordinate and design public health research on the North Slope, and ...review major development proposals and suggest health mitigations to proponents and permitting agencies." SIAP/EIS at 4-382. Anadarko does not oppose the establishment of such a Board; however, [43.023] it is unclear as to BLM's authority and the need to mandate establishment of such a Board. Should BLM retain this provision in the final document, it should more clearly explain its authority to require the creation of such a Board and the need for the Board. [43.024, 025, 026, 027, 028] Anadarko does object to BLM's proposal to require "lessees in proposals for permanent facilities within the planning area to provide the HAB or any other source of recognized public health expertise identified by the AO an appropriate analysis of potential public health impacts of the proposal and mean proposed to mitigate these impacts as part of the development plan." [43.024 cont'd] First, such a requirement appears to mitigate these impacts as part of the supposed purpose of the Board. [43.025 cont'd] Second, it improperly shifts BLM's burden to analyze these potential impact to the lessees, who will likely have to hire outside contractors to prepare such an analysis. [43.026 cont'd] Third, BLM has not defined what would constitute "an appropriate analysis." [43.027 cont'd] Fourth, BLM states that it would "also analyze public health impacts and potential mitigation measures in any NEPA analysis examining such a proposal." Thus it appears the analysis prepared by the lessees would merely be a duplicate of the analysis to be prepared by BLM. [43.028 cont'd] BLM has failed to provide any rational basis for including this requirement, and therefore, it should be deleted from the final document.

Subsistence Study

Under this proposal, a lessee would be required to design and fund studies to "determine the historic and current use of resources dependent on proposed development area and ...the significance of the proposed development are to caribou and any other species important to subsistence food intake." SIAP/EIS at 4-382. [43.029] This provision unnecessarily duplicates existing measure such as ROP/s H-1, H-2, E-1, E-7 and E-12. [43.030] In addition, it again, unfairly and unnecessarily shifts BLM's burden to lessees. Moreover, the requirement to submit the studies in conjunction with a permit application will unduly extend the time required before any permits can be submitted. Because it needlessly duplicated existing measures, BLM should refrain from including this provision in the final document.

Public Health Monitoring

Under this proposal, lessees would be required to design and fund a health monitoring study. As proposed here, the study "shall include a minimum of three years of pre-development data and continue over the life of the project." SIAP/EAS at 4-383. **[43.031]** It is not clear from the SIAP/EIS whether data currently exists. In its absence, under this proposal, before a lessee could even propose a project, it would need to collect three years of data. **[43.032]** This requirement unfairly shifts BLM's obligations onto the lessees. Moreover, **[43.033]** if the HAB is created, this would appear to be a function that should be undertaken by the HAB and not individual lessees. Anadarko recommends BLM refrain from adopting this proposal in the final document.

[43.034]

Control of Contaminant-related Health Risk

BLM has completely failed to justify the need for this provision and therefore it should be deleted from the final document.

[43.035] Air Quality Monitoring and Management

This provision appears to be needlessly duplicative of existing state and federal requirements and should be deleted.

[43.036] Oil Spills

This provision is unnecessarily duplicated of existing state and federal requirement and should be deleted.

The NPR-A is one of the most promising areas in the United States for the discovery of large deposits of oil and gas. Anadarko has demonstrated that it can, and will, operate in a manner that is protective of the cultural and environmental resources of the NPR-A, through the use of best management practices and application emerging technologies. We are committed to a collaborative effort between industry, Native organizations, and state and federal agencies to ensure that these important oil and gas resources are developed in such a manner to protect the varied resources of the NPR-A.

We appreciate the opportunity to comment. Should you have any questions regarding the above suggestions, please contact the undersigned.

Sincerely,

ANADARKO PETROLEUM CORPORATION

David J. McBride

Vice President
Environmental, Health & Safety

[Response to 43.001]

Chapter 3 contains a description of the affected environment. The discussion in section 3.4.10 is a general description of the baseline health status, and, to the extent possible, the important determinants of health in North Slope communities.

[Response to 43.002]

Section 4.4.19.2, in its entirety, is a discussion of the statement: "The public health effects of Alternative B would be similar in nature but greater in magnitude than those associated with Alternative A."

The analysis in section 4.4.19.2 identifies a number of potential adverse public health impacts from expanding development in the region. A comparison of these impacts to the effects of the stipulations and ROPs (section 4.4.19.3) demonstrates that some of the potential health effects identified in section 4.4.19.2 are not mitigated by the existing measures.

[Response to 43.003]

The potential public health mitigation measures have been modified somewhat in response to this and other comments on the Draft EIS/IAP. The potential benefits and residual/unavoidable impacts are discussed after each potential mitigation measure.

[Response to 43.004]

The potential linkages between oil and gas operations that could occur under the alternatives and public health outcomes are discussed in detail in relevant subsections on public health in Chapter 4 of the Draft IAP/EIS.

[Response to 43.005]

Alternative D, the Preferred Alternative, as described in Chapter 2 adopts the strategy of deferring leasing in the lands indicated in the comment or, in the case of Teshekpuk Lake, not making the lands available for leasing.

[Response to 43.006]

The discussion of "Stipulations and Required Operating Procedures" in Chapter 2 describes circumstances in which ROPs would not be included as conditions of approval. These include when the requirement is met prior to submission of the application; when the procedure, practices, and design features contemplated by a ROP are integral to a proposal; or when the AO determines that the provisions of the ROP would not be applicable for geographic (e.g., the relevant resource is not in the area of the proposal) or other reasons.

[Response to 43.007]

The three-mile setback from the lower portion of Fish Creek is consistent with the decision of the 1998 IAP/EIS for Northeast NPR-A. The BLM considers this setback and the one-mile setback along the Colville River to reflect good management both for important natural resources and for subsistence use.

[Response to 43.008]

As the land manager, the BLM has determined that responsible land management argues for including some requirements that may duplicate those of other agencies.

[Response to 43.009]

As the land manager, the BLM has determined that responsible land management argues for including some requirements that may duplicate those of other agencies.

[Response to 43.010]

As the land manager, the BLM has determined that responsible land management argues for including some requirements that may duplicate those of other agencies.

[Response to 43.011]

The BLM considers ROP A-4(d) as written to be appropriate. It states that wastewater discharges or disposal of domestic wastewater into marine waters would be prohibited by BLM "unless authorized by a NPDES or state permit."

[Response to 43.012]

As the land manager, the BLM has determined that responsible land management argues for including some requirements that may duplicate those of other agencies.

[Response to 43.013]

The BLM considers three years of survey as required by ROP E-11 to be appropriate for good management to protect eiders and yellow-billed loons.

[Response to 43.014]

We believe that an ecological land classification map described in ROP E-12 is necessary, and is the industry's responsibility not BLM's, to provide prior to the approval of the construction of a facility.

[Response to 43.015]

The lessee/permittee may obtain BLM's approval to build gravel roads and pads and place facilities on them, but remains under an obligation to remove them to the AO's satisfaction. As described in the "Abandonment" discussion of Chapter 4, BLM anticipates that all above-ground facilities will be removed upon abandonment, though gravel may or may not be removed based on several factors at the time of abandonment. If the AO permits some gravel pads to remain in place, this would constitute a savings for the lessee/permittee. The BLM has not adopted any change in the language of Stipulation G-1.

[Response to 43.016]

The BLM has not adopted new language in response to this comment on ROP H-1. The Bureau considers it important for industry to consult directly with affected communities as part of the application process so that affected communities have first hand information concerning the proposed activity/development and potential conflicts with subsistence activities are clearly understood and addressed.

[Response to 43.017]

The BLM does not consider the requirement for documentation of consultation efforts as included in the requirement/standard at ROP H-1(b) to be either unnecessary or unduly restrictive. Consequently, it has not altered the wording to address this comment.

[Response to 43.018]

Requesting an applicant to supply the BLM with an estimate of the potential effects as part of the use authorization process is common and in fact is a question to be answered on standard

form 299: "Application for Transportation and Utility Systems and Facilities on Federal Lands." This information does not take the place of a NEPA analysis (which in all likelihood will be paid for by the applicant) but, among other things, is useful as it makes the applicant consider possible impacts early in the process when mitigation such as operation/design modifications can most easily be built into the proposal.

[Response to 43.019]

The BLM considers that K-1 should be a stipulation rather than a ROP. Some of the setbacks are considered very important for multiple reasons, including subsistence use as well as resource protection. Because large setback may preclude access to some oil and gas, it is important that the provisions be included as stipulations on the lease. For a discussion of the rationale for including some provisions as stipulations rather than ROPs, see the discussion under "Stipulations and Required Operating Procedures" in Chapter 2.

[Response to 43.020]

Stipulation K-1 identifies resource protection objectives that are to be met. The distance of the setbacks in the Requirement/Standard is considered appropriate to meet those objectives in most cases. Performance-based measures such as K-1, however, allow for flexibility to tailor site-specific requirements to meet the objectives, including the possibility that in some areas a shorter setback may be adequate to meet the objectives.

The BLM considers that K-1 should be a stipulation rather than a ROP. Because large setback may preclude access to some oil and gas, it is important that the provisions be included as stipulations on the lease. For a discussion of the rationale for including some provisions as stipulations rather than ROPs, see the discussion under "Stipulations and Required Operating Procedures" in Chapter 2.

[Response to 43.021]

The requirement/standard at K-4(c) for exploration is appropriately worded. It is designed to protect "goose-feeding habitat types," which could be impacted during winter exploration while the birds are absent.

[Response to 43.022]

The AO will determine what an acceptable study is when site and project specific information is available. The nature of the proposal and the state of current knowledge relevant to that proposal will help to frame an acceptable study design.

[Response to 43.023]

The BLM does not intend to establish, nor require that lessees establish, a Health Advisory Board. The Final IAP/EIS removes mention of formation of an HAB from the Potential Mitigation Measures. If the AO identifies another appropriate source of recognized public health expertise, under this Potential Mitigation Measure, the BLM would require that lessees provide this entity with an appropriate analysis of public health impacts of proposals for permanent facilities, and a means to mitigate these impacts. The text of this measure has been modified to clarify this.

[Response to 43.024]

The Potential Mitigation Measure has been revised and no longer contemplates creation of a Health Advisory Board, but as the Potential Mitigation Measure states, public health experts, such as those in the NSB's Health Department and the Alaska Native Tribal Health Consortium, could offer lessees and permitting agencies expert advice on means to mitigate public health impacts of oil and gas development.

[Response to 43.025]

There would not be a shift in the financial burden associated with analyzing the potential impacts to public health. The BLM would require this analysis as part of the basic permitting requirements for proposed development on leased tracts. It may be required as part of the application package or be developed during, and perhaps as part of, the NEPA analysis, and in either case would feed into the NEPA analysis. While the BLM would be responsible for preparation of an appropriate NEPA analysis of proposed permanent oil and gas facilities, the lessee would be responsible for paying for preparation of that analysis. Input from public health experts would facilitate creation of a quality analysis.

[Response to 43.026]

The text has been modified in an effort to clarify the issue raised in this comment.

[Response to 43.027]

The analysis that would be required under the Health Impact Analysis Potential Mitigation Measure would contribute to the NEPA analysis and may be done either as part of the application, in tandem with the NEPA analysis, or, with the AO's approval, as part of the NEPA analysis. In any case, the lessee would be responsible for paying for the analysis.

[Response to 43.028]

As described in "Potential Benefits and Residual/Unavoidable Impacts," the measure would establish a framework to ensure that adequate effort would be directed to the evaluation, monitoring, and mitigation of potential health effects described in the relevant subsections on Public Health in Chapter 4.

[Response to 43.029]

The BLM disagrees. The BLM is unaware of other measures that duplicate all elements of the subsistence potential mitigation measure described within the public health subsection.

[Response to 43.030]

The analysis that would be required under the Subsistence Potential Mitigation Measure would contribute to the NEPA analysis, which the lessee would be responsible for paying, so there is no shift in the financial burden. If the referenced studies are done in conjunction with other work, including certain wildlife studies that are part of several stipulations and ROPs, the BLM anticipates that there would be little, if any delay, in application processing.

[Response to 43.031]

The potential mitigation measure has been modified in order to clarify the issues raised in this comment.

[Response to 43.032]

The intention of the measure is to detect changes in health status that might be related to the oil and gas development anticipated under the proposed action. As such, responsibility for tracking these potential effects would lie with the developer.

[Response to 43.033]

The Final IAP/EIS has been revised to remove mention of an HAB. Health experts, such as those at the North Slope Borough Health Department and the Alaska Native Tribal Health Consortium would be responsible for reviewing information presented by lessees and/or the BLM, but not for monitoring or baseline data gathering.

[Response to 43.034]

The BLM has discussed the justification for this requirement in relevant subsections on Health Problems Related to Other Contaminants, and in Potential Benefits and Residual/Unavoidable Impacts. The text of the measure and pertinent subsections have been modified.

[Response to 43.035]

The BLM recognizes that ambient air quality monitoring may be required by different agencies under different regulations (including, but not limited to monitoring required by the Alaska Department of Environmental Conservation, Division of Air Quality, under the federal Clean Air Act, and subject to EPA oversight.) Monitoring required by BLM would be implemented based on the FLPMA. However, BLM simply would not require "duplicative" air quality monitoring if information collected under the Clean Air Act also met BLM's needs under FLPMA.

[Response to 43.036]

The OPA does not specify a specific mechanism through which adequate expertise will be enlisted to monitor and prevent adverse impacts to subsistence and public health from a large oil spill with a potential for substantial impacts to subsistence resources.

COMMUNICATION NUMBER 44
From ConocoPhillips Alaska, Inc
Dale Summerlin

November 5, 2007

Via Hand-Delivery

BLM Public Information Center
222 West 7th Avenue
Anchorage, Alaska 99513-7599

Dear Northeast NPR-A Planning Team Leader:

ConocoPhillips Alaska, Inc. ("CPAI") submits the following comments to the draft Supplemental Integrated Activity Plan/Environmental Impact Statement ("SEIS") in response to The Bureau of Land Management's ("BLM's") requests published in the Federal Register on August 24, 2007 and October 12, 2007. CPAI appreciates BLM's consideration of the enclosed comments.

CPAI desires to draw particular attention to our attached comments on proposed health stipulations. CPAI is concerned about the health of North Slope residents; however, the specific causes of health related issues are complex, with a high degree of uncertainty. Indeed, BLM fails to demonstrate a clear link between negative health impacts and North Slope oil and gas development. CPAI is particularly concerned that twenty plus years of ambient air monitoring data, collected at great cost and in accordance with state and Federal protocols, are discounted.

Additionally, the proposed health stipulations largely duplicate existing federal and state programs.

CPAI supports the adoption of performance-based stipulations and required operating procedures ("ROPs"). These protections will provide a framework that enables compliance efforts to be more efficient, and allow for modification of oil and gas operations/practices as new technologies are continually developed. This in turn allows industry to continue operating in a manner that not only protects workers but also protects the environment in which industry operates and local residents subsist. Conformance with performance-based stipulations will also allow for consistency with the Record of Decision ("ROD") issued on January 2004 for the Northwest Planning Area of the Petroleum Reserve. Consistency in requirements across the boundaries of the two planning areas will make compliance efforts more efficient and will provide greater clarity for operators.

CPAI supports the use of sound science to determine infrastructure locations. Establishing no surface occupancy ("NSO") buffers, in advance of higher resolution development studies, limits the lessees' and BLM's ability to position facilities in a manner that minimizes environmental impact while ensuring maximum recovery of oil and gas resources. CPAI urges BLM to consider changing current NSO buffers to sensitive area consultation buffers. Sensitive area consultations would require the lessee to demonstrate to affected stakeholders that the proposed development will minimize environmental impact as compared to other practicable alternatives.

If you have any questions, or require additional information, please contact me at (907) 263-4682 or by email at Dale.D.Summerlin@conocophillips.com.

Sincerely,

Dale Summerlin

Attachments

Cc: ENSR Fax: 1-888-907-3677 (w/attachments)
Henri Bisson, United States Department of the Interior
Stephen Allred, United States Department of the Interior

CPAI SEIS COMMENTS

Detailed Comments on Proposed Health Stipulations

[44.001, 002, 003] Proposed Health Stipulation 1, Health Advisory Board: BLM, North Slope Borough ("NSB") or other undefined entities may form a board and lessees would be required to conduct a public health analysis prior to new development and provide proposed mitigation measures with the proposed development plan.

[44.001 cont'd] CPAI believes the recommended establishment of a North Slope Health Advisory Board lacks clarity of purpose and focus and is duplicative of current public health programs. **Additionally, [44.002 cont'd]** CPAI believes the public health analysis report is inappropriate because current health disparities have been documented to pre-date oil activities on the North Slope and many are associated with well known health/behavior risk factors that are unrelated to oil and gas activities. **Finally, [44.003 cont'd]** BLM fails to demonstrate a causal link between North Slope oil and gas development and the health of the local population. See comment Volume 1: Chapter 3, Page 3-184, among others, for additional discussion.

[44.004] Proposed Health Stipulation 2, Subsistence: Pursuant to the proposed stipulation, lessees would be required to design and fund studies prior to construction and continue for the life of the development. Additionally the AO may require changes to activities based on study results.

CPAI believes consultation with affected communities and collaborative efforts, which encourage cooperative decision making and understanding of the communities' heart-felt concerns, are critical to the success of projects. **[44.004 cont'd]** However, monitoring subsistence resources equates to collecting baseline data on harvested species such as caribou. Baseline studies will already be required of lessees to comply with other stipulations. Additionally, BLM, as discussed on page 2-17 of the SEIS, and other entities coordinate and conduct studies beyond those performed by individual lessees. CPAI believes the stipulation duplicates existing requirements and activities and should not be included in the ROD. Additionally, subjecting lessees to activity changes at any point in the development introduces considerable uncertainty.

[44.005, 006, 007] Proposed Health Stipulation 3, Public Health Monitoring: Pursuant to the proposed stipulation, lessees would be required to design and implement a public health monitoring program three years prior to development and continue for the life of the development.

For the following reasons, CPAI believes the proposed stipulation is inappropriate. **Firstly, [44.005 cont'd]** the stipulation lacks clarity and subjects lessees to considerable uncertainties. **[44.006 cont'd]** Secondly, it duplicates current Indian Health Service and public health activities. They include Healthy People 2010 and Healthy Alaskans 2010. **Finally, [44.007**

cont'd] current health disparities have been documented to pre-date oil activities on the North Slope and many are associated with well known health/behavior risk factors that are unrelated to oil and gas activities. CPAI believes BLM fails to demonstrate a causal link between North Slope oil and gas development and the health of the local population. See comment Volume 1: Chapter 3, Page 3-184, among others, for additional discussion.

[44.008, 009, 010] Proposed Health Stipulation 4, Control of Contaminant - related Health Risk: Pursuant to the proposed stipulation, lessees would be required to design and fund baseline studies to determine the level of contaminants, such as benzene, toluene, ethyl benzene, xylene, and PCBs, commonly associated with oil production, in subsistence food species and their habitats and conduct ongoing studies to detect any contamination of subsistence foods by the oil and gas development. Additionally, in the Mitigation of Impacts portion of the proposed stipulation, BLM states; If between the commencement of construction and approval of completion of abandonment measures, the AO determines that the lessee's actions are causing or have caused levels of contaminants that pose a substantial health risk to subsistence resource users the AO may require changes in construction, operations or abandonment activities.

For the following reasons, CPAI believes the proposed stipulation is inappropriate. Firstly, **[44.008 cont'd]** chemicals such as benzene, toluene, ethyl benzene and xylene are volatile, organic hydrocarbons and are therefore not anticipated to accumulate in subsistence food species. Secondly, **[44.009 cont'd]** PCBs are not specifically associated with oil development. Historically, PCBs were associated with the use of electrical transformers; however, new developments such as Alpine do not have PCB containing transformers. For the above stated reasons, the request to determine baseline and ongoing volatile and PCB concentrations in subsistence food species and their habitats is not appropriate. Finally, **[44.010 cont'd]** the proposed Mitigation of Impacts portion of the stipulation lacks predictability and clarity. The AO should determine in advance the contaminants that are associated with oil or gas activities and that need to be addressed. BLM also uses the term substantial health risk, which is subjective. Both of these issues expose lessees to considerable uncertainty.

[44.011, 012, 013] Proposed Health Stipulation 5, Air Quality Monitoring and Management: Pursuant to the proposed stipulation, lessees would be required to obtain background air monitoring data for National Environmental Policy Act ("NEPA") analysis, prepare a list of foreseeable emissions, and conduct operational monitoring. The AO would then be able to require changes to the lessee's activities if certain conditions are not met.

For the following reasons, CPAI believes the proposed stipulation is inappropriate. **[44.011 cont'd]** Firstly, the proposed stipulation duplicates existing regulations. Authority for on-site ambient monitoring resides with the agency administering the Clean Air Act ("CAA") permitting program. Complying with duplicative processes will place undue administrative and financial burden on lessees. Secondly, **[44.012 cont'd]** on-site monitoring in remote areas of Alaska is not practical. Sophisticated monitoring systems require substantial power as well as access for installation and maintenance. It is not feasible to monitor in areas other than pads that already have highline power. Although diesel engines could be installed to provide power at a remote site, they would likely impact air quality measurements at the site. Because on-site ambient monitoring in remote areas is not feasible, BLM should acknowledge that data from existing monitoring station, such as Nuiqsut, will most likely be used for permitting future development. See comment on Volume 2: Chapter 4, Page 4-71 below, among others, for additional discussion. **[44.013 cont'd]** Finally, as written, the text dictates a minimum requirement for comparison of the modeling results. The requirement indicates other scientifically defensible significance thresholds with an etc. listed after a few examples.

National Ambient Air Quality Standards ("NAAQS") are scientifically based and have been tested in the courts. Requiring comparison, beyond NAAQS, to other undefined parameters does not provide clear objectives and exposes lessees to considerable uncertainty.

[44.014, 015] Proposed Health Stipulation 6, Public Safety and Infectious Diseases: Pursuant to the proposed stipulation, lessees would be required to design and implement training modules for drug and alcohol policies and communicable diseases.

For the following reasons, CPAI believes the proposed stipulation is inappropriate. Firstly, **[44.014 cont'd]** the requirement for drug and alcohol training duplicates existing regulations. CPAI already has a drug and alcohol training module(s) in compliance with regulations. Secondly, **[44.015 cont'd]** a module to train employees on how to prevent transmission of communicable disease may be reasonable, but BLM fails to demonstrate a link between oil and gas development and an increase in communicable disease in North Slope communities. For example, Alpine was developed within eight miles of Nuiqsut, but no information is provided that demonstrates any significant changes in communicable disease rates nor any connection to oil or gas development.

[44.016, 017] Proposed Health Stipulation 7, Oil Spills: Pursuant to the proposed stipulation, lessees would be required to fund review of and monitor spills determined to substantially impact subsistence resources.

For the following reasons, CPAI believes the proposed stipulation is inappropriate. Firstly, **[44.016 cont'd]** the proposed stipulation lacks clarity. As written, potential to substantially impact is subjective and exposes lessees to considerable uncertainty. Secondly, **[44.017 cont'd]** the proposed stipulation duplicates existing regulations. The Oil Pollution Act of 1990 establishes liability for natural resource damages and other impacts due to an oil spill. In the event of a significant spill, Trustees can conduct Natural Resource Damage Assessments to determine natural resource injuries and restoration needs (15 C.F.R., Part 990). In the unlikely event of a significant spill, complying with duplicative processes would place undue administrative and financial burden upon lessees.

Detailed Comments on Non-Health Related ROPs and Stipulations

[44.018] ROP A-3: In last sentence, CPAI recommends adding field before staff to make clear that only field staff, not all staff including corporate and global company staff, would need instruction regarding procedures for hazardous materials contingency planning in the Planning Area.

ROP A-4b: [44.019] At a minimum, to comply with Spill Prevention, Control, and Countermeasures ("SPCC") regulations, the second sentence under this standard should be rewritten to read: Except during overland moves and seismic operations, the aggregate aboveground storage capacity of fuel and oil products in excess of 1,320 gallons shall be stored within an impermeable.... **[44.020]** To the extent information in the stipulation duplicates other federal and state regulations, BLM should consider elimination of the stipulation's specific volume or capacity references as they will change with time thereby making the ROP inconsistent and obsolete.

[44.021] ROP A-4e: BLM should consider removing the requirement for containers to have the year filled or purchased marked on the container. It is a significant administrative burden, and CPAI believes it serves no purpose as: 1) All activities are subject to completion inspections and debris cannot be left behind, so containers will not be "orphaned;" 2) If a container is found in

the future, the container's content and the lessee's name would be used to determine management options and liability, if any; 3) The assertion that having the "year filled date" will allow BLM to determine length of abandonment and track it to a specific activity is not valid. Containers, in some cases, are filled for years before use.

[44.022] ROP A-4f: CPAI recommends adding or his or her designee after AO so that reports of spills within 24 hours of occurrence can also be reported to the AO's designee, as is current practice.

[44.023] ROP A-4g: This ROP requires marking oil pans or "duck ponds" with the responsible party's name. While CPAI does not object to this proposed practice, CPAI believes that it is not standard or appropriate to have this type of detailed control of field operations in an ROP. This requirement would be more appropriate for a project-specific Plan of Operations, not as part of a ROD.

[44.024] ROP B-1: The ROP states: Water withdrawal from rivers and streams during winter is prohibited. It should be acknowledged that the State of Alaska Department of Natural Resources ("ADNR") now allows winter water withdrawal from the Colville River to construct an annual ice bridge. CPAI requests that BLM modify this ROP to reflect current practice.

[44.025] ROP B-2: BLM should delete the reference to lake size as it is not a criterion for permitting water withdrawal.

[44.026] ROP B-2b: CPAI appreciates that BLM modified this previous stipulation to incorporate the most updated water withdrawal criteria allowed by the ADNR for water source lakes. However, it is unclear why the BLM included a water withdrawal ROP in this document. Water withdrawal has been the focus of considerable research since 2000, sponsored by a collaboration of scientists from industry, state and federal agencies. Withdrawal criteria have changed in recent years as more data has become available and research is continuing in the evaluation of watershed designation and relationships to lake recharge. If the ROP remains as currently written, it could become outdated and inconsistent with future practice. CPAI recommends that this ROP contain language that allows for improvements in water withdrawal criteria based on credible scientific evidence.

[44.027] ROP B-2d: As stated above, numerous lake recharge studies have been conducted on lakes within the Colville River delta as well as in Northeastern National Petroleum Reserve Alaska ("NPR-A"). Conclusions of these studies have all been that lakes will recharge to pre-withdrawal levels. For example, a recent recharge study in the Colville River Delta confirms that mining of ice chip volumes above water withdrawal limits will not affect lake recharge and therefore will not harm fish habitat (Baker, 2007). Requiring lessees to develop monitoring plans to document recharge will have no value added given the current state of knowledge and collaborative research ongoing with the University of Alaska-Fairbanks, CPAI, BLM, and ADNR. CPAI recommends that this ROP be removed.

ROP E-7b: The ROP lists various options for pipeline construction in order to minimize disruption of caribou movement and subsistence use in areas where facilities or terrain may funnel caribou movement. Development designs should minimize the potential for funneling movement and restricting access, as has been stipulated by this draft SEIS. **[44.028]** The elevation of pipelines to a minimum of seven feet has been shown to allow for passage of caribou and should be included as an option to pipeline burial and ramps over pipelines. To date, pipeline burial has not been an economic nor environmentally preferable option due to the high

temperatures and potential for significant subsidence and alteration of habitat; thus all potential options should be presented.

ROP E-7c: The ROP states: A minimum distance of 500 feet between pipelines and roads shall be maintained. [44.029] The 1994 report by LGL Alaska Research Assoc, Inc. for the Alaska Caribou Steering Committee reviewed previous caribou research and came up with a recommended range of separation distance between a road and pipeline to facilitate caribou passage. In this report, 350 feet was identified as the minimum distance, with 1000 feet as the maximum separation distance (Cronin et al, 1994). To be consistent with these recommendations, CPAI requests that the minimum distance be changed to 350 feet.

ROP E-9: The ROP requires lessees to submit an annual report for raptor, raven and fox nesting, denning and sheltering at oil and gas facilities. [44.030] As previously discussed with the applicable resource agencies, CPAI fails to see the benefit in such a report. With the improvements in food waste management, combined with the smaller footprints such as at the Alpine development, the number of predators is significantly reduced compared to historical operations in larger fields such as Kuparuk and Prudhoe Bay. Identification of predators, when seen on systematic wildlife surveys, is already included in annual reports to agencies and would likely continue. To reduce unnecessary burden on industry and agency personnel for an anticipated low number of predators, CPAI recommends that sighting reports be submitted to BLM and other appropriate agencies on a real time basis at the time an operator observes such use rather than creating further administrative burden associated with annual reporting.

[44.031] ROP 11a: Reference is made to the lessee following an accepted BLM protocol for the implementation of Spectacled and Steller's eider surveys. CPAI has been working with the United States Fish and Wildlife Service ("USFWS") on eider surveying methods, aerial and ground-based, since 1992. It would be beneficial to all if the BLM would clarify that the protocol adopted by BLM will be congruent with USFWS protocols to allow for consistency in methodology over time.

[44.032] Reference is made in both subsections a and b, under special conditions in Yellow Billed Loon ("YBLO") habitats to a 1-mile buffer around all recorded nest sites and a minimum 500-meter buffer around the remainder of the lake shoreline. There is no reference to a scientific rationale for the buffer distances; what is the basis for the distances? CPAI is perplexed that the BLM did not consider the dataset on YBLO nest locations collected by Alaska Biological Research, Inc. ("ABR") for CPAI in the Colville Delta. CPAI has attached some drawings that show locations of YBLO sightings, nests and broods within and outside of 1 mile of existing infrastructure (pipelines, roads, pads) as well as YBLO sightings on lakes used for water withdrawal. The CPAI drawings start with the year 1996 and carry through 2007. As indicated in the plots, there are nests in water bodies less than one half mile from infrastructure year after year. A lake adjacent to the CD-4 pad, for example, has had a loon nest in that location before, during and after construction. That nest is approximately 345 meters (1160 feet) from the CD4 road and approximately 520 meters (1700 feet) from the CD4 pad. CPAI encourages BLM to consider available scientific data to assess the real or perceived impacts on these birds when developing buffer distances. CPAI strongly agrees that some protections are necessary; however, they should be grounded in science and not conjecture.

[44.033] ROP F-1e: A flight restriction of 2000 feet above ground level over the Teshekpuk Lake Habitat area between May 20 and August 20 may prohibit the monitoring of caribou and other wildlife by scientific researchers. In the SEIS, BLM references stipulations and ROPs concerning the conduct of various wildlife, cultural and paleontological surveys prior to development. In fact, K-5 Lease Stipulation requires a minimum of three years of caribou

surveys before construction. Many of these studies must be done at altitudes much less than 2000 feet above ground level (between 150 and 200 feet for loon surveys, 100 to 150 feet for eider surveys, and between 300 feet and 500 feet for caribou surveys). CPAI agrees that air traffic in these sensitive areas should be minimized; however, as currently written, this ROP may prohibit the conduct of wildlife monitoring studies required by BLM if study activities are intended to be covered in the SEIS. This possible contradiction in requirements should be clarified in the final SEIS.

ROP H-1: CPAI believes that conflict avoidance agreements should not be required. See comment Volume 1: Chapter 2, Page 2-60 for additional discussion.

[44.034] ROP-J: CPAI believes that the ROP should clarify that ground disturbing activities are associated with development and not winter exploration, which is conducted when the birds are not present.

ROP L-1: CPAI strongly supports inclusion of this new ROP in the draft SEIS.

[44.035] Stipulation K-1: This stipulation establishes setbacks measured from river banks' highest high water marks as determined by the hydrology at the time of application. CPAI suggests that the method of measurement of setbacks should be consistent with that established in the Northwest Planning Area, where setbacks are measured from the centerline of rivers. Having different methods of measuring setbacks along rivers in the different planning areas would be confusing for operators. Additionally, it is likely more difficult in most cases to identify a highest high water mark than a river centerline.

[44.036] Stipulation K-5e2: BLM does not provide a scientific basis for evacuating a road corridor if large numbers of caribou are moving through. Current standard practice is for all vehicles to stop and allow passage of caribou, regardless of the number. It would likely be difficult to evacuate a road section once a large group of animals have moved in, thus the more practicable action would be to stop traffic and allow the caribou to pass.

[44.037] Stipulation K-5e4: This stipulation states: Use of aircraft larger than a Twin Otter by authorized users of the Planning Area, including oil and gas lessees, from May 20 through August 20 within the Teshekpuk Lake Caribou Habitat Area, shall be for emergency purposes only. This seems to conflict with the intent of ROP F-1c, which states: During the design of proposed oil and gas facilities, larger landing strips and storage areas should be considered so as to allow larger aircraft to be employed, resulting in fewer flights to the facility.

[44.038] Stipulation K-5e.5: This stipulation states: Fixed-wing aircraft takeoffs and landings by authorized users of the Planning Area shall be limited to an average of one round-trip flight per day from May 20 through June 20, at aircraft facilities within the Teshekpuk Lake Caribou Habitat Areas. CPAI requests that shall be replaced with may. A robust disturbance study on the effects of noise from construction activities at the Alpine development on nesting tundra birds did not indicate adverse effects on productivity. The study was conducted during a sensitive time period for tundra nesting birds. One flight per day may be unworkable and/or unsafe depending on what activities are taking place at a specific location. For example, wildlife studies, required via various ROPs and stipulations, may require periodic landings during the performance of those surveys. The ROP is unclear as to whether access would be denied. The stipulation, as written, exposes lessees to considerable uncertainty.

[44.039] Stipulation K-5e.6: See CPAI's comments on ROP F-1e concerning restrictions on flight altitudes within the Teshekpuk Lake Caribou Habitat Area and the possible conflict with BLM

requirements for caribou monitoring. As currently written, monitoring studies may not be able to be accomplished with these flight restrictions in place.

[44.040] Stipulation K-6: The last sentence of the ROP refers to consultation requirements between the lessee and Alaska Eskimo Whaling Commission and others prior to conducting open water activities. It is duplicative of existing requirements by National Marine Fisheries Service, and subjects lessees to additional financial and administrative burdens.

Detailed Comments on Factual Errors, Omissions or Concerns

Volume 1: Executive Summary, Page ES-4: BLM states that a phased leasing approach could be undertaken. CPAI does not support a phased leasing approach. CPAI

supports having all available lands opened for leasing as soon as practicable.

[44.041] Volume 1: Executive Summary, Page ES-5: In the second sentence of the second paragraph, the sentence structure implies that placement of gravel would disturb, displace, or kill fish and wildlife. Placement of gravel would not necessarily have this effect and has not been demonstrated to kill fish and wildlife. If such has happened, CPAI believes that a citation to that effect should be provided. CPAI requests that the quoted phrase be moved to the latter part of the sentence under risks to recognize that this outcome is a risk but not a definitive outcome. The sentence would read: Placement of gravel...could...impound and disturb water; risk disturbing or destroying paleontological and cultural (archaeological and historic) resources; risk disturbing, displacing or killing fish and wildlife; and potentially affect subsistence...

Additionally, BLM should recognize that industry, and in particular CPAI, expend significant monies to collect comprehensive environmental baseline data that can be used in the assessment of impacts to the environment and wildlife. Many of CPAI's original project development designs have been altered to minimize environmental impacts and avoid impacts to cultural resources.

Volume 1: Chapter 1, Page 1-8: While CPAI has always applied for permits and zoning approvals from NSB, CPAI agrees with and supports BLM for stating that local regulation cannot result in prohibiting activities on Federal lands.

[44.042] Volume 1: Chapter 2, Pages 1-9 and 1-10: There is no reference to ADNR temporary water use permits, water rights, or fish habitat permits. Reference to the Alaska Department of Environmental Conservation's ("ADEC's") temporary storage of drilling waste permits is also missing. If these permits are not required, BLM should indicate so and provide lessees guidance on the future permitting process. Specifically, direction should be provided on whether lessees are required to obtain authorizations from the state agencies or from BLM for the above referenced activities, and if so, how will the new process work.

[44.043] Volume 1: Chapter 2, Page 2-24: The objective statement for ROP A-2 lists only non-hazardous wastes, but the associated requirement/standard on pages 2-26 and 2-27 also discuss hazardous wastes. CPAI suggests adding hazardous wastes to the objective statement.

[44.044] Volume 1: Chapter 2, Page 2-38: At the end of the Alternative A, ROP B-1 description, CPAI recommends that BLM change lakes and ponds to rivers and streams in winter, which is what this ROP addresses according to the requirement/standard on page 2-37.

[44.045] Volume 1: Chapter 2, Page 2-50: CPAI questions the statement that Stipulation 37 would be less effective than ROP E-7 in preventing bird and endangered species collisions with pipelines because pipeline heights would be five feet instead of seven feet. BLM does not present information regarding documented bird collisions with pipelines. Previous bird strike discussions have addressed power lines, drill rig towers and other similar infrastructure that could be in a bird's flight path. CPAI does not see how a five or seven-foot high pipeline would be a concern for bird collisions during flight due to their low height.

[44.046] Volume 1: Chapter 2, Page 2-52: The requirement/standard for Alternatives B and C mention aerial surveys of breeding pairs whereas Alternative D leaves out the reference. It is not clear if this was intentional or inadvertent.

[44.047] Volume 1: Chapter 2, Page 2-53: For Alternative D, BLM has three specific issues. Alternatives B and C appear to be missing the three issues.

[44.048] Volume 1: Chapter 2, Page 2-53: BLM states that Requirement/Standard 3 would be Planning Area wide. It is not clear how this is different than most others. CPAI recommends that this point be clarified.

[44.049] Volume 1: Chapter 2, Page 2-53: The wording in Alternatives B and C differ from Alternative D. Accepted mitigation is used in Alternatives B and C, and default standard mitigation is used for Alternative D. Development may be prohibited within buffers or activities curtailed while birds are present is used in Alternatives B and C, and Development will generally be prohibited within buffers unless no other option exists is used for Alternative D. CPAI believes that the differences should be justified and explained.

[44.050] Volume 1: Chapter 2, Page 2-54: BLM states that Alternative D, ROP E-11 provides greater benefit, than Alternative B and C's ROPs, in minimizing potential impact to birds and threatened and endangered species. The difference is not clear as they are essentially the same ROPs.

Volume 1: Chapter 2, Page 2-60: In Stipulation 61, BLM discusses subsistence consultation. CPAI strongly opposes the requirement to prepare conflict avoidance agreements or similar documents for onshore work. Conflict avoidance agreements are not required by law and are duplicative of other efforts. Historically such agreements have delayed and derailed offshore oil and gas activities.

[44.051] Volume 1: Chapter 2, Page 2-65: BLM states in Alternative A - Stipulations 23, 61, and 62: Subsistence operations can disturb and potentially displace (temporarily) subsistence species and therefore disrupt subsistence activities. CPAI believes that the word seismic should replace the first use of subsistence in this sentence.

[44.052] Volume 1: Chapter 2, Pages 2-68 through 2-70: The Lease Stipulation K-1 river lettering appears to be out of order.

[44.053] Volume 1: Chapter 2, Page 2-70: BLM states: Alternative A Stipulation 39 would provide less benefit for all the following listed resources and uses along the Tingmiaksiqvik River than would Alternatives B, C, and D - Lease stipulation K-1. CPAI believes that C should be deleted, as the ROP specifically states, in the middle column of the page, that it is applicable to Alternative B only.

[44.054] Volume 1: Chapter 2, Page 2-72: CPAI believes that rivers should be replaced with lakes because Stipulation K-2 only applies to lakes.

[44.055] Volume 1: Chapter 2, Page 2-76: BLM states: permanent oil and gas facilities (including gravel roads, pads, and airstrips, but excluding pipelines) and material sites will be sited outside the identified buffers and RSO areas. Material sites are often a benefit to fish over wintering habitat if adjacent and connected to rivers. This restriction should be deleted.

[44.056] Volume 1: Chapter 2, Page 2-80: BLM states that Alternative D requires four years of caribou study versus three years for Alternatives B and C. It is not stated why the additional year is necessary. CPAI believes the requirement should be three years to be consistent with the Northwest NPR-A ROD.

[44.057] Volume 1: Chapter 2, Page 2-86: In the Lease Stipulation K-7 discussion, CPAI believes that Alternative D should be deleted from opening phrase. Alternative D does not include the 1/2 mile raptor nest buffer.

[44.058] Volume 1: Chapter 2, Page 2-87: In the Lease Stipulation K-8 discussion, it is not clear what is intended by the reference to a perpendicular crossing. BLM does not elaborate how perpendicular is defined when referring to the Pik Dunes.

[44.059] Volume 1: Chapter 2, Page 2-94: BLM states that proposed facilities will be required to disclose potential air quality impacts through site specific NEPA analyses and demonstrate continued compliance with applicable air quality requirements. ADEC currently manages CAA permitting. As such, a NEPA analysis is not required to obtain CAA permits. Additionally, NEPA analyses are typically completed prior to or during later stages in parallel with the permitting process. If permits must be obtained prior to NEPA analysis completion, lessees would be subject to greater uncertainties and permitting delays.

[44.060] Volume 1: Chapter 2, Page 2-98: CPAI recommends substituting would or could for will when describing potential impacts.

[44.061] Volume 1: Chapter 2, Page 2-102: CPAI recommends that soils be replaced by wetlands numerous times in the Effects on Wetlands and Floodplains section.

Volume 1: Chapter 2: Page 2-105: In Alternative A, Effects on Terrestrial Mammals, BLM states: If field development occurred in critical TLH insect-relief areas, movements of caribou from coastal insect-relief areas to foraging areas could be adversely affected which could result in reduced productivity and ultimately a population level effect. Extensive development could result in the loss of some insect-relief habitat for TLH caribou. When the Kuparuk oil field was constructed in the 1980s, a number of mitigation measures were implemented to allow for caribou passage through the field to the coast for insect relief. The primary mitigation measure was the minimum requirement of 1.5m clearance between the bottom of pipe to ground level. Curatolo and Murphy (1986) subsequently demonstrated that caribou would cross beneath pipelines with this clearance, and additional clearance did not necessarily increase crossing success. It is likely that any development in the Teshekpuk Lake area would be substantially smaller in footprint compared to the Kuparuk field. That, plus the addition of 0.6 m pipeline clearance should allow for successful passage to the coast and to foraging areas. Although these concerns were likely voiced when the Kuparuk field was proposed, the Central Arctic Herd ("CAH") animals appear to have become habituated to much of the oil and gas activities, without a population level response. Numbers have increased from 5,000 animals in mid-1970s, prior to Kuparuk development, to a high of 31,857 in a 2002 ADFG census (Lawhead et al, 2007). The TLH is relatively similar to the CAH in herd size and life-history characteristics; thus it could be anticipated that the TLH will ultimately habituate to some development over time. A number of these animals have already been exposed to development of human

infrastructure such as is found at Barrow. The same comment applies for the following page also.

[44.062] Volume 1: Chapter 2, Page 2-108: Polar bears are discussed in Effects on Endangered and Threatened Species, Alternative D. Polar bears are not currently a listed species under ESA, thus discussions concerning polar bears should be moved to the marine mammals section of the NEPA document.

[44.063] Volume 1: Chapter 2, Page 2-110: BLM states: submerged off-shore cultural resources, if present, would generally not be threatened by off-shore oil and gas exploration/development activities. CPAI recommends that BLM consider sub-sea wells, pipelines and ports in their analysis.

Volume 1: Chapter 2: Page 2-110: In Effects on Subsistence Harvest Patterns, Alternative A, BLM states: Subsistence species, such as caribou, muskox, and moose, would avoid areas of oil and gas activity, resulting in long-term localized effects. **[44.064]** As previously discussed, there is no evidence that the CAH animals avoid areas of oil and gas activity. CPAI has presented data regarding the increase in population of this herd, from the small size before the Kuparuk field was developed, through construction and operation of this field and the largest documented population level in 2002. As anyone traveling through the Kuparuk or Prudhoe Bay developments during the summer insect season (mid-July to August) notes, caribou can be seen standing on gravel roads and pads, underneath pipelines or modules, for insect relief. Pollard et al (1996) have determined that these oilfield structures provide shade, which is not commonly used by oestrid flies compared to well lit areas. Observations have been documented of muskox in or transiting through the Kuparuk oil field and adjacent Colville River delta by CPAI consultants (Lawhead et al, 2007). The assertion that these animals avoid oil and gas activities is therefore unsubstantiated. Moose are not typically found in the habitat encompassing oil fields, although a couple of moose were observed in the Prudhoe Bay field in the late 1990s. These animals tend to use the corridors along river or stream banks where sufficient browse can be found. The statement on avoidance is thus incorrect and CPAI recommends that it be removed or altered significantly to account for the more correct information as presented herein.

[44.065] Volume 1: Chapter 2, Page 2-111: Regarding cumulative effects, the North Slope communities adopting individual village town sites and departing from their former nomadic lifestyle has focused subsistence activities in concentrated regions. It should not be overlooked when assessing subsistence impacts, as it has influenced game movement.

[44.066] Volume 1: Chapter 2, Page 2-112: In Effects on Subsistence Harvest Patterns, BLM states: ...would dramatically reduce the amount of undisturbed habitat.... CPAI disagrees with this statement and believes the position is not supported by facts. The development model moving forward is limited footprint. Regardless, stipulations and ROPs will prevent dramatic reductions of habitat.

[44.067] Volume 1: Chapter 2, Page 2-114: In Effects on Environmental Justice, BLM states: These effects have disrupted subsistence livelihoods.... CPAI believes the statement is overbroad and unsupported. While it is conceivable that specific hunting events might have been disrupted, CPAI is not aware of a specific example where a subsistence livelihood has been disrupted and a citation is not provided to support the statement. The text also fails to provide the historical perspective needed for the reader to discount effects due to others, besides the oil and gas industry, on the culture prior to the first discovery of gas in the NPR-A in the 1940's (i.e. Euro-american impact through disease, decimation of whaling stocks, etc.).

[44.068] Volume 1: Chapter 2, Page 2-114: In Effects on Environmental Justice, BLM states Allowing leasing...would dramatically reduce the amount of undisturbed habitat to caribou... CPAI believes the term dramatically is inaccurate for the reasons stated in comment Volume 1: Chapter 2, Page 2-112.

[44.069] Volume 1: Chapter 2, Page 2-116: Each alternative cites 11,650 miles of seismic trails, but the previous Recreational Resources section cites many hundreds of miles of trails. The references should be consistent.

[44.070] Volume 1:Chapter 2, Page 2-118: Drug and alcohol trafficking should not be attributed to the oil industry; these restricted items have been imported prior to industry activities and occur at elevated levels in communities far away from oil and gas activities. BLM also fails to demonstrate that elevated incidences of chronic diseases, metabolic disorders, and cancer would be associated with oil and gas activities. See CPAI's other health related comments for additional discussion.

Volume 1: Chapter 3, Page 3-7: BLM states that there are no Class I areas within 60 miles. This is correct. The nearest Class I area is approximately 400 miles to the south. It is Denali National Park.

[44.071] Volume 1: Chapter 3, Page 3-7: BLM states that dispersion conditions are neutral to unstable in the lower atmosphere. CPAI believes the conditions are better described as neutral conditions dominate, with unstable and stable conditions rarely occurring (CPAI, 2004).

[44.072] Volume 1: Chapter 3, Page 3-8: In Table 3.2-B, BLM primarily uses data from the Alpine Satellites EIS. Some of the footnotes that appeared in the Alpine Satellites EIS were omitted when incorporated into this draft supplemental EIS. The footnotes should be reinstated to make the table clearer. **[44.073]** Additionally, the newer 2001-2002 monitoring data from drill site 1F at Kuparuk should be used rather than the older monitoring data from 1990-1992.

[44.074] Volume 1: Chapter 3, Page 3-8: BLM states that the Nuiqsut ambient air quality monitoring station has been operated since 1999 as a permit condition. The statement is incorrect. The station was required by permit stipulation for one year. CPAI has voluntarily operated the station since 2000.

[44.075] Volume 1: Chapter 3, Page 3-9: BLM states that air pollutants have been found in vegetation and arctic haze is periodically observed on the North Slope. The statements need to be supported with citations.

[44.076] Volume 1: Chapter 3, Page 3-14: In the first paragraph, second to last sentence, CPAI recommends that BLM consider rewriting the sentence to read: Although the Alpine field discovery and development was outside of the planning area, the Alpine field-play type has been the principal target for exploration on leases acquired in the Northeast NPRA planning area.

[44.077] Volume 1: Chapter 3, Page 3-14: In the second paragraph, CPAI recommends that BLM consider adding the following sentence: The delineation of these reservoirs in NPR-A has resulted in a proposal to build satellite production sites that tie back to the Alpine field facilities (USDOI BLM and MMS 2003).

[44.078] Volume 1: Chapter 3, Page 3-52: BLM states: The largest concentrations of Pacific Loons in the planning area occur west of Teshekpuk Lake and in a small area near the Colville River south of Nuiqsut (Map 3-9). The statement does not agree with Map 3-9. Additionally, the area south of Nuiqsut is not in the planning area.

[44.079] Volume 1: Chapter 3, Page 3-53: CPAI believes that the reference to Map 3-11 in the first paragraph should be 3-10.

[44.080] Volume 1: Chapter 3, Page 3-53: CPAI recommends that the reference to North Slope Eider Survey be replaced with Breeding Pair Survey.

[44.081] Volume 1: Chapter 3, Page 3-53: BLM states Red-throated loons are common. The statement does not agree with the map, and toward the end of the paragraph, CPAI believes that both references to Map 3-12 should actually be 3-11.

[44.082] Volume 1: Chapter 3, Page 3-57: When referring to Long-tailed ducks, BLM states: The largest concentrations in the planning area occur southeast and southwest of Teshekpuk Lake. The statement does not agree with the information on Map 3-16.

[44.083] Volume 1: Chapter 3, Page 3-105: In the second sentence of Subsistence Use, CPAI believes that the reference to Map 3-42 should be Map 3-36 and the reference to Map 3-41 should be Map 3-42. **[44.084]** After correcting the reference, it corresponds with the order in which the villages are presented in section 3.4.2.4, making it easier for the reader to find the correct figures. Also the data from these figures are from 1979 and 1989. CPAI believes more recent data may be available from Stephen Braund's work.

[44.085] Volume 1: Chapter 3, Page 3-118: BLM states snowy owls are no longer taken on a regular basis, but BLM does not elaborate why that is the case. CPAI recommends that this point be clarified.

[44.086] Volume 1: Chapter 3, Page 3-120: BLM states Dall sheep are an important subsistence resource for Nuiqsut. CPAI questions the accuracy of the statement.

[44.087] Volume 1: Chapter 3, Page 3-121: BLM states lake trout are harvested south of Nuiqsut. CPAI recommends this point be confirmed. CPAI questions the statement because there are not many lakes south of Nuiqsut deep enough for lake trout. Lake trout are typically caught west of Nuiqsut.

[44.088] Volume 1: Chapter 3, Page 3-133: In the second paragraph, the last two sentences discuss a drop in 1999-2000 caribou harvests distant (>16 miles) from oil development compared to 1993 and 1994. It is not clear what point BLM is trying to make when it states: This reduction is the result of oil development (Alpine field) moving west into the Colville Delta, an area of focused Nuiqsut caribou harvests. CPAI would posit instead that if the Alpine field was impacting subsistence caribou hunts, then the distant harvests should have increased, not decreased. CPAI recommends that BLM clarify the basis for the statement and reconsider the conclusion.

[44.089] Volume 1: Chapter 3, Page 3-162: BLM states VRM classes were not established in the 1998 Northeast IAP/EIS. This appears to contradict the first sentence in the next paragraph that states: The 1998 Northeast IAP/EIS ROD assigned VRM classes to the Colville River.

[44.090] Volume 1: Chapter 3, Page 3-162: In the third sentence of Alpine Satellite Development Plan EIS, CPAI recommends that BLM change Alpine field to Alpine satellites.

[44.091] Volume 1: Chapter 3, Page 3-162: CPAI recommends deleting the sentence stating: With completion of the Alpine Satellite Development Plan EIS process, this area within the planning area will have VRM classes assigned. The EIS process is complete.

[44.092] Volume 1: Chapter 3, Page 3-168: In Overland Travel (Ice Roads and Packed Snow Trails), first paragraph, last sentence, CPAI recommends adding and Alpine after Kuparuk.

[44.093] Volume 1: Chapter 3, Page 3-177: CPAI recommends that BLM consider adding: In addition to training events at Alpine, CPAI and Kuukpik Corporation collaborate to host job fair events in the community to support and recruit local hire.

[44.094] Volume 1: Chapter 3, Page 3-177: In the first bullet item, CPAI recommends correcting the reference Kuukpik /Fairweather to Kuukpik/Veritas, and Carlisle to Carlile, and adding Northern Air Cargo and Kuukpik Drilling.

[44.095] Volume 1: Chapter 3, Page 3-177: As of September 2007, six Nuiqsut residents are working full-time in the Alpine field.

[44.096] Volume 1: Chapter 3, Page 3-178: In the fourth bullet item, CPAI recommends changing two ice road monitors to two Subsistence Representatives and one Ice Road monitor and deleting the reference to two environmental studies assistants.

[44.097] Volume 1: Chapter 3, Page 3-178: CPAI recommends deleting liaison in the last bullet item.

[44.098] Volume 1: Chapter 3, Page 3-180: The employment numbers for Anaktuvuk Pass appear to be incorrect; they are the same as Barrow's on page 3-179.

Volume 1: Chapter 3, Page 3-181: The employment numbers for Atqasuk appear to be incorrect, they are the same as the Anaktuvuk Pass' numbers on page 3-180 and thus also the same as Barrow on page 3-179.

[44.099] Volume 1: Chapter 3, Page 3-181: Economic benefits of the seasonal ice road provided by CPAI, at Nuiqsut's request, are not discussed in detail. Pages 255-258 of MMS 1984 demonstrate the cost and challenges associated with re-supply prior to oil development near Nuiqsut. CPAI believes that the cost of goods and services is significantly reduced for the residents of Nuiqsut through use of the seasonal ice road. Families below poverty level, in particular, are likely to benefit greatly. CPAI recommends that this point be added to the discussion.

Volume 1: Chapter 3, Page 3-184: The SEIS correctly highlights the remarkable improvements in the health amongst the Iñupiat residents of the North Slope, which mirrors statewide and national trends in American Indian/Alaska Native (AI/AN) health. For example, the past 50 years have witnessed profound changes in AI/AN health status. Since 1950 the overall health of Alaska Natives including the North Slope Iñupiat - as measured by indicators including infant mortality, age-adjusted overall mortality, and life expectancy at birth - has improved significantly. Mirroring previous US mortality trends from the early 1900's, much of the improvement in general mortality and life expectancy is attributed to decreased rates of infectious diseases such as tuberculosis through immunizations and better treatment of infectious diseases.

There have been significant decreases in other mortality rates with a corresponding narrowing of the gap between AI/AN and general US population data. The infant mortality, an indicator of overall population health, was nearly 90/100,000 in 196 (3.6 times the rate of 25/100,000 in the general US population), and as of 2000 stood at 9.5 per 100,000 compared to 7/100,000, a 1.4 fold difference. Life expectancy at birth for Alaska Natives was only 46.6 years in 1950, and has climbed to 69.5 years as of 1998 (SEIS, 3-184). Corresponding data from the US Department of

Health and Human Services, indicates that life expectancy for US all races was 68.2 years in 1950 and 76.7 in 1998 (USDHHS, 2006).

The SEIS appropriately identifies the fact that early improvements in public health were facilitated by a combination of region-wide increases in general socio-economic status (a powerful determinant of health). Since 1979, much of the continued improvement in mortality figures can be accounted for by decreasing mortality from unintentional injuries. Much of this change can be attributed to local health departments' injury prevention programs and the efficacy of local alcohol control and local prohibition ordinances (SEIS, 3-185).

[44.100] The SEIS mentions several socio-economic status factors like: improved housing, sanitation, health care, and specific infection control efforts. However, there are many other factors that affect health status. These include education, new technology, access to mass media (radio, television, phones, internet, etceteras), religion, work status, laws and many more. Some of these factors may be both positive and negative and are subject to personal or group perceptions (Everest Consulting Associates, 2001). The cumulative effects of future oil and gas development on the Alaska North Slope have been examined in several recent environmental impact statements. These documents generally agree that social changes have occurred in the past but that oil and gas developments are but one of many possible causes (Everest Consulting Associates, 2001).

Significantly, social changes associated with interactions between Alaska Natives and non-Natives began long before oil was discovered on the North Slope of Alaska (Everest Consulting Associates, 2001). Additionally, social change has clearly occurred, and will continue to occur, in Alaska generally and on the North Slope in particular. Oil and gas development has been one cause of this social change - but only one of many (Everest Consulting Associates, 2001). These changes can be seen in isolated native communities removed from oil and gas exploration (Bersamin, 2006). CPAI believes that the discussion on these pages and the conclusions on this topic should reflect the distinction between social change in general since contact with Western civilizations and the specific issue of the impact of oil and gas development.

Volume 1: Chapter 3, Page 3-186: BLM correctly states that there are elevated rates of cancer in the local indigenous communities. A recent study by Espey identified regional patterns and trends in cancer mortality for 1990-2001 (Espey, 2005), in which the Alaska Natives had a higher mortality from cancer than most other regions of American Indians. The mortality rate ratio (Alaska Native/US all race) was 1.26 for all cancers combined, 1.25 for lung, 0.84 breast, 1.71 for colorectal, 1.77 for liver/IHBD, 1.48 for pancreas and 3.60 for stomach cancers. Lanier reviewed cancer mortality for 1999-2003, in which an elevated odds ratio was found (Alaska Native/US White) of 1.0 for all cancers, 1.7 for oral cavity and pharynx, 2.1 for digestive, 2.0 for colorectal, 1.0 for breast, and 1.5 for lung cancers.

No connection to oil and gas development has been shown and CPAI believes elevated cancer rates are largely a result of lifestyle choices. Rates for lung cancer mortality are consistent with known regional patterns of cigarette smoking. Although colorectal cancer mortality patterns are more difficult to account for than regional variations in lung cancer mortality, contributing factors might include diet, physical activity levels, genetic predisposition and access to, or use of clinical preventive services (MMWR, 2003). Plans or modifications for cancer prevention and treatment programs should account for regional variation, and programs to discourage smoking initiation, encourage tobacco cessation, and promote colorectal cancer screening should be expanded (MMWR, 2003). In a study of the causes of death in the US, McGinnis estimated that 50 percent of deaths were caused by major external (non-genetic) factors. Potential causes of cancer included tobacco usage, diet and activity patterns, alcohol, certain infections, and

environmental or occupational exposures (McGinnis, 1993). Sacco reported an increased incidence of *H. pylori* in Alaska Natives, a recognized risk factor for gastric cancer (Sacco, 2007).

A review of petroleum industry mortality studies consistently show lower or similar petroleum worker mortality rates when compared to the general population. Devine found that the standardized mortality ratio was significantly lower for all cancers (83), lung (80), digestive (73), and colorectal (77) cancers. The standardized mortality ratio was not significantly different for liver (94) and pancreas (94) cancers (Divine, 2000). Similar results have been found by Sorahan (Sorahan, 2007), Satin (Satin, 2002) and Tsai (Tsai, 2007). Given the small number of Alaska Natives in geographic proximity and the lack of excess cancers found in petroleum workers, it appears unlikely that the petroleum industry is a significant contributor to the differences in cancer mortality.

Volume 1: Chapter 3, Page 3-187: As BLM states, diabetes is probably a new disease among the Inuit. A circumpolar survey in the late 1980s showed substantial variation in the prevalence of diabetes among the various indigenous groups, although all were below the average for the USA. However, compared with two to three decades earlier, glucose tolerance surveys among Alaska Natives have shown an increase in prevalence of diabetes (Bjerrengaard, 2004).

Wilson found that extreme degrees of obesity are a common and increasing problem among AI/AN adults with diabetes. Wilson did not find an association between the type of diabetes treatment and the trend toward extreme degrees of diabetes. The increase in extreme obesity could potentially affect the burden of morbidity and mortality among AI/AN adults with diabetes. Effective and culturally appropriate weight management interventions are needed (Wilson, 2007).

Naylor reported that the evidence indicates that, while Alaska Natives have a low prevalence of diabetes compared to other Native Americans, they are experiencing a more rapid rate of increase than other groups. It appears that in the Alaska Native populations studied, three changes have occurred over the past few decades: an increased proportion of carbohydrate in the diet, increasing prevalence of obesity, and increasing prevalence of diabetes (Naylor, 2003).

Volume 1: Chapter 3, Page 3-187: BLM correctly states that Cardiovascular Disease is a concern. Although available data indicate no increase in mortality from ischemic heart disease in Alaska Natives, the relatively constant death rates over the recent 20 years, compared with declining rates elsewhere in the U.S, and the high prevalence of risk factors for ischemic heart disease calls for increased descriptive epidemiologic studies of the incidence and prevalence of cardiovascular disease outcomes (Schumacher, 2003). In the report, Schumacher identified risk factors of concern to include increased use of tobacco, apparent changes in eating patterns, decreased traditional physical activity required for a subsistence lifestyle, and increased hypertension.

To address this concern, programs have already been developed. Under the leadership and guidance of tribal and urban Native leaders, as well as the director of the Indian Health Service, there are many exciting and potentially effective initiatives underway that have the potential to make a significant impact on coronary vascular disease and its risk factors as well as to assist in meeting AI/AN goals within Healthy People 2010. Tribal and urban leaders developed this national action plan to provide guidance for those working within Indian Health for the development and implementation of an integrated and systemic approach to cardiovascular disease prevention. As one of the overarching goals in Healthy People 2010, the elimination of disparities among different components of the U.S. populations is a priority (Galloway, 2005).

Volume 1: Chapter 3, Page 3-188: BLM correctly states: North Slope residents have the highest mortality in the State from chronic lung diseases, at nearly 3 times the mortality rate for the U.S... One potential causal factor is smoking. The Behavioral Risk Factor Surveillance System has consistently found a high rate of smoking among Alaska Natives (37.08%) versus Non-Native Alaskans (22.65%) (McLaughlin, 2004).

Another potential causal factor is indoor air quality. Studies of indoor air quality have found significant issues with a strong association between indoor CO₂ levels and the risk of lower respiratory tract infection among the Inuit infants and young children. Kovesi's findings suggest that inadequate home ventilation and overcrowding contributes to the high rate of lower respiratory tract infection observed among Inuit children. Additionally, environmental tobacco smoke may be another risk factor for lower respiratory tract infection in Inuit children. In a meta-analysis, environmental tobacco smoke significantly increased the risk of hospital admission because of lower respiratory tract infection during infancy and early childhood. Presence of smokers in the home was associated with significantly increased risk of lower respiratory tract infections in Sisimiut, Greenland, and in Alaska (Kovesi, 2007).

Shanawani notes that an important cause of lung disease disparities is environmental exposure, at home, outdoors, and at work. These exposures have been shown to have associations with increased symptoms in children with asthma. Compelling as outdoor air quality is, indoor air quality is probably even more important to health disparities, but is considerably more difficult to study. Multiple studies suggest that indoor air quality is strongly associated with asthma burden, which may explain the relationship of urbanicity to health disparity in asthma. Another important cause of health disparities in childhood asthma is exposure to secondhand smoke (Shanawani, 2006). See comment Volume 2: Chapter 4, Page 4-71, among others, for a discussion of outdoor air quality.

The association and dose relationship of smoking and secondhand smoking with other chronic lung diseases such as lung cancer, chronic obstructive pulmonary disease and chronic bronchitis are well known and will not be recounted here.

Volume 1: Chapter 3, Page 3-188: BLM correctly states that there are health disparities between ethnic groups and social classes, and they are not unique to the North Slope Borough. Health disparities are documented in geographically dispersed areas among Alaska Natives, the North Slope Borough, and globally in international circumpolar health studies. Many of the contributors to chronic diseases found in the Alaska Natives are also found in the Canadian Inuit (Young, 2003; Bjerregaard, 2004; and Healey, 2007).

Significant resources are already available to address the disparities. For example, given the unique government-to-government relationship between the federal government and the federally recognized tribes, the Indian Health Service's service goal is to elevate the health status of the Indian and Alaska Native to the highest possible level, with service objectives including; 1) Institution of health programs which assure achievement of the Service goal 2) Management of Service resources, (manpower, money, and materials) in a manner that provides a coordinated and balanced preventive curative and rehabilitative health program 3) Institution of continuing appraisal of health status to insure efficient application of efforts in those areas that will have the greatest impact on achieving the Service's goal, coupled with continued development of tools for measurement, evaluation, and application (IHS Manual, Part1).

[44.101] Volume 1: Chapter 3, Page 3-189: BLM states: some residents of Nuiqsut have observed that illegal importation of drugs and alcohol were facilitated by the ice road which connects Nuiqsut to the Alaskan road system. CPAI wishes to present two points for

consideration. Firstly, the ice road to Nuiqsut is not required for operational purposes. CPAI constructs the road to Nuiqsut at the community's request to reduce the cost of goods and services and to use local contractor services. Pre-oil development challenges are discussed in comment Volume 1: Chapter 3, Page 3-181. Secondly, CPAI worked with community leaders to implement random searches of vehicles traveling the ice road. Local residents are not exempted. The random search program costs up to \$75,000 annually and is paid entirely by CPAI.

[44.102] Volume 2: Chapter 4, Page 4-14: BLM states that spent drilling fluids and rock cuttings are processed and injected into subsurface disposal wells. While a large majority of cuttings are injected into disposal wells, cuttings meeting ADEC's reuse criteria may be used for road and pad maintenance, landfill cover and other similar uses. CPAI believes that reusing cuttings is environmentally preferable because waste volumes are reduced and less local gravel will be required to maintain facilities. CPAI has reused cuttings at the Alpine field for approximately eight years and recently received approval from ADEC for the reuse of Exploration generated cuttings. Should future development occur on BLM land, CPAI would request approval to use approved cuttings to maintain the facilities' gravel infrastructure.

[44.103] Volume 2: Chapter 4, Page 4-23: BLM states that spent drilling fluids and rock cuttings are processed and injected into subsurface disposal wells. While a large majority of cuttings are injected into disposal wells, cuttings meeting ADEC's reuse criteria may be used for road and pad maintenance, landfill cover and other similar uses. CPAI believes that reusing cuttings is environmentally preferable because waste volumes are reduced and less local gravel will be required to maintain facilities. CPAI has reused cuttings at the Alpine field for approximately eight years and recently received approval from ADEC for the reuse of Exploration generated cuttings. Should future development occur on BLM land, CPAI would request approval to use approved cuttings to maintain the facilities' gravel infrastructure.

[44.104] Volume 2: Chapter 4, Page 4-27: In the first full paragraph, there is a discussion of various materials that could be used to build gravel pads. CPAI and others are involved in studies of stabilization methods that could be used in the future to bind natural materials to minimize the need for gravel for pads and more importantly for roads. CPAI requests that the following paragraph be added to this section:

Due to a lack of suitable gravel material in NPR-A, year-round roads may be constructed with native material using a variety of stabilization methods. Various methods have been and are currently being evaluated by industry, government agencies, and academia. Stabilization methods may include, but are not limited to: geotextiles or geogrids; geosynthetic or natural fiber additives; and chemical additives. An optimum stabilization method, which will be material-specific and may vary by location, has not yet been selected and will require further evaluation and testing.

[44.105] Volume 2: Chapter 4, Page 4-30: BLM states that wastes are not discharged but processed and injected into subsurface disposal wells. While a large majority of cuttings are injected into disposal wells, cuttings meeting ADEC's reuse criteria may be used for road and pad maintenance, landfill cover and other similar uses. CPAI believes that reusing cuttings is environmentally preferable because waste volumes are reduced and less local gravel will be required to maintain facilities. CPAI has reused cuttings at the Alpine field for approximately eight years and recently received approval from ADEC for the reuse of Exploration generated cuttings. Should future development occur on BLM land, CPAI would request approval to use approved cuttings to maintain the facilities' gravel infrastructure.

[44.106] Volume 2: Chapter 4, Page 4-35: CPAI recommends that BLM add where practicable after Pipeline alignments would be routed to avoid crossing lakes.

[44.107] Volume 2: Chapter 4, Page 4-58: In the first paragraph of Oil Spills, after spills, CPAI recommends adding could so it reads: In the NPR-A Planning Area, spills could occur from pipelines.

[44.108] Volume 2: Chapter 4, Page 4-70: BLM briefly discusses diesel fired power generation in North Slope villages, but does not consider the use of Ultra Low Sulfur Diesel ("ULSD") use in both North Slope villages and North Slope Oil fields. Beginning in 2010, ULSD will be in use throughout rural Alaska. Its use will result in lower sulfur dioxide and particulate matter emissions.

[44.109] Volume 2: Chapter 4, Page 4-70: BLM uses the term construction phase. The term development phase is used elsewhere (SEIS, 4-685). Consistent terminology is suggested.

[44.110] Volume 2: Chapter 4, Page 4-70: BLM states that drilling engines/turbines are principle emission sources during the construction phase. It is unlikely that turbines would be used in the construction phase, unless highline power already existed at the new pad. For pads in remote areas, where highline power is not yet available, drilling is powered by diesel engines. CPAI recommends that the statement be revised to reflect the low probability that turbines would be used in the construction phase.

[44.111] Volume 2: Chapter 4, Page 4-70: BLM states that VOC emissions could occur from oil/water separators. On the North Slope, enclosed modules are used because of extreme weather. Consequently, it is standard practice to route vapors released during oil/water separation back into the process. It is a closed loop system. CPAI recommends that the statement be revised to reflect the low probability of emissions from the modules.

[44.112] Volume 2: Chapter 4, Page 4-71: BLM discussed Hazardous Air Pollutants ("HAP"). It includes a reference to hydrogen sulfide. It could be misinterpreted to be a HAP. Hydrogen sulfide is not defined as a HAP by the CAA and CPAI recommends that the reference be clarified.

[44.113] Volume 2: Chapter 4, Page 4-71: BLM states that, without project specific proposals, it is not possible to quantitatively predict potential localized air quality impacts. CPAI believes the statement is misleading because it overlooks the ambient monitoring data collected on the North Slope since 1986. Ambient localized air impacts from future development are not expected to be greater than existing localized air impacts measured on the North Slope. More likely, the ambient air impacts will be less than existing localized air impacts because of lower emitting heaters and turbines available in today's market and the use of ULSD beginning in 2010.

[44.114] Volume 2: Chapter 4, Page 4-71: BLM refers to low NOx flares. CPAI is unaware of low NOx flare technology. There are, however, low NOx burners for heaters and low NOx turbines. CPAI recommends that the reference be clarified or else additional support and discussion be added.

[44.115] Volume 2: Chapter 4, Page 4-71: In the paragraph Native Views on Air Emissions, the air pollution related statements are not supported by factual evidence. Respiratory illness has rightly been a concern for some time. For example, in 1982 at the Nuiqsut clinic, 19.3% of medical complaints were respiratory in nature (MMS, 1984). Air pollution has been blamed for sometime, so the quoted air pollution viewpoint is not unique. For example, it is discussed in a

letter from the North Slope Borough to ARCO Alaska, Inc. in 1997 and is discussed in an Alaska Daily News Commentary piece in 2003 (both enclosed).

In 1999, ARCO Alaska, Inc. (now known as CPAI) placed an ambient air quality monitoring station in the village of Nuiqsut. The station was operated, in strict accordance with EPA/ADEC protocols, to comply with a permit stipulation for one year, and has been operated since, in accordance with the referenced protocols, as a voluntary measure. In the last eight years (through June 30, 2007), NAAQS have been met continuously with the exception of three PM₁₀ excursions caused by dust blown from nearby river banks. CPAI believes the burden of proof has been met with respect to the village of Nuiqsut and industrial air pollution. CPAI believes that alternative hypotheses related to topics such as the high rate of smoking and indoor air quality should be further explored to determine the root cause of respiratory illness. Current and historical research related to the topics is limited (SEIS Page 3-188), but is best conducted by public health department personnel. See comment Volume 1: Chapter 3, Page 3-188, among others, for additional discussion.

[44.116] Volume 2: Chapter 4, Page 4-72: BLM states that potential PM₁₀ control measures include limiting vehicle speeds, and treating problematic road sections with surfactants or water. The referenced measures are already undertaken both by permit stipulation and voluntarily by North Slope operators, which should be acknowledged in the SEIS.

[44.117] Volume 2: Chapter 4, Page 4-80: BLM states: In flat, thaw-lake plains on the North Slope, gravel construction can be anticipated to result in upslope water impoundment and thermokarst erosion equivalent to the area directly covered by gravel (Walker et al. 1987). Firstly, Walker et al., 1987 is a dated reference. Gravel construction techniques have greatly improved and placement of culverts to prevent impoundments is now standard practice. This should be acknowledged in the text. **[44.118]** Secondly, Lease Stipulation 43 requires natural drainage patterns to be identified and maintained during and after construction to prevent impoundments or alteration of the hydrologic regime. CPAI believes that the statement overestimates potential impacts.

[44.119] Volume 2: Chapter 4, Page 4-92: BLM states that ice roads across intermediate depth lakes (6 to 7 feet) would be designed to freeze the entire water column below the road, isolating portions of the lake basin and restricting circulation. This is incorrect. CPAI suggests changing would be designed to freeze the entire water column to could result in freezing of the entire water column.

[44.120] Volume 2: Chapter 4, Page 4-95: BLM again refers to Walker et al., 1987. Firstly, Walker et al., 1987 is a dated reference. Gravel construction techniques have greatly improved and placement of culverts to prevent impoundments is now standard practice. This should be acknowledged in the text. Secondly, Lease Stipulation 43 requires natural drainage patterns to be identified and maintained during and after construction to prevent impoundments or alteration of the hydrologic regime, so the statement overestimates potential impacts.

[44.121] Volume 2: Chapter 4, Page 4-104: BLM states that O₃ is emitted by oil development and production. This statement is inaccurate. Ozone is not a product of combustion but instead is formed photo-chemically in the atmosphere. A similar error occurs in the middle of the paragraph in a description of emissions from CCP. Both erroneous references should be corrected.

[44.122] Volume 2: Chapter 4, Page 4-112: In the second paragraph of Ice Pads and Roads, CPAI recommends changing 25 foot width to 35 foot width, for a typical ice road.

[44.123] Volume 2: Chapter 4, Page 4-115: For consistency, CPAI recommends adding the following text, found on page 4-104, to Pipelines, end of second paragraph: However, there are no data that specifically address these questions. In general, Arctic plants are limited by nutrient availability rather than photosynthesis, and it is unlikely that pipeline shading substantially impacts vegetation physiologically (Tieszen 1978, Billings 1987, Bliss 2000).

[44.124] Volume 2: Chapter 4, Page 4-127: If the summer tundra travel analysis is presented here for impacts to fish, it should also be in the previous sections on impacts to soil, water, vegetation, and wetlands.

[44.125] Volume 2: Chapter 4, Page 4-154: Proposed Mitigation Measure 1a states: Removal of sand and/or gravel from cliffs shall be prohibited. It is not obvious how this would impact the dinosaur dig at Ocean Point. CPAI requests that the statement be clarified.

[44.126] Volume 2: Chapter 4, Page 4-155: To fully consider impacts, BLM should complete an analysis of impacts from subsistence hunting and trapping.

[44.127] Volume 2: Chapter 4, Page 4-162: BLM states: Oil field facilities (other than pipeline) would not be located within one mile of major stream drainages. The statement is accurate except for portions of the Colville River. Many rivers have a 1/2 mile buffer.

[44.128] Volume 2: Chapter 4, Page 4-170: To fully consider impacts, BLM should complete an analysis of impacts from subsistence hunting of seals and whales. Additionally, BLM should expand the analysis of polar bears, beyond an estimate of bears killed, to include behavioral modification or stress as is discussed frequently for other activities in Marine Mammal Protection Act ("MMPA") related documents.

[44.129] Volume 2: Chapter 4, Page 4-170: To fully consider impacts, BLM should complete analyses of impacts to marine mammals from recreational and subsistence related boat traffic originating from North Slope communities, and from barge traffic associated with community re-supply activities.

[44.130] Volume 2: Chapter 4, Page 4-178: To fully consider impacts, CPAI recommends an analysis of impacts from subsistence hunting.

[44.131] Volume 2: Chapter 4, Page 4-207: The agency jurisdictions listed for fish habitat management are incorrect. Fish habitat management is the responsibility of the State or NOAA/NMFS, not the USACE or the Coast Guard.

[44.132] Volume 2: Chapter 4, Page 4-234: BLM refers to drilling rigs being painted red. CPAI is unaware of red rigs on the North Slope. The drilling rig color depends on the drilling company.

[44.133] Volume 2: Chapter 4, Page 4-234: A Christmas tree is not the same thing as a marker pipe and the reference should be corrected.

[44.134] Volume 2: Chapter 4, Page 4-235: BLM refers to drilling rigs being painted red. CPAI is unaware of red rigs on the slope. The drilling rig color depends on the drilling company.

[44.135] Volume 2: Chapter 4, Page 4-248: CPAI believes that BLM does not satisfactorily evaluate local sources of air pollution and their health effects here or in sections 4.3.1.1 and 4.3.19.1. CPAI believes that local sources of air pollution are more likely to affect residents'

health than oil and gas related emissions. Specific discussion topics, at a minimum, should include;

* The NSB's and/or city governments' policies or procedures for road watering or dust control activities, in villages, to minimize residents' exposure to dust (PM10) should be discussed.

* Discussion of open burning refuse at Nuiqsut's landfill and other villages should the practice occur there.

* The NSB's and/or city governments' power plant emission controls, source testing data, and/or emissions calculations should be presented and discussed.

* The NSB's and/or city governments' ambient air monitoring data should be presented and discussed.

* The NSB's and/or city governments' programs to encourage residents to plug in vehicles versus idling or starting cold should be discussed.

[44.136] Volume 2: Chapter 4, Page 4-248: BLM states that O3 is emitted by oil and gas activities. This statement is inaccurate. Ozone is not a product of combustion but instead is formed photo chemically in the atmosphere. CPAI requests that the reference be corrected.

[44.137] Volume 2: Chapter 4, Page 4-248: BLM states that lead is emitted from oil and gas activities. Lead emissions from oil and gas activities would depend upon whether any lead exists in combusted fuels or would otherwise be emitted by combustion devices. The document does not provide a reference to support that lead could be emitted by oil and gas activities on the North Slope. CPAI recommends that the statements be clarified and supporting cites added.

Volume 2: Chapter 4, Page 4-248: In the last paragraph of this page, the document states; according to EPA analysis and several independent studies, substantial health effects accrue at even levels below NAAQS standards, down to ambient levels (Ostro et al 2006; USEPA 2006b). Additionally, the text continues on to say: given the baseline health disparities.....North Slope communities would face substantial health risk from increased particulate emissions, even if air quality continued to meet NAAQS standards.

[44.138] It is of concern that substantial risk from air concentrations meeting federal standards is anticipated. It appears that the data do not fully support the assertion. For example, the Ostro et al. paper cited in this section refers only to particulate matter and not to the other criteria pollutants (NOx, SO2, ozone, lead and CO), and the USEPA 2006b reference also refers only to particulates. No references are provided to support that exposure to NOx, SO2, ozone, lead and CO at air concentrations meeting federal standards will result in substantial risk. See also comments Volume 2: Chapter 4, Page 4-71 and Volume 2: Chapter 4, Page 4-249 among others for additional details. CPAI requests that the statements be clarified and corrected as necessary.

[44.139] Volume 2: Chapter 4, Page 4-249: At the top of this page, the document states that the NSB is concerned that models used to predict air quality on the North Slope have not been validated, particularly in view of arctic climate conditions. CPAI disagrees. All models used by North Slope oil and gas operators have been approved by the EPA and/or ADEC. Air quality permits cannot be issued based on unapproved models. Each approved model goes through rigorous testing and analysis by EPA and ADEC. Lessees are required by law to use the approved modeling tools. CPAI requests that the statements be clarified and corrected as necessary.

[44.140] Volume 2: Chapter 4, Page 4-249: In the same paragraph, the document states that it is critically important to establish a scientifically robust monitoring program to validate current predictions. The statement ignores the robust monitoring program that is already ongoing in the North Slope oilfields. More than 20 years of ambient air quality and meteorological data have been gathered according to the strict protocols of EPA and ADEC. These data would be admissible in a court of law and should not be ignored. CPAI requests that the statements be clarified and corrected as necessary.

[44.141] Volume 2: Chapter 4, Page 2-249: BLM states: Due to the distance of potential development from most population centers, substantial reductions in village air quality is unlikely. The statement contradicts those on page 4-609 in terms of health impacts. From the discussion on pages 4-248 and 4-249, it is unclear as to whether there are additional conditions or requirements imposed on lessees even if air concentrations of EPA Criteria Pollutants are in compliance with NAAQS. CPAI requests that the statements be clarified and corrected as necessary.

[44.142] Volume 2: Chapter 4, Page 4-249: CPAI believes that other sources of contamination and their health effects here and in section 4.3.19.1 have not been properly evaluated. CPAI believes that local sources of contamination are more likely to affect residents' health than oil and gas development. CPAI recommends that specific discussion topics, at a minimum, should include;

- * ADEC's contaminated sites database information should be reviewed, presented and discussed. Many villages have contaminated sites that are potential exposure sources.

- * ADEC's village spill reports/statistics should be reviewed, presented and discussed. Local spills are a potential exposure source.

[44.143] Volume 2: Chapter 4, Page 4-249: BLM states; Data from other communities in which the "total petroleum hydrocarbons" concentrated in water (from air and waterborne sources) has documented a correlation between proximity to oil and gas exploration and production and health outcomes, including cancer and miscarriages (San Sebastian, Armstrong 2001, 2002; Hurtig, San Sebastian 2002). The cited reports pertain to studies conducted in the Amazon basin of Ecuador. There have been a number of evaluations conducted that criticize the findings of these studies and strongly question their ability to draw causal relationships. One such review conducted by Dr. David J. Hewitt who is Director of Occupational Health Services for the Center for Toxicology and Environmental Health, L.L.C. in Little Rock, Arkansas. His conclusion is below and can be located at:

Based on my training and experience in epidemiology, toxicology, and occupational and environmental medicine, it is my opinion that a causal relationship between living near areas of oil exploration in Ecuador and health conditions such as adverse pregnancy outcomes and cancer cannot be supported based on an inability to satisfy basic criteria for establishing causation. These deficiencies include:

- * Health effects which are not consistent with known health effects of the reported chemicals;

- * Incomplete exposure assessment;

- * No objective verification of exposure or magnitude (dose-response) of exposure in study participants;

* Significant methodological problems in health studies which precludes any type of causal conclusion;

* Other potential causes for reported health effects were not reliably excluded. In the case of cancer, recognized risk factors such as infections or nutritional factors were not addressed.

Other evaluations, all with similar criticisms, can be located at the following website: . The reviewers include; 1) Dr. Alvaro Felipe Dávalos Pérez, Ecuadorian expert in tropical medicine 2) Dr. Felix Arellano, physician with specialty in clinical pharmacology, member of the Board of Directors of the International Society for Pharmacoepidemiology, Visiting Fellow at St. Vincent's Clinical School, New South Wales, co-founder, Risk Management Resources 3) Dr. Ken Rothman, Professor of Epidemiology and Medicine at Boston University, founding editor of the journal, Epidemiology, co-founder, Risk Management Resources 4) Dr. Lowell Sever, Professor of Epidemiology, University of Texas-Houston, School of Public Health 5) Dr. Laura Green, a board-certified toxicologist, Diplomate of the American Board of Toxicology, lecturer in the Division of Toxicology at the Massachusetts Institute of Technology and Senior Scientist and President of Cambridge Environmental

[44.144] Volume 2: Chapter 4, Page 4-249: In the section Health Problems Related to Other Contaminants, the document states that the NSB has formally requested that industry be required to utilize Maximum Achievable Control Technology on all HAP emission sources in the planning area, but the NSB does not provide a factual basis for HAP controls specific to the North Slope. Regardless, such as regulatory process already exists. It is contained in 40 CFR Part 63. All North Slope projects are scrutinized for applicability to Part 63 controls during the permitting process. CPAI requests that the Part 63 reference be included.

[44.145] Volume 2: Chapter 4, Page 4-249: In the section Health Problems Related to Other Contaminants, the document states that the NSB has formally requested that clean fuels, such as low-sulfur diesel, be used. ULSD will be used in all areas of the North Slope, including North Slope villages, no later than 2010. CPAI requests that the ULSD information be included.

[44.146] Volume 2: Chapter 4, Page 4-256: In the first paragraph, BLM states that displacement of fish is anticipated. A citation is not provided. CPAI believes that a citation should be added to clarify the reference.

[44.147] Volume 2: Chapter 4, Page 4-262: BLM states that potential PM10 control measures include limiting vehicle speeds, and treating problematic road sections with surfactants or water. The referenced measures are already undertaken both by permit stipulation and voluntarily by North Slope operators, which CPAI believes should be acknowledged in the SEIS text.

[44.148] Volume 2: Chapter 4, Page 4-268: BLM states: In flat, thaw-lake plains on the North Slope, gravel construction can be anticipated to result in upslope water impoundment and thermokarst erosion equivalent to the area directly covered by gravel (Walker et al. 1987). Walker et al., 1987 is a dated reference. Gravel construction techniques have greatly improved and placement of culverts to prevent impoundments is now standard practice. CPAI believes that this should be acknowledged in the text.

[44.149] Volume 2: Chapter 4, Page 4-311: Proposed Mitigation Measure 1a states: Removal of sand and/or gravel from cliffs shall be prohibited. It is not obvious how this would impact the dinosaur dig at Ocean Point. CPAI believes that the point should be clarified.

[44.150] Volume 2: Chapter 4, Page 4-320: To fully consider impacts, BLM should complete an analysis of impacts from subsistence hunting of seals and whales. Additionally, BLM should expand the analysis of polar bears, beyond an estimate of bears killed, to include behavioral modification or stress as is discussed frequently for other activities in MMPA related documents.

[44.151] Volume 2: Chapter 4, Page 4-320: To fully consider impacts, CPAI recommends analyses of impacts to marine mammals from recreational and subsistence related boat traffic originating from North Slope communities and impacts to marine mammals from barge traffic associated with community re-supply activities.

[44.152] Volume 2: Chapter 4, Page 4-324: To fully consider impacts, CPAI recommends an analysis of impacts from subsistence hunting.

[44.153] Volume 2: Chapter 4, Page 4-367: BLM refers to drilling rigs being painted red. CPAI is unaware of red rigs on the slope. The drilling rig color depends on the drilling company. CPAI recommends that the reference be corrected.

[44.154] Volume 2: Chapter 4, Page 4-368: A Christmas tree is not the same thing as a marker pipe and CPAI requests that the reference be corrected.

[44.155] Volume 2: Chapter 4, Page 4-368: BLM refers to drilling rigs being painted red. CPAI is unaware of red rigs on the slope. The drilling rig color depends on the drilling company. CPAI recommends that the reference be corrected.

[44.156] Volume 2: Chapter 4, Page 4-376: CPAI believes that local sources of air pollution and their health effects here and in sections 4.4.1.1 and 4.4.19.1 have not been properly evaluated. CPAI believes that local sources of air pollution are more likely to affect residents' health than oil and gas related emissions. Specific discussion topics, at a minimum, should include;

- * The NSB's and/or city governments' policies or procedures for road watering or dust control activities, in villages, to minimize residents' exposure to dust (PM10).

- * Discussion of open burning refuse at Nuiqsut's landfill and other villages should the practice occur there.

- * The NSB's and/or city governments' power plant emission controls, source testing data, and/or emissions calculations should be presented and discussed.

- * The NSB's and/or city governments' ambient air monitoring data should be presented and discussed.

- * The NSB's and/or city governments' programs to encourage residents to plug in vehicles versus idling or starting cold to be presented and discussed.

Volume 2: Chapter 4, Page 4-376: BLM states: According to EPA analysis and several independent studies, substantial health effects accrue at even levels below NAAQS standards, down to ambient levels (Ostro et al 2006; USEPA 2006b). Additionally, the text continues on to say: given the baseline health disparities....North Slope communities would face substantial health risk from increased particulate emissions, even if air quality continued to meet NAAQS standards.

[44.157] It is of concern that substantial risk from air concentrations meeting federal standards is anticipated. It appears that the data do not fully support the assertion. For example, the Ostro et al. paper cited in this section refers only to particulate matter and not to the other criteria pollutants (NO_x, SO₂, ozone, lead and CO), and the USEPA 2006b reference also refers only to particulates. No references are provided to support that exposure to NO_x, SO₂, ozone, lead and CO at air concentrations meeting federal standards will result in substantial risk. See also comments Volume 2: Chapter 4, Page 4-71 and Volume 2: Chapter 4, Page 4-377 among others for additional details.

[44.158] Volume 2: Chapter 4, Page 4-376: At the bottom of this page, the document states that the NSB is concerned that models used to predict air quality on the North Slope have not been validated, particularly in view of arctic climate conditions. CPAI disagrees. All models used by North Slope oil and gas operators have been approved by the EPA and/or ADEC. Air quality permits cannot be issued based on unapproved models. Each approved model goes through rigorous testing and analysis by EPA and ADEC. Lessees are required by law to use the approved modeling tools. CPAI requests that the statements be clarified and corrected as necessary.

[44.159] Volume 2: Chapter 4, Page 4-377: BLM states: Due to the distance of potential development from most population centers, substantial reductions in village air quality is unlikely. The statement contradicts those on page 4-376 in terms of health impacts. From the discussion on pages 4-376 and 4-377, it is unclear as to whether there are additional conditions or requirements imposed on lessees even if air concentrations of EPA Criteria Pollutants are in compliance with NAAQS. CPAI requests that the point be clarified.

[44.160] Volume 2: Chapter 4, Page 4-377: CPAI believes that other sources of contamination and their health effects here and in section 4.4.19.1 have not been satisfactorily evaluated. CPAI believes that local sources of contamination are more likely to affect residents' health than oil and gas development. Specific discussion topics, at a minimum, should include:

- * ADEC's contaminated sites database information should be reviewed, presented and discussed. Many villages have contaminated sites that are potential exposure sources.

- * ADEC's village spill reports/statistics should be reviewed, presented and discussed. Local spills are a potential exposure source.

[44.161] Volume 2: Chapter 4, Page 4-377: BLM states: Public health data support the link between contaminants produced by oil development, and the risk of cancer, endocrine disruption, and cognitive disorders (Jacobsen et al 1996; Arctic Monitoring and Assessment Program 2003; Cone 2005)."

CPAI was concerned that the statement cited above is a blanket statement that does not specify the particular contaminants, besides noting that they are not EPA Criteria Pollutants. An attempt to verify the cited sources for this statement resulted in the following findings; 1) Jacobsen et al, 1996 is not listed in the bibliography of the NE NPR-A SEIS, and therefore CPAI could not verify this source. 2) A Medline search was conducted for Jacobsen & 1996; however, the located article titles did not correlate with the topic of interest. 3) The Arctic Monitoring and Assessment Program 2003 was reviewed, and although this document addresses health endpoints such as cancer, endocrine disruption and cognitive disorders, it does not at any point attribute these effects to oil development. A search of the eleven chapter text for the word "oil" resulted in hits on rice oil and seal oil, and one hit in Chapter 10 which stated: Total emissions and long-range transport of Hg continue and even increase from North America and southeast

Asia through 2010 with continued reliance on fossil fuels (especially oil and coal) for energy. A search for the term "petroleum" found a reference in chapter 1 that indicated: Acidification and petroleum hydrocarbons were regarded during the first phase of AMAP (1991-1996) as having no immediate impact on human health and were consequently not addressed in the health assessment that was prepared under AMAP Phase I. Searches on the words benzene, BTEX and industry resulted in no relevant hits. 4) The Cone, 2005 reference is to a book entitled Silent Snow: The Slow Poisoning of the Arctic. The book refers heavily to the "Arctic Paradox", a process whereby persistent, organic compounds are not remaining in urban areas where they have been released and are in fact being transported in high concentrations to the Arctic. It does not appear that this book is relating any of the health effects specifically to oil development. Additionally, this book is written with a journalistic bias and should not be used as a technical source of information in this report. Overall, CPAI believes the referenced documents are not relevant to health effects from oil development on the North Slope and that the statement made in reliance on the reference documents should be corrected and clarified.

[44.162] Volume 2: Chapter 4, Page 4-377: BLM states: Data from other communities in which the "total petroleum hydrocarbons" concentrated in water (from air and waterborne sources) has documented a correlation between proximity to oil and gas exploration and production and health outcomes, including cancer and miscarriages (San Sebastian, Armstrong 2001, 2002; Hurtig, San Sebastian 2002). The cited reports pertain to studies conducted in the Amazon basin of Ecuador. There have been a number of evaluations conducted that criticize the findings of these studies and strongly question their ability to draw causal relationships. One such review conducted by Dr. David J. Hewitt who is Director of Occupational Health Services for the Center for Toxicology and Environmental Health, L.L.C. in Little Rock, Arkansas. His conclusion is below and can be located at:

Based on my training and experience in epidemiology, toxicology, and occupational and environmental medicine, it is my opinion that a causal relationship between living near areas of oil exploration in Ecuador and health conditions such as adverse pregnancy outcomes and cancer cannot be supported based on an inability to satisfy basic criteria for establishing causation. These deficiencies include:

- * Health effects which are not consistent with known health effects of the reported chemicals;
- * Incomplete exposure assessment;
- * No objective verification of exposure or magnitude (dose-response) of exposure in study participants;
- * Significant methodological problems in health studies which precludes any type of causal conclusion;
- * Other potential causes for reported health effects were not reliably excluded. In the case of cancer, recognized risk factors such as infections or nutritional factors were not addressed.

Other evaluations, all with similar criticisms, can be located at the following website: . The reviewers include; 1) Dr. Alvaro Felipe Dávalos Pérez, Ecuadorian expert in tropical medicine 2) Dr. Felix Arellano, physician with specialty in clinical pharmacology, member of the Board of Directors of the International Society for Pharmacoepidemiology, Visiting Fellow at St. Vincent's Clinical School, New South Wales, co-founder, Risk Management Resources 3) Dr. Ken Rothman, Professor of Epidemiology and Medicine at Boston University, founding editor of the journal, Epidemiology, co-founder, Risk Management Resources 4) Dr. Lowell Sever,

Professor of Epidemiology, University of Texas-Houston, School of Public Health 5) Dr. Laura Green, a board-certified toxicologist, Diplomate of the American Board of Toxicology, lecturer in the Division of Toxicology at the Massachusetts Institute of Technology and Senior Scientist and President of Cambridge Environmental. CPAI requests that the statement be clarified and corrected as necessary.

[44.163] Volume 2: Chapter 4, Page 4-386: BLM states that potential PM10 control measures include limiting vehicle speeds, and treating problematic road sections with surfactants or water. The referenced measures are already undertaken both by permit stipulation and voluntarily by North Slope operators, which CPAI believes should be acknowledged in the SEIS text.

[44.164] Volume 2: Chapter 4, Page 4-391: BLM states: In flat, thaw-lake plains on the North Slope, gravel construction can be anticipated to result in upslope water impoundment and thermokarst erosion equivalent to the area directly covered by gravel (Walker et al. 1987). Walker et al., 1987 is an old reference. Gravel construction techniques have greatly improved and placement of culverts to prevent impoundments is now standard practice. CPAI believes that this should be acknowledged in the text.

[44.165] Volume 2: Chapter 4, Page 4-429: Proposed Mitigation Measure 1a states: Removal of sand and/or gravel from cliffs shall be prohibited. How would this impact the dinosaur dig at Ocean Point?

[44.166] Volume 2: Chapter 4, Page 4-430: To fully consider impacts, CPAI believes that BLM should complete an analysis of impacts from subsistence hunting and trapping.

[44.167] Volume 2: Chapter 4, Page 4-436: To fully consider impacts, CPAI believes that BLM should complete an analysis of impacts from subsistence hunting of seals and whales. Additionally, BLM should expand the analysis of polar bears, beyond an estimate of bears killed, to include behavioral modification or stress as is discussed frequently for other activities in MMPA related documents.

[44.168] Volume 2: Chapter 4, Page 4-436: To fully consider impacts CPAI believes that BLM should complete analyses of impacts to marine mammals from recreational and subsistence related boat traffic originating from North Slope communities and of impacts to marine mammals from barge traffic associated with community re-supply activities.

[44.169] Volume 2: Chapter 4, Page 4-439: To fully consider impacts, CPAI recommends an analysis of impacts from subsistence hunting.

[44.170]

Volume 2: Chapter 4, Page 4-480: BLM refers to drilling rigs being painted red. CPAI is unaware of red rigs on the slope. The drilling rig color depends on the drilling company. CPAI recommends that the reference be corrected.

[44.171] Volume 2: Chapter 4, Page 4-480: A Christmas tree is not the same thing as a marker pipe. CPAI recommends that the reference be corrected.

[44.172] Volume 2: Chapter 4, Page 4-481: BLM refers to drilling rigs being painted red. CPAI is unaware of red rigs on the slope. The drilling rig color depends on the drilling company. CPAI recommends that the reference be corrected.

[44.173] Volume 2: Chapter 4, Page 4-488: CPAI believes that the local sources of air pollution and their health effects here and in sections 4.5.1.1 and 4.5.19.1 have not been satisfactorily evaluated. CPAI believes that local sources of air pollution are more likely to affect residents' health than oil and gas related emissions. Specific discussion topics, at a minimum, should include;

- * The NSB's and/or city governments' policies or procedures for road watering or dust control activities, in villages, to minimize residents' exposure to dust (PM10).

- * Discussion of open burning refuse at Nuiqsut's landfill and other villages should the practice occur there.

- * The NSB's and/or city governments' power plant emission controls, source testing data, and/or emissions calculations should be presented and discussed.

- * The NSB's and/or city governments' ambient air monitoring data should be presented and discussed.

- * The NSB's and/or city governments' programs to encourage residents to plug in vehicles versus idling or starting cold to be presented and discussed.

Volume 2: Chapter 4, Page 4-488: BLM states: According to EPA analysis and several independent studies, substantial health effects accrue at even levels below NAAQS standards, down to ambient levels (Ostro et al 2006; USEPA 2006b). Additionally, the text continues on to say: given the baseline health disparities.....North Slope communities would face substantial health risk from increased particulate emissions, even if air quality continued to meet NAAQS standards.

[44.174] It is of concern that substantial risk from air concentrations meeting federal standards is anticipated. It appears that the data do not fully support the assertion. For example, the Ostro et al. paper cited in this section refers only to particulate matter and not to the other criteria pollutants (NO_x, SO₂, ozone, lead and CO), and the USEPA 2006b reference also refers only to particulates. No references are provided to support that exposure to NO_x, SO₂, ozone, lead and CO at air concentrations meeting federal standards will result in substantial risk. See also comments Volume 2: Chapter 4, Page 4-71 and Volume 2: Chapter 4, Page 4-489 among others for additional details. CPAI believes that the discussion should be clarified and corrected as necessary.

[44.175] Volume 2: Chapter 4, Page 4-489: At the top of this page, the document states that the NSB is concerned that models used to predict air quality on the North Slope have not been validated, particularly in view of arctic climate conditions. CPAI disagrees. All models used by North Slope oil and gas operators have been approved by the EPA and/or ADEC. Air quality permits cannot be issued based on unapproved models. Each approved model goes through rigorous testing and analysis by EPA and ADEC. Lessees are required by law to use the approved modeling tools. CPAI requests that the statement be clarified and corrected as necessary.

[44.176] Volume 2: Chapter 4, Page 4-489: BLM states: Due to the distance of potential development from most population centers, substantial reductions in village air quality is unlikely. The statement contradicts those on page 4-488 in terms of health impacts. From the discussion on pages 4-488 and 4-489, it is unclear as to whether there are additional conditions or requirements imposed on lessees even if air concentrations of EPA Criteria Pollutants are in compliance with NAAQS. CPAI recommends that the reference be clarified.

[44.177] Volume 2: Chapter 4, Page 4-489: CPAI believes that other sources of contamination and their health effects here and in section 4.5.19.1 have not been satisfactorily evaluated. CPAI believes that local sources of contamination are more likely to affect residents' health than oil and gas development. Specific discussion topics, at a minimum, should include;

* ADEC's contaminated sites database information should be reviewed, presented and discussed. Many villages have contaminated sites that are potential exposure sources.

* ADEC's village spill reports/statistics should be reviewed, presented and discussed. Local spills are a potential exposure source.

[44.178] Volume 2: Chapter 4, Page 4-489: BLM states: Public health data support the link between contaminants produced by oil development, and the risk of cancer, endocrine disruption, and cognitive disorders (Jacobsen et al 1996; Arctic Monitoring and Assessment Program 2003; Cone 2005)."

CPAI was concerned that the statement cited above is a blanket statement that does not specify the particular contaminants, besides noting that they are not EPA Criteria Pollutants. An attempt to verify the cited sources for this statement resulted in the following findings; 1) Jacobsen et al, 1996 is not listed in the bibliography of the NE NPR-A SEIS, and therefore CPAI could not verify this source. 2) A Medline search was conducted for Jacobsen & 1996; however, the located article titles did not correlate with the topic of interest. 3) The Arctic Monitoring and Assessment Program 2003 was reviewed, and although this document addresses health endpoints such as cancer, endocrine disruption and cognitive disorders, it does not at any point attribute these effects to oil development. A search of the eleven chapter text for the word "oil" resulted in hits on rice oil and seal oil, and one hit in Chapter 10 which stated: Total emissions and long-range transport of Hg continue and even increase from North America and southeast Asia through 2010 with continued reliance on fossil fuels (especially oil and coal) for energy. A search for the term "petroleum" found a reference in chapter 1 that indicated: Acidification and petroleum hydrocarbons were regarded during the first phase of AMAP (1991-1996) as having no immediate impact on human health and were consequently not addressed in the health assessment that was prepared under AMAP Phase I. Searches on the words benzene, BTEX and industry resulted in no relevant hits. 4) The Cone, 2005 reference is to a book entitled Silent Snow: The Slow Poisoning of the Arctic. The book refers heavily to the "Arctic Paradox", a process whereby persistent, organic compounds are not remaining in urban areas where they have been released and are in fact being transported in high concentrations to the Arctic. It does not appear that this book is relating any of the health effects specifically to oil development. Additionally, this book is written with a journalistic bias and should not be used as a technical source of information in this report. Overall, CPAI believes the referenced documents are not relevant to health effects from oil development on the North Slope and the statements should be clarified and corrected as necessary.

[44.179] Volume 2: Chapter 4, Page 4-489: BLM states; Data from other communities in which the "total petroleum hydrocarbons" concentrated in water (from air and waterborne sources) has documented a correlation between proximity to oil and gas exploration and production and health outcomes, including cancer and miscarriages (San Sebastian, Armstrong 2001, 2002; Hurtig, San Sebastian 2002). The cited reports pertain to studies conducted in the Amazon basin of Ecuador. There have been a number of evaluations conducted that criticize the findings of these studies and strongly question their ability to draw causal relationships. One such review conducted by Dr. David J. Hewitt who is Director of Occupational Health Services for the Center for Toxicology and Environmental Health, L.L.C. in Little Rock, Arkansas. His conclusion is below and can be located at:

Based on my training and experience in epidemiology, toxicology, and occupational and environmental medicine, it is my opinion that a causal relationship between living near areas of oil exploration in Ecuador and health conditions such as adverse pregnancy outcomes and cancer cannot be supported based on an inability to satisfy basic criteria for establishing causation. These deficiencies include:

- * Health effects which are not consistent with known health effects of the reported chemicals;
- * Incomplete exposure assessment;
- * No objective verification of exposure or magnitude (dose-response) of exposure in study participants;
- * Significant methodological problems in health studies which precludes any type of causal conclusion;
- * Other potential causes for reported health effects were not reliably excluded. In the case of cancer, recognized risk factors such as infections or nutritional factors were not addressed.

Other evaluations, all with similar criticisms, can be located at the following website: . The reviewers include; 1) Dr. Alvaro Felipe Dávalos Pérez, Ecuadorian expert in tropical medicine 2) Dr. Felix Arellano, physician with specialty in clinical pharmacology, member of the Board of Directors of the International Society for Pharmacoepidemiology, Visiting Fellow at St. Vincent's Clinical School, New South Wales, co-founder, Risk Management Resources 3) Dr. Ken Rothman, Professor of Epidemiology and Medicine at Boston University, founding editor of the journal, Epidemiology, co-founder, Risk Management Resources 4) Dr. Lowell Sever, Professor of Epidemiology, University of Texas-Houston, School of Public Health 5) Dr. Laura Green, a board-certified toxicologist, Diplomate of the American Board of Toxicology, lecturer in the Division of Toxicology at the Massachusetts Institute of Technology and Senior Scientist and President of Cambridge Environmental. CPAI requests that the statements be clarified.

[44.180] Volume 2: Chapter 4, Page 4-494: BLM states that potential PM10 control measures include limiting vehicle speeds, and treating problematic road sections with surfactants or water. The referenced measures are already undertaken both by permit stipulation and voluntarily by North Slope operators, which CPAI believes should be acknowledged in the SEIS text.

[44.181] Volume 2: Chapter 4, Page 4-500: BLM states: In flat, thaw-lake plains on the North Slope, gravel construction can be anticipated to result in upslope water impoundment and thermokarst erosion equivalent to the area directly covered by gravel (Walker et al. 1987). Walker et al., 1987 is a dated reference. Gravel construction techniques have greatly improved and placement of culverts to prevent impoundments is now standard practice. CPAI believes this should be acknowledged in the text.

[44.182] Volume 2: Chapter 4, Page 4-541: Proposed Mitigation Measure 1a states: Removal of sand and/or gravel from cliffs shall be prohibited. CPAI believes that it is not obvious how this would impact the dinosaur dig at Ocean Point. CPAI requests that this point be clarified.

[44.183] Volume 2: Chapter 4, Page 4-542: To fully consider impacts, CPAI believes that BLM should complete an analysis of impacts from subsistence hunting and trapping.

[44.184] Volume 2: Chapter 4, Page 4-550: To fully consider impacts, CPAI believes that BLM should complete an analysis of impacts from subsistence hunting of seals and whales.

Additionally, BLM should expand the analysis of polar bears, beyond an estimate of bears killed, to include behavioral modification or stress as is discussed frequently for other activities in MMPA related documents.

[44.185] Volume 2: Chapter 4, Page 4-550: To fully consider impacts, CPAI believes that BLM should complete analyses of impacts to marine mammals from recreational and subsistence related boat traffic originating from North Slope communities and of impacts to marine mammals from barge traffic associated with community re-supply activities.

[44.186] Volume 2: Chapter 4, Page 4-553: To fully consider impacts, CPAI recommends an analysis of impacts from subsistence hunting.

[44.187] Volume 2: Chapter 4, Page 4-600: BLM refers to drilling rigs being painted red. CPAI is unaware of red rigs on the slope. The drilling rig color depends on the drilling company. CPAI requests that the reference be corrected.

[44.188] Volume 2: Chapter 4, Page 4-601: A Christmas tree is not the same thing as a marker pipe. CPAI requests that the reference be corrected.

[44.189] Volume 2: Chapter 4, Page 4-601: BLM refers to drilling rigs being painted red. CPAI is unaware of red rigs on the slope. The drilling rig color depends on the drilling company. CPAI requests that the reference be corrected.

[44.190] Volume 2: Chapter 4, Page 4-609: CPAI believes that local sources of air pollution and their health effects here and in section 4.6.1.1 and 4.6.19.1 have not been satisfactorily evaluated. CPAI believes that local sources of air pollution are more likely to affect residents' health than oil and gas related emissions. Specific discussion topics, at a minimum, should include;

- * The NSB's and/or city governments' policies or procedures for road watering or dust control activities, in villages, to minimize residents' exposure to dust (PM10).

- * Discussion of open burning refuse at Nuiqsut's landfill and other villages should the practice occur there.

- * The NSB's and/or city governments' power plant emission controls, source testing data, and/or emissions calculations should be presented and discussed.

- * The NSB's and/or city governments' ambient air monitoring data should be presented and discussed.

- * The NSB's and/or city governments' programs to encourage residents to plug in vehicles versus idling or starting cold to be presented and discussed.

Volume 2: Chapter 4, Page 4-609: In the last paragraph of this page, the document states: According to EPA analysis and several independent studies, substantial health effects accrue at even levels below NAAQS standards, down to ambient levels (Ostro et al 2006; USEPA 2006b). Additionally, the text continues on to say: given the baseline health disparities.....North Slope communities would face substantial health risk from increased particulate emissions, even if air quality continued to meet NAAQS.

[44.191] It is of concern that substantial risk from air concentrations meeting federal standards is anticipated. It appears that the data do not fully support the assertion. For example, the

Ostro et al. paper cited in this section refers only to particulate matter and not to the other criteria pollutants (NO_x, SO₂, ozone, lead and CO), and the USEPA 2006b reference also refers only to particulates. No references are provided to support that exposure to NO_x, SO₂, ozone, lead and CO at air concentrations meeting federal standards will result in substantial risk. See also comments Volume 2: Chapter 4, Page 4-71 and Volume 2: Chapter 4, Page 4-610 among others for additional details. CPAI requests that the statements be clarified and corrected as necessary.

[44.192] Volume 2: Chapter 4, Page 4-610: At the top of this page, the document states that the NSB is concerned that models used to predict air quality on the North Slope have not been validated, particularly in view of arctic climate conditions. CPAI disagrees. All models used by North Slope oil and gas operators have been approved by the EPA and/or ADEC. Air quality permits cannot be issued based on unapproved models. Each approved model goes through rigorous testing and analysis by EPA and ADEC. Lessees are required by law to use the approved modeling tools. CPAI requests that the statements be clarified and corrected as necessary.

[44.193]

Volume 2: Chapter 4, Page 4-610: BLM states: Due to the distance of potential development from most population centers, substantial reductions in village air quality is unlikely. The statement contradicts those on page 4-609 in terms of health impacts. From the discussion on pages 4-609 and 4-610, it is unclear as to whether there are additional conditions or requirements imposed on lessees even if air concentrations of EPA Criteria Pollutants are in compliance with NAAQS. CPAI requests that the statements be clarified.

[44.194] Volume 2: Chapter 4, Page 4-610: CPAI believes that other sources of contamination and their health effects here and in section 4.6.19.1 have not been satisfactorily evaluated. CPAI believes that local sources of contamination are more likely to affect residents' health than oil and gas development. Specific discussion topics, at a minimum, should include;

- * ADEC's contaminated sites database information should be reviewed, presented and discussed. Many villages have contaminated sites that are potential exposure sources.

- * ADEC's village spill reports/statistics should be reviewed, presented and discussed. Local spills are a potential exposure source.

Volume 2: Chapter 4, Page 4-610: BLM states: Public health data support the link between contaminants produced by oil development, and the risk of cancer, endocrine disruption, and cognitive disorders (Jacobsen et al 1996; Arctic Monitoring and Assessment Program 2003; Cone 2005)."

[44.195] CPAI was concerned that the statement cited above is a blanket statement that does not specify the particular contaminants, besides noting that they are not EPA Criteria Pollutants. An attempt to verify the cited sources for this statement resulted in the following findings; 1) Jacobsen et al, 1996 is not listed in the bibliography of the NE NPR-A SEIS, and therefore CPAI could not verify this source. 2) A Medline search was conducted for Jacobsen & 1996; however, the located article titles did not correlate with the topic of interest. 3) The Arctic Monitoring and Assessment Program 2003 was reviewed, and although this document addresses health endpoints such as cancer, endocrine disruption and cognitive disorders, it does not at any point attribute these effects to oil development. A search of the eleven chapter text for the word "oil" resulted in hits on rice oil and seal oil, and one hit in Chapter 10 which stated:

Total emissions and long-range transport of Hg continue and even increase from North America and southeast Asia through 2010 with continued reliance on fossil fuels (especially oil and coal) for energy. A search for the term "petroleum" found a reference in chapter 1 that indicated: Acidification and petroleum hydrocarbons were regarded during the first phase of AMAP (1991-1996) as having no immediate impact on human health and were consequently not addressed in the health assessment that was prepared under AMAP Phase I. Searches on the words benzene, BTEX and industry resulted in no relevant hits. 4) The Cone, 2005 reference is to a book entitled *Silent Snow: The Slow Poisoning of the Arctic*. The book refers heavily to the "Arctic Paradox", a process whereby persistent, organic compounds are not remaining in urban areas where they have been released and are in fact being transported in high concentrations to the Arctic. It does not appear that this book is relating any of the health effects specifically to oil development. Additionally, this book is written with a journalistic bias and should not be used as a technical source of information in this report. Overall, CPAI believes the referenced documents are not relevant to health effects from oil development on the North Slope. CPAI requests that the statements be clarified and corrected as necessary.

[44.196] Volume 2: Chapter 4, Page 4-610: BLM states: Data from other communities in which the "total petroleum hydrocarbons" concentrated in water (from air and waterborne sources) has documented a correlation between proximity to oil and gas exploration and production and health outcomes, including cancer and miscarriages (San Sebastian, Armstrong 2001, 2002; Hurtig, San Sebastian 2002). The cited reports pertain to studies conducted in the Amazon basin of Ecuador. There have been a number of evaluations conducted that criticize the findings of these studies and strongly question their ability to draw causal relationships. One such review conducted by Dr. David J. Hewitt who is Director of Occupational Health Services for the Center for Toxicology and Environmental Health, L.L.C. in Little Rock, Arkansas. His conclusion is below and can be located at:

Based on my training and experience in epidemiology, toxicology, and occupational and environmental medicine, it is my opinion that a causal relationship between living near areas of oil exploration in Ecuador and health conditions such as adverse pregnancy outcomes and cancer cannot be supported based on an inability to satisfy basic criteria for establishing causation. These deficiencies include:

- * Health effects which are not consistent with known health effects of the reported chemicals;
- * Incomplete exposure assessment;
- * No objective verification of exposure or magnitude (dose-response) of exposure in study participants;
- * Significant methodological problems in health studies which precludes any type of causal conclusion;
- * Other potential causes for reported health effects were not reliably excluded. In the case of cancer, recognized risk factors such as infections or nutritional factors were not addressed.

Other evaluations, all with similar criticisms, can be located at the following website: . The reviewers include; 1) Dr. Alvaro Felipe Dávalos Pérez, Ecuadorian expert in tropical medicine 2) Dr. Felix Arellano, physician with specialty in clinical pharmacology, member of the Board of Directors of the International Society for Pharmacoepidemiology, Visiting Fellow at St. Vincent's Clinical School, New South Wales, co-founder, Risk Management Resources 3) Dr. Ken Rothman, Professor of Epidemiology and Medicine at Boston University, founding editor of

the journal, Epidemiology, co-founder, Risk Management Resources 4) Dr. Lowell Sever, Professor of Epidemiology, University of Texas-Houston, School of Public Health 5) Dr. Laura Green, a board-certified toxicologist, Diplomate of the American Board of Toxicology, lecturer in the Division of Toxicology at the Massachusetts Institute of Technology and Senior Scientist and President of Cambridge Environmental. CPAI requests that the statements referenced be clarified.

[44.197] Volume 3: Chapter 4, Page 4-619: Delete ...and in late 2006 Nuiqsut began receiving gas from the nearby Alpine oil field. Although CPAI has completed their portion of the project, Nuiqsut and the NSB have not. Gas has not yet been delivered as a result.

[44.198] Volume 3: Chapter 4, Page 4-643: Move Oooguruk to the Present Development and Production section.

[44.199] Volume 3: Chapter 4, Page 4-646: Add Oooguruk to Present Development and Production on the North Slope and in the Planning Area (2007-2010).

[44.200] Volume 3: Chapter 4, Page 4-647: CPAI recommends changing the projected CD-5 online date to 2012 or later due to permitting delays.

[44.201] Volume 3: Chapter 4, Page 4-647: Delete 1,200-foot in front of bridge. The length of the Nigliq Channel bridge has changed.

[44.202] Volume 3: Chapter 4, Page 4-647: Replace supported by cable trays placed on the pipeline VSMs; cable trays would not hang with messenger cables hanging, so the sentence reads, Power lines would be messenger cables hanging below the pipelines.

[44.203] Volume 3: Chapter 4, Page 4-684: BLM states that dispersion conditions are neutral to unstable in the lower atmosphere. CPAI believes the conditions are better stated as neutral conditions dominate, with unstable and stable conditions rarely occurring (CPAI, 2004).

[44.204] Volume 3: Chapter 4, Page 4-684: CPAI believes that the second sentence in Section 4.7.7.1 should be amended by adding naturally occurring wind-blown dust from exposed soils along river banks and tundra fires to the list of emission sources.

[44.205] Volume 3: Chapter 4, Page 4-684: CPAI disagrees with the statement that HAP emissions cannot be estimated for future development. One could easily estimate future HAP emissions by basing estimates on actual HAP emissions from current oil production facilities on the North Slope.

[44.206] Volume 3: Chapter 4, Page 4-685: BLM states that drilling engines/turbines are principle emission sources during the development phase. It is unlikely that turbines would be used in the construction phase, unless highline power already existed at the new pad. For pads in remote areas, where highline power is not yet available, drilling is powered by diesel engines. CPAI requests that the statements be clarified to state the low probability of turbines being emission sources during the development phase.

[44.207] Volume 3: Chapter 4, Page 4-685: BLM states that VOC emissions could occur from oil/water separators. On the North Slope, enclosed modules are used because of extreme weather. Consequently, it is standard practice to route vapors released during oil/water separation back into the process. It is a closed loop system. CPAI requests that the statements be clarified to state the low probability of an emission occurring from a closed loop system.

[44.208] Volume 3: Chapter 4, Page 4-685: On page 4-685 BLM states that air emissions are expected to increase. This conflicts with page 4-684, where BLM states that air emissions are expected to decrease. It may be that BLM intended to say that air emissions may increase in local areas of new development and may decrease in areas of existing development, similar to the Conclusion section on page 4-686 where a descriptive prediction of future air quality is given. CPAI requests that the statement be clarified.

[44.209] Volume 3: Chapter 4, Page 4-686: In 4.7.7.1.4 and 4.7.7.1.5, BLM states that site-specific NEPA analyses would be required to demonstrate that air quality impacts would comply with various air quality regulations. Air permitting is subject to CAA requirements and lies outside the NEPA process. Any effort to require site specific compliance demonstrations during NEPA analysis duplicates existing regulatory processes (i.e. the CAA) and creates unnecessary permitting complexity for lessees. CPAI requests that the statement be clarified and corrected as necessary.

[44.210] Volume 3: Chapter 4, Page 4-706: BLM makes a reference to ADF&G permits for new gravel mines. It should be ADNRP OHMP, not ADF&G. CPAI recommends the reference be corrected.

[44.211] Volume 3: Chapter 4, Page 4-888: BLM states that the estimated blowout frequency at Northstar is 9.4×10^7 . CPAI believes the frequency is 9.4×10^{-7} and requests that the number be corrected

[44.212] Volume 3: Chapter 4, Page 4-693: The section Future Effects and Their Accumulation, Oil and Gas Exploration and Development Activities, should include a cumulative impacts analysis of summer tundra travel on soils.

[44.213]

Volume 3: Chapter 4, Page 4-703: The section Future Effects and Their Accumulation, Oil and Gas Exploration and Development Activities should include a cumulative impacts analysis of summer tundra travel on water.

[44.214] Volume 3: Chapter 4, Page 4-713: The section Future Effects and Their Accumulation, Oil and Gas Exploration and Development Activities should include a cumulative impacts analysis of summer tundra travel on vegetation.

[44.215] Volume 3: Chapter 4, Page 4-718: The section Summary of Future Effects and Their Accumulation should include a cumulative impacts summary of summer tundra travel on soils, water, and vegetation.

[44.216] Volume 3: Appendix F, Page F-4: CPAI is unclear on the definition of permanent oil and gas facilities. On page F-4, the definition of permanent oil and gas facilities includes material sites. Therefore, material sites would be prohibited in the river buffers under Lease Stipulation K-1; however, the Lease Stipulation K-1 requirement/standard states Permanent oil and gas facilities, including gravel pads, roads, airstrip, and pipelines are prohibited in the streambed and adjacent to the rivers listed below at the distances identified. Stipulation K-1 does not list material sites as permanent oil and gas facilities so it is not clear whether they would be prohibited in the river buffers. CPAI is concerned with this issue because the only identified gravel source in Northeastern NPR-A to date is the Clover Potential Gravel Source, which could extend within 1/2 mile of the Ublutuooh River. Additionally CPAI believes excluding gravel mines from river buffers would be unreasonable because gravel mines can

provide important over wintering habitat for fish when connected to a river. CPAI requests that the statements be clarified.

[44.217] Volume 3: Appendix G, Page G-4: The recommended isolation strategy is not applicable to the North Slope. North Slope residents are not isolated. They routinely travel throughout Alaska and across the globe. CPAI requests that the recommendation be clarified.

[44.218] Volume 4: Map 3-2: CPAI recommends showing CD5, CD6, and CD7 as proposed.

[44.219] Volume 4: Map 3-6: CPAI recommends adding active stream gauge Monument 1, south of Nuiqsut. The gauging station has recorded multiple years of data as part of CPAI's Spring Breakup Program.

[44.220] Volume 4: Map 3-7: Citations for the source of information includes MMS and DOI. CPAI has collected significant data on >100 lakes within the Northeastern NPR-A that could be made available upon request.

[44.221] Volume 4: Map 3-9: Sources of information include data from USFWS Migratory Bird Management in Anchorage, AK. CPAI has collected significant data on Pacific Loons in leases of interest in the Northeastern NPR-A. These data could be made available upon request.

[44.222] Volume 4: Map 3-10: The source of data is from USFWS Migratory Bird Management. CPAI has collected significant data on YBLO in the Northeastern NPR-A (since 2001) and Colville River delta (since 1992). These data should be incorporated into the analysis, including information on aircraft disturbance on tundra nesting birds adjacent to Alpine. (Johnson et al., 2003)

[44.223] Volume 4: Map 3-11: CPAI has collected substantial data on red throated loons as a by-product of other systematic avian surveys that are not included in this analysis. CPAI recommends that the data be added to the analysis.

[44.224] Volume 4: Map 3-12: CPAI has collected substantial data on Tundra swans in Northeastern NPR-A, the Colville River delta and Greater Kuparuk Area. These credible data are not presented. CPAI's annual reports have been provided to various BLM personnel, most recently in electronic format. CPAI recommends that the data be added to the analysis.

[44.225] Volume 4: Map 3-13: CPAI has collected substantial data on white front geese and brant in Northeastern NPR-A as well as the Colville River delta. Those data are available for inclusion to the analysis upon request. CPAI recommends that the data be added to the analysis.

[44.226] Volume 4: Maps 3-14 to 3-16 and 3-18: Same comment as Volume 4: Map 3-13.

Volume 4: Map 3-32: CPAI appreciates BLM's use of CPAI's spectacled eider data for the map and subsequent analysis.

[44.227] Volume 4: Map 3-20: Some GPS collar location data exist for TLH animals in a study sponsored by CPAI in collaboration with ADF&G, NSB Dept of Wildlife, and ABR. Data exist for 2006 that should be captured. CPAI recommends that the data be added to the analysis.

[44.228] Volume 4: Maps 3-20, 23, 24, and 26: CPAI recommends updating with 2006 satellite telemetry data.

[44.229] Volume 4, Miscellaneous References: Several maps should be renumbered to reflect their order of reference in the text. Change map numbers 3-29 to 3-33, 3-30 to 3-29, 3-31 to 3-30, 3-32 to 3-31, 3-33 to 3-32, 3-36 to 3-40, 3-37 to 3-41, 3-40 to 3-37, 3-41 to 3-42, 3-42 to 3-36, 3-44 to 3-48, 3-45 to 3-44, 3-46 to 3-45, 3-47 to 3-46, and 3-48 to 3-47.

[44.230] Volume 4: Map 3-48: CPAI recommends showing the Class I area upstream of Umiat as discussed in text Section 3.4.7.6 of the 1998 ROD.

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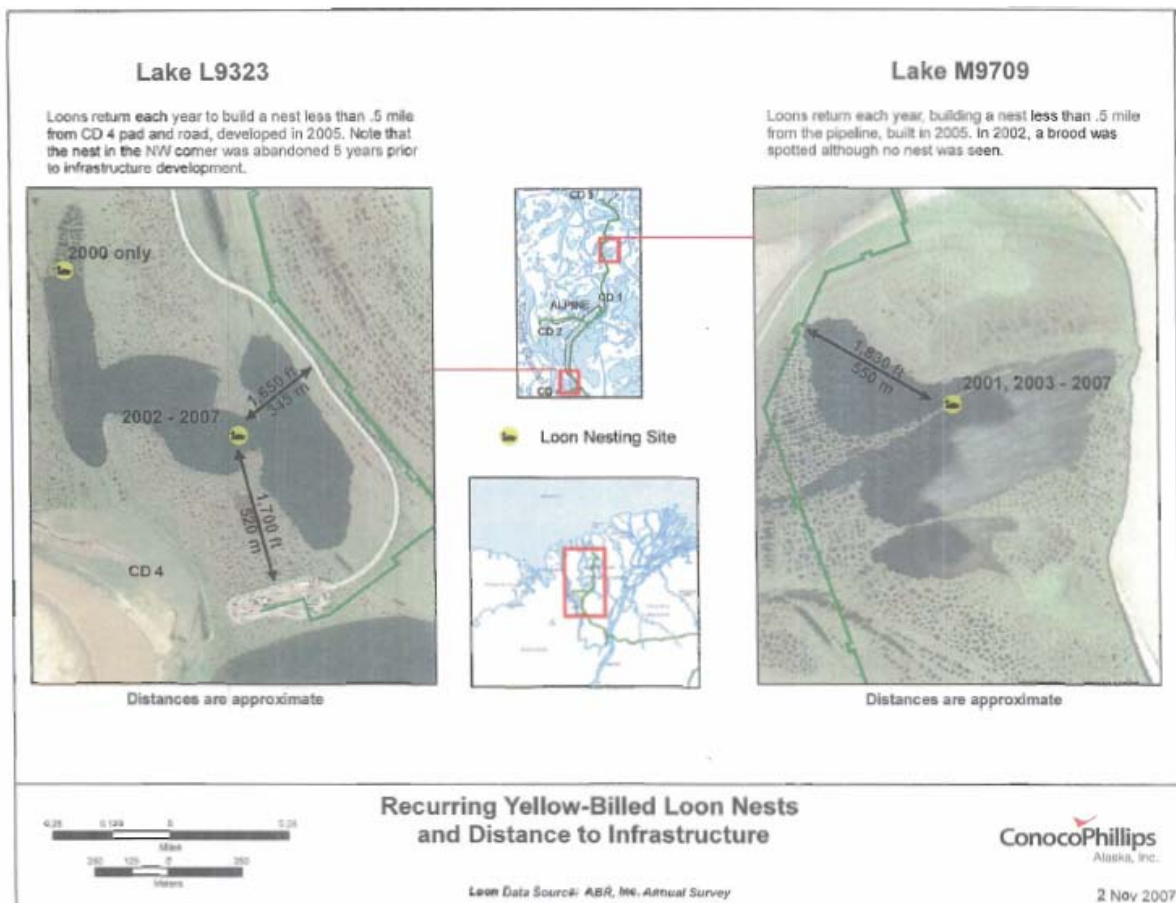
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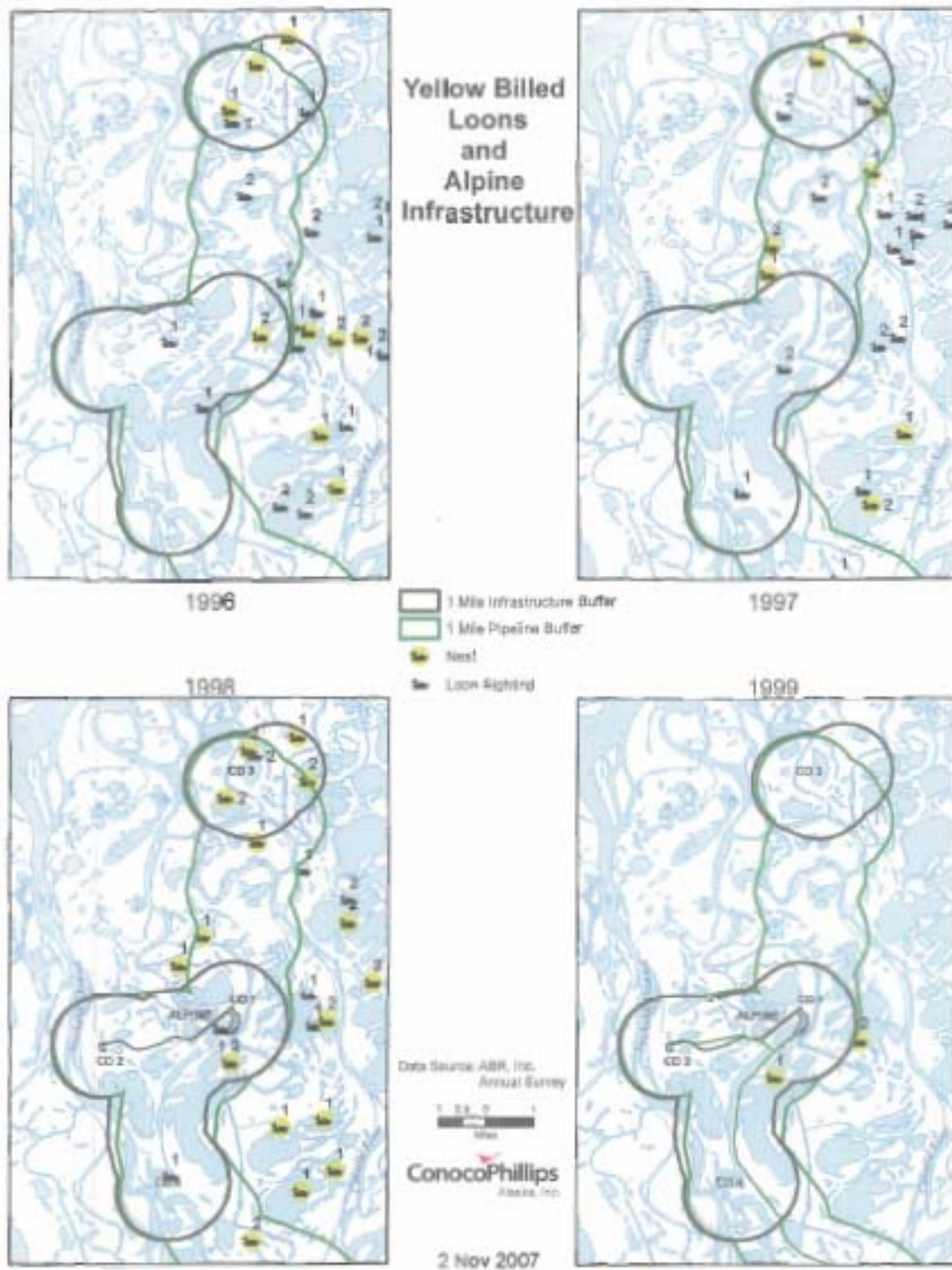
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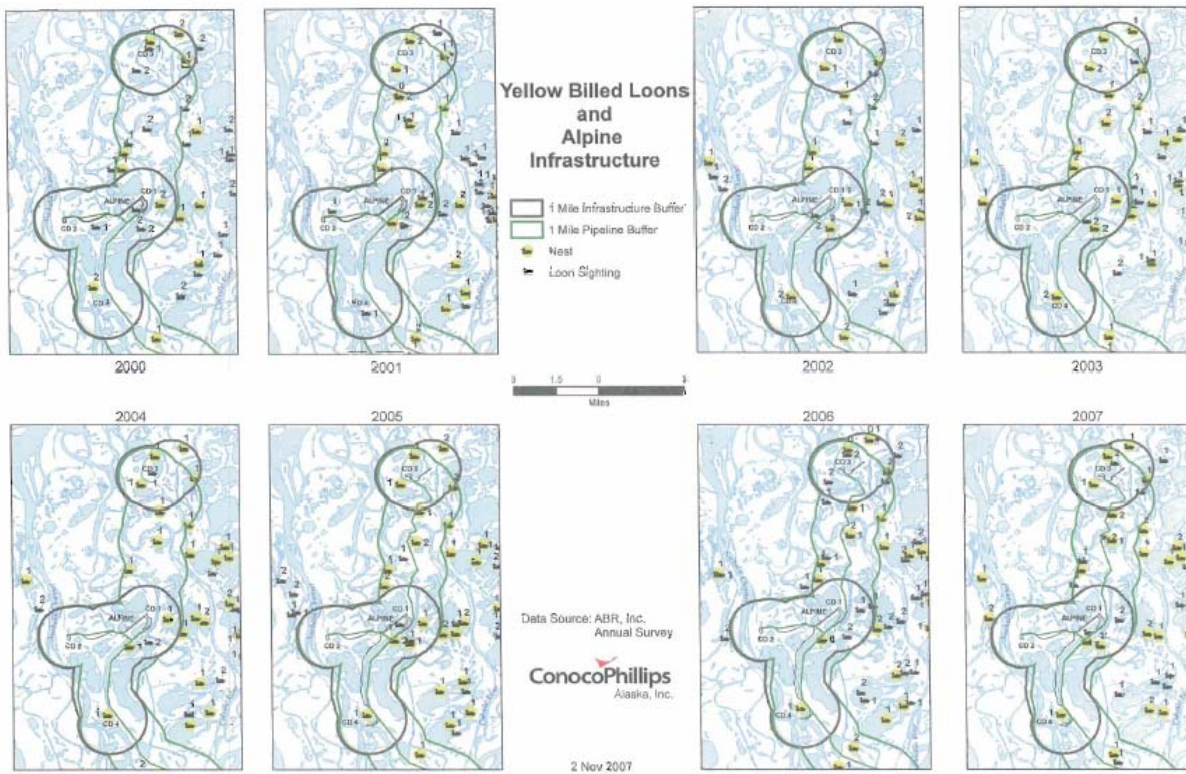
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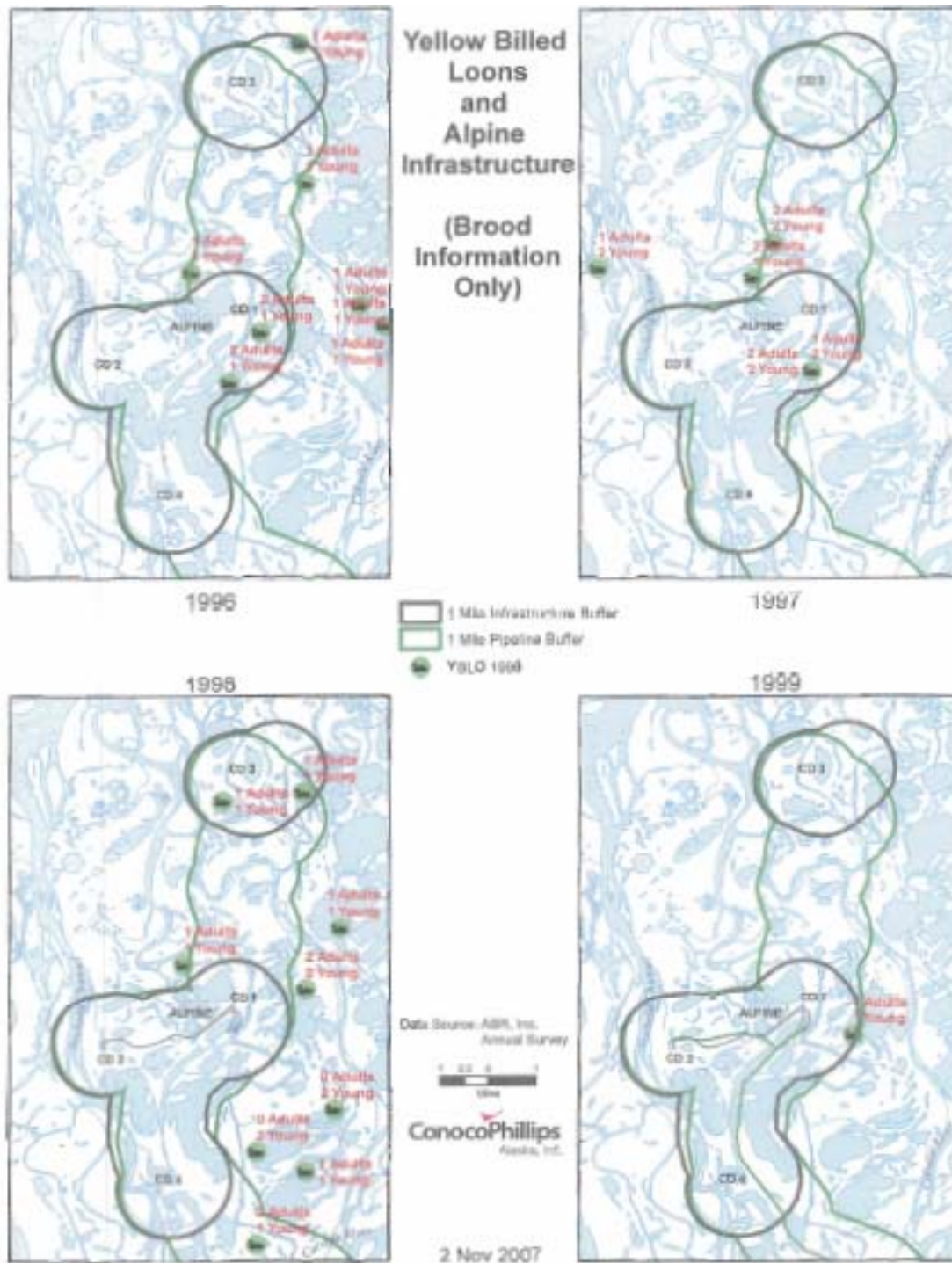
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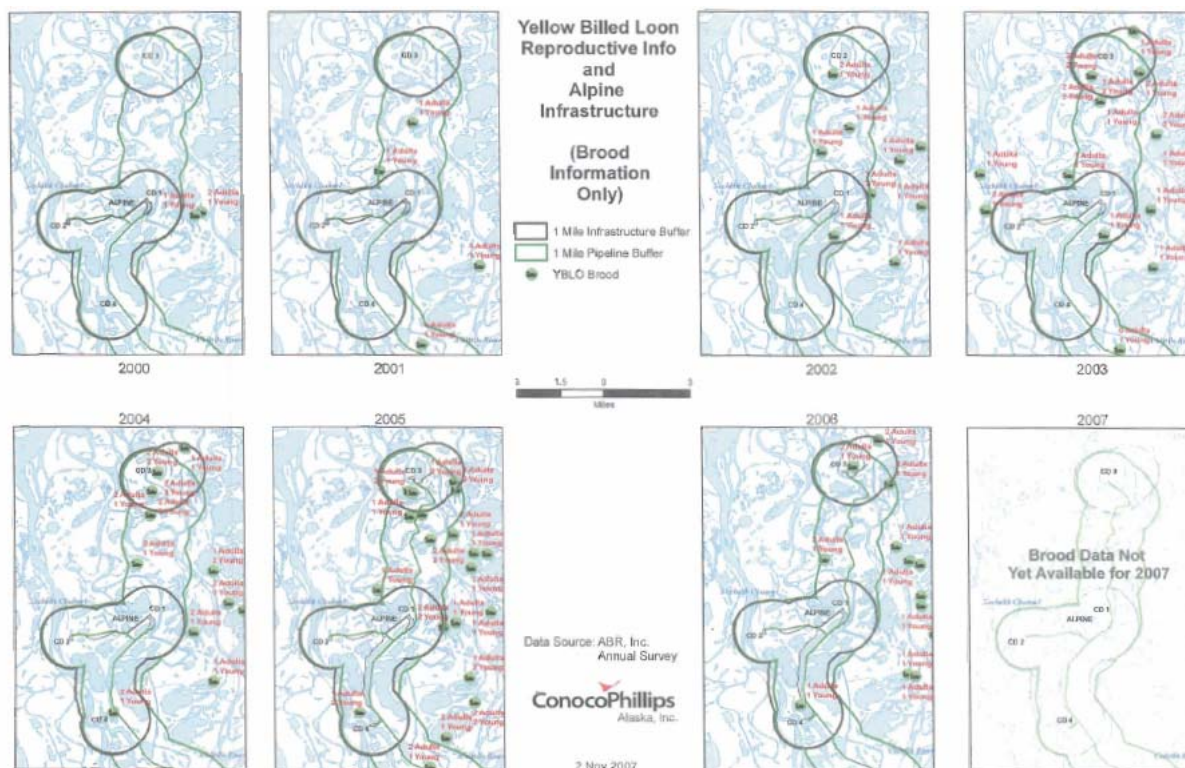
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- Yellow Billed Loon Attachment













1996



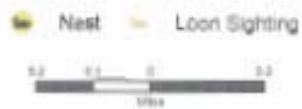
No Withdrawal This Year

**Yellow Billed Loon Sightings for June
and Water Withdrawal on Lake L9323**
Loon Data Source: ABR, Inc. Annual Survey

1997



No Withdrawal This Year



1998



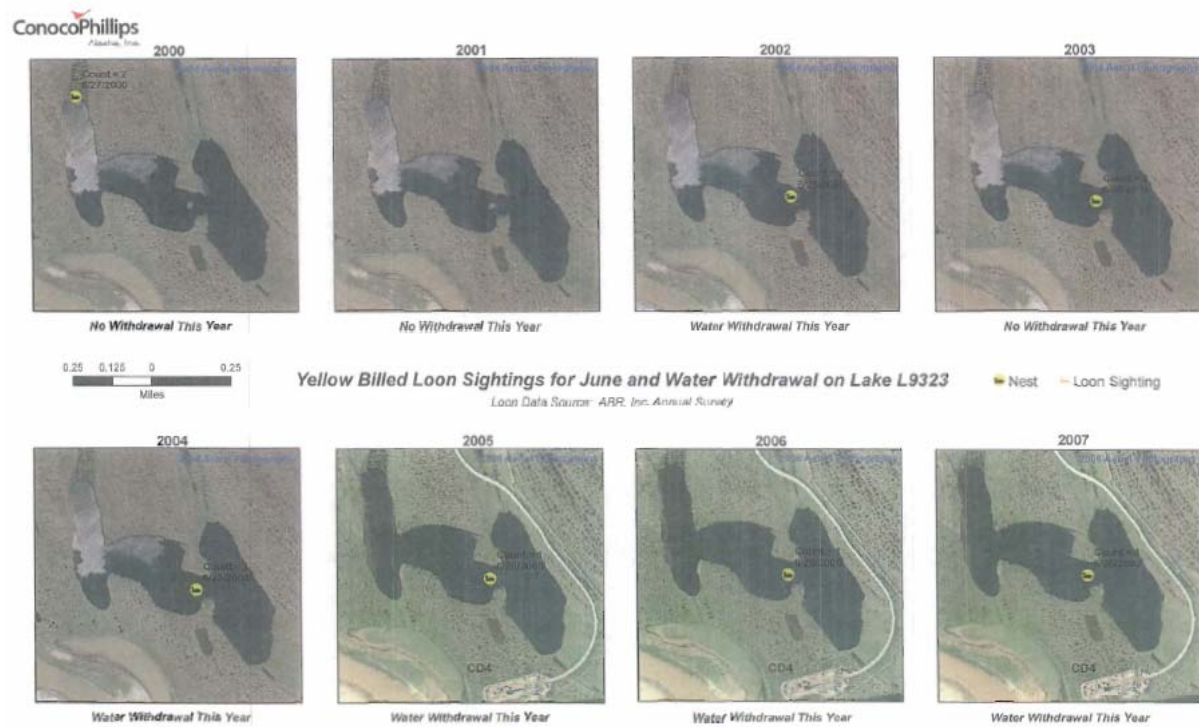
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1999



No Withdrawal This Year

2 Nov 2007



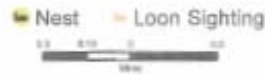


No Withdrawal This Year

Yellow Billed Loon Sightings for June
and Water Withdrawal on Lake M9709
Loon Data Source: ABR, Inc. Annual Survey



No Withdrawal This Year

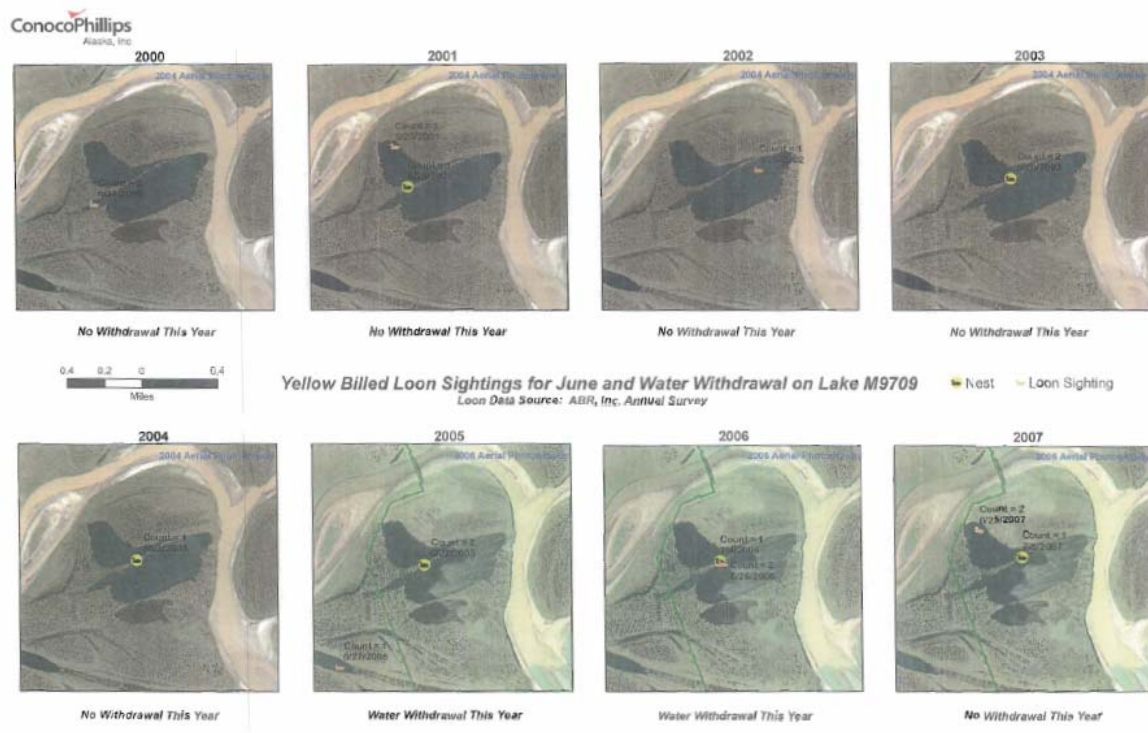


No Withdrawal This Year



Water Withdrawal This Year

2 Nov 2007



Air Quality Attachment

Oil drilling threatens Native ways

Compass: Points of view from the community

ROSEMARY AHTUANGARUAK

Commentary

As the mayor and former community health aide for the village of **Nuiqsut**, I have serious concerns about the ongoing effects of oil development in Alaska's Arctic. **Nuiqsut** is west of the Arctic National Wildlife Refuge and the Prudhoe Bay oil fields and is near the Beaufort Sea coast in the Colville River delta. We are within eight miles of the Alpine oil development project, often referred to as an example of how new fields have a smaller footprint. The Alpine oil field already includes roads and pipelines, and we face new development with a gravel road from it to three new oil fields and new leases now being offered in the National Petroleum Reserve and across the Beaufort Sea. The NPR-A is our backyard, and the Inupiat people of this region have been hunting and fishing and living off the land here for thousands of years. Our way of life is increasingly threatened by the cumulative effects of oil and gas development. Seismic vibrators looking for oil and frequent helicopter flights have disturbed the caribou herds where I live. Big herds of caribou do not come through our town anymore, and most of our hunters have found it hard to even get caribou. Our elders tell me that the caribou are having problems, as more are seen with illnesses. Fish have been decreasing in numbers, and multiple species are being affected. Fish caught in the net have been deformed, yellow, with increased parasites, tumors in the muscle or reproductive glands, and some are skinny with a bitter taste to the meat. Many people at the ongoing, never-ending meetings scheduled in the village have voiced these concerns, but development activities continue to be approved.

Air pollution is visible over the North Slope in winter as a yellowish haze. Nitrogen oxide emissions from the oil fields are more than twice the total emitted in Washington, D.C. During winter there are many natural gas flares that occur, which caused me to have many busy nights on call responding to community members' complaints about respiratory illnesses. I remember when I began as a health aide there was only one asthmatic patient, and when I quit in 1999 there were 60 people who had to use respiratory medications. There are also increased numbers of thyroid disorders. For this village of more than 400 people, a 600 percent increase in respiratory patients should get some type of response. Our voices are not being heard.

Air pollution isn't the only problem. We have water quality changes, land use conflicts, oil spills, noise pollution, increased traffic and disturbance to fish and wildlife species. And the social fabric of the community is under stress. Truancy, vandalism, domestic violence, alcohol and drug abuse and suicide are all increasing. One of our biggest concerns is a road and what new development that will bring. And how does all of this affect global warming? Remember that all of these sprawling pipelines will eventually go under water and the plates of ice will rise. Then what will happen to the oil facilities? When the pristine white wonderland that we live in becomes a black wasteland, it will be too late.

Many people in our village have grown up with their parents attending meetings about development, and they are still occurring. The land, sea and air provide for us through the long, dark winters and we need them to survive, as the jobs around us often go to outsiders. We need to work together to approve increasing energy alternatives in environmentally safe ways and leave this land that is rich and lush to the caribou, moose, wolves, bears, wolverines and many birds and other animals.

Rosemary Ahtuanguaruak is mayor of **Nuiqsut**, former community health aide, basketball coach and a mother of five. The Bureau of Land Management is accepting comments on the proposed oil and gas lease sales in the NPR-A until Wednesday. For more information please visit the BLM's Web site at <http://www.ak.blm.gov/nwnpra>...

**NORTH SLOPE BOROUGH
PLANNING DEPARTMENT**

P.O. Box 69
Barrow, Alaska 99723
Phone: 907-852-2611
907-852-0320
Fax: 907-852-0322



March 28, 1997

Frank Brown, Vice President
ARCO Alaska, Inc.
P.O. Box 100360
Anchorage, AK 99510-0360

RE: Alpine Development Project

Dear Mr. Brown:

As I would for any good neighbor, I want to be open with you about concerns expressed to me concerning ARCO's work on the North Slope. As you are no doubt aware, some controversy still remains regarding the specific details of ARCO's proposed Alpine Development Project. I want you to know that the North Slope Borough supports environmentally sound onshore oil and gas development, and looks forward to the safe development of Alpine in the very near future. We join the residents of Nuiqsut, however, in their disappointment at the seeming inability of all parties to finally resolve some remaining issues which must be satisfactorily addressed before the project can move forward.

A December 7, 1996 Barrow meeting between ARCO and officials of the North Slope Borough, the City of Nuiqsut, Arctic Slope Regional Corporation, Kaktovik Village Corporation, the tribal government for Nuiqsut and the Army Corps of Engineers was held specifically to identify and discuss unresolved issues concerning the Alpine Project. These issues were defined jointly by Nuiqsut and Borough representatives at the meeting, and presented to ARCO representatives in the form of a single page attached to this letter. I can confidently say that we all left this meeting with the expectation that these issues would be fully addressed by ARCO.

In the interests of putting at least some of these questions to rest in a way which might build much needed trust between all interested parties, I offer the suggestion that appropriate technical reviews by a disinterested third party, like the North Slope Borough Science Advisory Committee (SAC), be conducted. The benefit of such a review by an organization like the SAC is that the people of Nuiqsut are familiar with the structure and operation of the SAC based on its work on bowhead whale issues, and should have the confidence in conclusions reached by such a panel. I believe the issues of minimum necessary pipeline height and extent of any regional air pollution caused by industrial oil field operations lend themselves to a focused review by such a panel. If we can all agree on specific questions to pose to this third party reviewer, we should be able to live with and implement any recommendations proposed.

Alpine Development Project

page 2

I bring these issues to your attention because it is important that you understand that they must be resolved not only for the direct benefit of the residents of Nulqiat, but also because my staff must make a recommendation to the Planning Commission on ARCO's application to rezone the Alpine area from Conservation to Resource Development.

I look forward to your response on this matter and if you have any questions regarding these issues, please call either Karen Burnell, Planning Director at (907) 852-0320 or Jon Dunham, Permitting & Zoning Manager at (907) 852-0440.

Sincerely,



Benjamin P. Nageak
Mayor
North Slope Borough

cc: Mark Schindler, ARCO
Jacob Adams, ASRC
Bill Thomas, ASRC
George Hialek, Mayor, City of Nulqiat
Jon Nulqiat, President, Kaktavik Corporation
Thomas Nulqiat, Tribal Council of Nulqiat
Marie Adams-Carroll, Chief Administrative Officer
Leonard Lingo, NSB Village Coordinator, Nulqiat
Charles D.N. Brown, Wildlife Management Director
Thaddeus Oja, Deputy Wildlife Management Director
Dr. Tom Albert, Senior Scientist, Wildlife Management
Tom Lehman, Environmental Restoration Specialist, Wildlife Management
Lloyd Frazier, USAACE
Molly Birkenhead, Office of the Governor/DGC
Karen Burnell, Planning Director
Earl Phibbs, Deputy Planning Director
Jon Dunham, Permitting & Zoning Manager, Planning

- 1) **Oil Spill** - Please describe how ARCO will handle a civil/oil spill emergency at Alpine with respect to notification, response and potential evacuation of the Nuiqsut population as well as ARCO employees?
- 2) **Pipeline Height** - There is widespread concern that the proposed 5 foot height of the pipeline is not enough to allow adequate caribou crossing. Information in the EAD does not satisfy our concerns. We ask ARCO to provide a brief written report (including detailed referencing) that provides convincing evidence that the five foot height is adequate. If ARCO cannot elevate or bury the pipeline, how about extra caribou crossings, locations should be identified by the village residents.
- 3) **Pipeline Route** - There is concern over the proposed pipeline route. We need to be assured that the route chosen is the most environmentally sound and has adequately taken into account the input of the community. We have heard concerns of the local residents regarding the exposure of the proposed route to seasonal flooding and its potential greater impact on caribou migration patterns than alternate routes.
- 4) **Colville River Crossing** - There is a concern about the method of how the river crossing plans are proposed. We need a written explanation on insulation of the pipe, distances where the pipe goes under and comes back up, and the natural erosion by ice jams that could possibly expose or have some impact on the line.
- 5) **Air Pollution** - There is a significant concern regarding air pollution impacts to the health of Nuiqsut people. There is an increasing incidence of respiratory problems in Nuiqsut residents and the "dark or yellow cloud" often seen over Prudhoe is now sometimes seen extending to Nuiqsut. In view of this, we are very worried that the added air pollution from the Alpine development (processing plant, various emissions, etc. will cause even more problems). Therefore we ask for a more thorough evaluation of estimated air pollution impacts and want an air quality monitoring device placed in the village. We suggest an air quality monitor be placed within the city limits of Nuiqsut to gather pre-Alpine development air quality data. If there is no air pollution threat from the project, that air monitoring device will provide a documented proof each year.

[Response to 44.001]

The Potential Mitigation Measure has been revised and no longer contemplates creation of a Health Advisory Board.

[Response to 44.002]

Public health impacts are cognizable under NEPA. BLM agrees that there are many factors that contribute to health disparities in the North Slope populations, but data are not adequate to draw a conclusion that oil and gas activities have no health impacts. The public health analysis describes potential linkages between oil and gas activities that could occur under the proposed action and public health. This potential mitigation measure establishes a framework

that ensures that adequate analysis of potential health impacts will occur for development in the planning area.

[Response to 44.003]

The potential links between oil and gas development and public health are discussed at many points in the DEIS. See, for example, sections 4.3.19, 4.4.19, 4.5.19, 4.6.19, and 4.7.7.19.1.

[Response to 44.004]

The BLM disagrees. The BLM is unaware of other measures that duplicate all elements of the subsistence potential mitigation measure described within the public health subsection.

[Response to 44.005]

BLM has revised the text of the potential mitigation measure 3, "Public Health Monitoring," to clarify the requirement. The measure proposes a limited monitoring program, and is intended to augment rather than replace or duplicate existing surveillance. Examples of some indicators that might be pertinent for such a monitoring program are found in (GNWT 2003) and (ERG 2007). These citations are not included to suggest a specific monitoring program, but rather to provide examples of the types of indicators that might prove relevant to a specific project proposal and are not commonly tracked by existing surveillance programs. The final study design would be dependent upon the specific proposed activities, location in relation to human populations and subsistence activities, and other factors that would be evaluated in relation to a specific development proposal, as stated in the measure.

[Response to 44.006]

The BLM has revised the text of the potential mitigation measure 3, "Public Health Monitoring," to clarify the requirement. The measure proposes a limited monitoring program, and is intended to augment rather than replace or duplicate existing surveillance. Examples of some indicators that might be pertinent for such a monitoring program are found in (GNWT 2003) and (ERG 2007). These citations are not included to suggest a specific monitoring program, but rather to provide examples of the types of indicators that might prove relevant to a specific project proposal and are not commonly tracked by existing surveillance programs. The final study design would be dependent upon the specific proposed activities, location in relation to human populations and subsistence activities, and other factors that would be evaluated in relation to a specific development proposal, as stated in the measure.

[Response to 44.007]

BLM agrees that there are many factors that contribute to health disparities in the North Slope populations, but data are not adequate to draw a conclusion that oil and gas activities have no health impacts. The potential links between oil and gas development and public health are discussed at many points in the Draft EIS. See, for example, sections 4.3.19, 4.4.19, 4.5.19, 4.6.19, and 4.7.7.19.1.

[Response to 44.008]

The text of the measure has been modified in response to this comment.

[Response to 44.009]

The text of the measure has been modified in response to this comment. The specific substances to be monitored will be selected during the study design process outlined in the measure.

[Response to 44.010]

The final study design would be dependent upon the specific proposed activities, location in relation to human populations and subsistence activities, and other factors that would be evaluated in relation to a specific development proposal, as stated in the measure. BLM has modified the text of this potential mitigation measure to clarify the requirements and reduce uncertainty.

[Response to 44.011]

The BLM recognizes that ambient air quality monitoring may be required by different agencies under different regulations (including, but not limited to monitoring required by the Alaska Department of Environmental Conservation, Division of Air Quality, under the federal Clean Air Act, and subject to EPA oversight.) Monitoring required by BLM would be implemented based on the FLPMA. However, BLM simply would not require "duplicative" air quality monitoring if information collected under the Clean Air Act also met BLM's needs under FLPMA.

[Response to 44.012]

The BLM is aware of concerns regarding the potential for power generating systems to impact air quality measurements. It will take this factor into consideration when considering this potential mitigation measure. The agency, however, is also aware that some air quality monitoring technology does not require either highline power or diesel generators. It is premature to either require or eliminate any particular monitoring method at this time. The appropriate monitoring methodology would be determined once a specific need is identified.

[Response to 44.013]

Where applicable, BLM uses existing local, state, regional, tribal and/or Federal ambient air quality standards as predetermined air quality "thresholds of significance." However, where applicable standards do not exist (such as for atmospheric deposition), BLM applies current scientific knowledge to identify the appropriate significance thresholds.

[Response to 44.014]

The text of the measure has been modified to address your comment.

[Response to 44.015]

The rationale for this proposed requirement is discussed in "Potential Benefits and Residual/Unavoidable Impacts." The potential causal linkages between the proposed action and infectious disease are discussed in sections 4.3.19, 4.4.19, 4.5.19, and 4.6.19.

[Response to 44.016]

Because the specific environmental consequences of a large spill are, by nature, unpredictable and highly dependent on the size, location, and conditions of the spill, the BLM believes the measure, as written, is as clear as possible. Specific requirements would be determined by the AO in consultation with the review panel. The potential mitigation measure would only apply in the case of an oil spill with "a potential for substantial impacts to subsistence resources" so that it would not apply to the many spills of small size that could not conceivably cause notable impacts to subsistence resources. For larger spills the AO will have to use his or her judgment, in consultation with appropriate experts, to determine whether there is a potential for impacts that could substantially affect subsistence resources.

[Response to 44.017]

The BLM disagrees. The OPA does not specify a specific mechanism through which adequate expertise will be enlisted to monitor and prevent adverse impacts to public health from a large oil spill with a potential for substantial impacts to subsistence resources.

[Response to 44.018]

The text of ROP A-3 has been modified to indicate that "appropriate" staff shall be required to receive these instructions. It is not the BLM's intention to require individuals with no relation to operations in the planning area to obtain these instructions.

[Response to 44.019]

The text of ROP A-4 has been edited to clarify the BLM's intention regarding storage of fuel, other petroleum products, and other liquid chemicals designated by the AO. The performance based protection measures affords the BLM the opportunity to adjust specific requirements informed by the latest understanding of the potential of impacts. The BLM will consider any changes that may have occurred in the requirements of other Federal, state, and local authorities in its project-specific requirements.

[Response to 44.020]

The performance-based protection measures afford the BLM the opportunity to adjust specific requirements informed by the latest understanding of the potential of impacts. The BLM will consider any changes that may have occurred in the requirements of other Federal, state, and local authorities in its project-specific requirements.

[Response to 44.021]

The BLM has considered the requirement to mark containers with the year filled or purchased, but has determined to maintain that requirement in these alternatives.

[Response to 44.022]

The BLM has considered changing the text of the requirement/standard ROP A-4(f), but determined it unnecessary. An acting AO is the AO, so to add "or his or her designee" would be redundant.

[Response to 44.023]

The BLM has considered the suggestion to delete the requirement/standard language for ROP A-4(g) regarding "duck ponds," but considered it appropriate to maintain.

[Response to 44.024]

The BLM does not manage the waters of the Colville River in lands near the Northeast NPR-A planning area, so State practice regarding the Colville River is not pertinent and no contradiction exists.

[Response to 44.025]

The BLM has edited ROP B-2 as suggested to delete "lake size."

[Response to 44.026]

The BLM considered revisions to the requirement/standard at ROP B-2(b), but determined to leave it as is. The performance-based protection measures afford the BLM the opportunity to adjust specific requirements informed by the latest understanding of the potential of impacts. The BLM will consider any changes that may have occurred in the requirements of other federal, state, and local authorities in its project-specific requirements.

[Response to 44.027]

The BLM considered revisions to the requirement/standard at ROP B-2(d), but determined to leave it as is. The performance-based protection measures afford the BLM the opportunity to adjust specific requirements informed by the latest understanding of the potential of impacts. The BLM will consider any changes that may have occurred in the requirements of other Federal, state, and local authorities in its project-specific requirements.

[Response to 44.028]

The BLM considered changing the text of the requirement/standard of ROP E-7(b), but determined that it provides suitable flexibility. Depending upon the specific proposed development, burial of pipeline may be considered and required, but only after consideration of other options to meeting the objective to minimize disruption of caribou movement and subsistence use.

[Response to 44.029]

The BLM considers it prudent to maintain the current 500-foot distance cited in the requirement/standard at ROP E-7(c). Studies, including one by LGL Alaska Research Associates, Inc. (Cronin, M.A., W.B. Ballard, J. Truett, and R. Pollard. 1994), have shown that additional protection is provided with more than the 350-foot minimum distance between pipelines and roads.

[Response to 44.030]

The BLM considered the suggestion to substitute sighting reports for annual reports, but determined that administratively the annual report was preferable.

[Response to 44.031]

The BLM considered this suggestion to modify the requirement/standard text at ROP E-11(a), but determined to retain reference to "accepted BLM-protocol." This performance-based protection measure affords the BLM the opportunity to adopt the protocol of other agencies if they are suitable to meet the objectives of the ROP.

[Response to 44.032]

The BLM considered revisions to the yellow-billed loon requirements/standards of ROP E-11, but determined to leave them as is to better assure protection of the bird. The performance-based protection measures affords the BLM the opportunity to adjust specific requirements informed by the latest understanding of the potential of impacts, including those such as the relevant comment by CPAI provides, as well as the specific proposal presented to the agency.

[Response to 44.033]

The BLM has added text to ROP F-1 and Stipulation K-5(e)(6) to clarify its intention to not have the identified flight altitude restrictions preclude scientific wildlife monitoring.

[Response to 44.034]

The BLM has modified the provision. However, the clarification is not to indicate that activities associated with winter exploration are not subject to the provision, but to reword the relevant sentence to read, "The BLM will not approve any activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the Endangered Species Act as amended, 16 USC § 1531 et seq., including completion of any required procedure for conference or consultation."

[Response to 44.035]

The BLM has considered the question whether setbacks should be from the centerlines or banks of rivers. The BLM has determined that it is better for the resources and uses of riparian areas if the setback is measured from the bank.

[Response to 44.036]

The BLM considered the comment that evacuation of a road would be difficult once a large group of caribou have moved in, but determined to retain the language of the requirement/standard at K-5(e)(2) as is to provide better protection of caribou movement. It is anticipated that evacuation would be accomplished consistent with the requirement for temporary stoppages of vehicles alluded to in the comment.

[Response to 44.037]

The text of Stipulation K-5(e)(4) has been clarified to better reflect the BLM's intention.

[Response to 44.038]

The text of Stipulation K-5(e)(5) has been clarified to better reflect the BLM's intention.

[Response to 44.039]

The BLM has added text to ROP F-1 and Stipulation K-5(e)(6) to clarify its intention to not have the identified flight altitude restrictions preclude scientific wildlife monitoring.

[Response to 44.040]

The BLM considered whether to retain reference to consultation with the AEWC as part of the requirement/standard at Stipulation K-6, and determined to retain the requirement because of the Bureau's concern for consultation with local organizations regarding subsistence-related concerns.

[Response to 44.041]

The text in the Executive Summary regarding gravel placement has been changed in accordance with the comment's recommendation.

[Response to 44.042]

The discussion of Federal, state, and NSB permits and approvals in Chapter 1 has been edited to make it clearer that only a partial list is provided in this section and that a more complete list is provided in Appendix B. In addition, the list of required state permits in this section has been expanded.

[Response to 44.043]

The text of ROP A-2 has been changed to incorporate minimization of impacts from hazardous wastes in the objective statement.

[Response to 44.044]

The text describing the effectiveness of ROP B-1 has been changed from "lakes and ponds" to "rivers and streams" to correct the error.

[Response to 44.045]

The discussion on the relative effectiveness of Stipulation 37 and ROP E-7 in preventing bird collisions with pipelines has been deleted.

[Response to 44.046]

The text for ROP E-11 has been corrected to reflect the BLM's intent for these alternatives.

[Response to 44.047]

ROP E-11 for Alternatives B, C, and D has been edited to correct errors in presentation of three circumstances relevant to the placement of overhead powerlines.

[Response to 44.048]

The text of E-11 under Alternative D has been clarified to reflect that overhead powerlines would be allowed under the third circumstance over a broader geographic area than under the first two circumstances listed.

[Response to 44.049]

The BLM developed Alternative D after comments were received on the Draft Amended IAP/EIS. The language in Alternative D's ROP E-11 reflects revisions made in light of those comments to strengthen protections of the yellow-billed loon.

[Response to 44.050]

The text regarding the effectiveness of ROP E-11 has been corrected.

[Response to 44.051]

The text in Table 2-2 has been modified to change "Subsistence operations" to "Seismic operations."

[Response to 44.052]

The list of waterbodies has been revised so that they are in letter order for Alternatives B, C, and D, rather than for Alternative A.

[Response to 44.053]

The text regarding the effectiveness of Stipulation 39 from Alternative A and Stipulation K-1 for the action alternatives has been corrected as the comment suggests.

[Response to 44.054]

The erroneous instance of "rivers" has been corrected to "lakes."

[Response to 44.055]

The BLM has considered the comment, but decided to maintain the current protective language. The buffer areas referred to in Stipulation K-4 relate to lakes, not rivers, and the lakes have been identified as of special importance for molting geese.

[Response to 44.056]

The BLM has considered the comment regarding the appropriateness of requiring 4 years of caribou studies (Alternative D Stipulation K-5(a)) and has determined to retain the current language in Alternative D. An additional year of data provides greater assurance regarding the potential impacts and mitigation measures to reduce the potential impacts.

[Response to 44.057]

The discussion of the effectiveness of Stipulation K-7 has been revised to reflect the point of this comment.

[Response to 44.058]

The BLM considered this comment, but has determined to leave the text of Stipulation K-8 unchanged. More specificity will be possible when a proposal for a specific development has been received.

[Response to 44.059]

NEPA requires Federal agencies to analyze and disclose potential environmental impacts before a specific activity is allowed to proceed. In addition, all BLM activities (either directly or through use authorizations) must comply with all applicable local, state, tribal and Federal air quality laws, regulations, standards, and implementation plans. Therefore, any future activity would be required to obtain necessary air pollutant emission permits from the ADEC.

[Response to 44.060]

The BLM has changed "will" to "could" in the cited instance and other instances in Table 2-2 to reflect the potential, but not necessarily the certainty, of the indicated impacts.

[Response to 44.061]

The text has been revised to indicate wetlands, rather than soils.

[Response to 44.062]

It is correct that at the time the Draft Supplemental IAP/EIS was issued that polar bears had been proposed, but not yet listed, as a threatened species. The Supplemental IAP/EIS addresses the status of the listing in its Chapter 3 discussion of polar bears. It is appropriate to highlight for the public and decision-makers any adverse impacts to proposed species that might increase the likelihood of listing the species. Consequently, the BLM has chosen to discuss them along with listed species in the IAP/EIS.

[Response to 44.063]

Section 106 of the NHPA would address protection from oil and gas exploration and development, including sub-sea wells, pipelines and ports. These developments were considered in the analysis.

[Response to 44.064]

The characterization of impacts to several terrestrial mammals of importance to subsistence in Table 2-3 under the heading of "Effects on Subsistence Harvest Patterns" has been modified.

[Response to 44.065]

The text found in this table is simply a summary of discussion located elsewhere in the document. Please see the discussion under Traditional Iñupiat Settlement Patterns in Chapter 3 for a discussion on changing settlement patterns, and Past and Present Effects and Their Accumulation in Chapter 4 under Cumulative Impacts: Subsistence for a discussion of past events and their contribution to cumulative impacts to subsistence.

[Response to 44.066]

The text for this section has been changed in the final to eliminate the word "dramatically."

[Response to 44.067]

The text in the final has been changed by replacing the word "livelihoods" with "uses." The text located in this table is a summary of the discussion found in Chapter 4. While subsistence use is a factor for consideration under environmental justice, the full discussion of impacts to subsistence use, including the historical perspective, is located within the subsistence section

(see Chapter 4 Past and Present Effects and Their Accumulation under Cumulative Impacts: Subsistence).

[Response to 44.068]

The text for this section has been changed in the final to eliminate the word "dramatically."

[Response to 44.069]

Table 2-3 Recreational Resources summary and the discussion in Chapter 4 have been edited to clarify these impacts.

[Response to 44.070]

Restriction or banning of alcohol sales in Alaska Native communities has been shown to reduce adverse health outcomes related to social pathology. CPAI is correct that these problems occur in other communities, but anything that may compromise the efficacy of local prohibition laws or increase burdens on local law enforcement has the potential to increase the availability in these communities. The construction of roads provides a more readily accessible route for potential trafficking. CPAI acknowledges this later in its comments (see comment 72.102), and points out that it has worked with community leaders to implement random searches of vehicles traveling the ice road to help prevent such problems.

[Response to 44.071]

The Draft EIS actually states "Ambient air quality on the North Slope of Alaska is generally good as a result of few pollution sources and good dispersion created by frequent winds, and neutral to unstable conditions in the lower atmosphere ..." Specific atmospheric dispersion conditions have only been quantified for limited time periods and at few locations throughout the planning area.

[Response to 44.072]

Table 3.2-B both includes several necessary footnotes, and references three original documents: Phillips Alaska (2002) and SECOR International Inc. (2003 and 2006). Reviewers interested in more detail than provided in Table 3.2-B should consult those original references.

[Response to 44.073]

BLM believes the data as presented (including data supplied by SECOR International Inc. in 2006) adequately describes the Air Quality Affected Environment.

[Response to 44.074]

Final EIS (Section 3.2..2) has been modified to state "An Ambient Air Quality Monitoring Station has operated at Nuiqsut since 1999, originally as a State of Alaska permit condition for the Alpine field."

[Response to 44.075]

As described in the Draft EIS "The effects of dust on vegetation include early snowmelt, reduced soil nutrient concentrations, lower moisture, an altered soil organic horizon, and higher bulk density and depth of thaw (Everett 1980; Walker and Everett 1987; Auerbach et al. 1997)." The Draft EIS also states "Various activities associated with oil development and production emit air pollutants, including NO_x, NO₂, NO, O₃, and SO₂. Numerous studies have addressed the impacts of these pollutants on both vascular and non-vascular plants, but there are few studies of air pollutant impacts on tundra vegetation. Kohut et al. (1994) measured air pollutant concentrations and their effects on vegetation adjacent to the Central Compressor Plant (CCP), where gas powered turbine pumps compress natural gas prior to injection, in the Prudhoe Bay

oil field.” and “Primary productivity in Arctic tundra, however, is often limited by nutrient supply, particularly nitrogen and phosphorus (Chapin 1978; McKendrick and Mitchell 1978; Chapin et al. 1980; Chapin and Shaver 1985). [Air Pollution] Fertilization leads to higher productivity and changes in the structure of Arctic plant communities (Chapin and Shaver 1985, McKendrick 1997) and may alter carbon balance at the ecosystem level (Billings et al. 1984).” Finally, readers unfamiliar with the phenomenon of “Arctic Haze” are encouraged to review the work of Dr. Glenn E. Shaw of the Geophysical Institute at the University of Alaska <http://www.gi.alaska.edu/~gshaw/Shaw.html>.

[Response to 44.076]

The text has been modified as suggested.

[Response to 44.077]

The recommended edit has been made to the second paragraph.

[Response to 44.078]

Revisions have been made to the document to reflect that there are large concentrations of Pacific loons east and southeast of Teshekpuk Lake and to the southwest of Nuiqsut between Judy Creek and the Tingmiaksiqvik River.

[Response to 44.079]

The text has been modified to correct the map reference for yellow-billed loons.

[Response to 44.080]

The second sentence in the red-throated loon subsection in the Birds section of Chapter 3 presents data from the Breeding Pair Survey under the citation Mallek et al. 2006.

[Response to 44.081]

The red-throated loon subsection under the Birds section of Chapter 3 states that “Red-throated loons are much less common than Pacific loons on the ACP.” Reference to red-throated loons being “common on the Colville River Delta adjacent to the planning area” has been removed as the Colville River Delta is not within the Planning Area covered by this IAP/EIS. The map number has been corrected to reference Map 3-11.

[Response to 44.082]

The text has been modified to read that, “The largest concentrations of long-tailed ducks in the planning area occur to the north and to the east of Teshekpuk Lake and in the south central and southwest portions of the planning area.”

[Response to 44.083]

The map references have been checked and are accurate in the SEIS.

[Response to 44.084]

While more recent data has been collected by Stephen Braund, he has not given the BLM access to his primary data, nor permission to use this information graphically in maps. Therefore, while it may exist, the data is not available to the BLM.

[Response to 44.085]

While there are sources of information indicating the occasional use of the snowy owl as a food source by the residents of Barrow (Pederson et al. 1979; Spencer 1959; SBRA 1988), there is a lack of information to support the statement that this resource was used extensively in the past.

The text has been revised to clarify this.

[Response to 44.086]

The text you cite states that Dall Sheep are used to "a lesser extent" along with muskox and seal. According to the Alaska Department of Fish and Game Division of Subsistence Community Profile Database (ADF&G 2001) for the study year 1993, 12.9% of households in Nuiqsut used Dall Sheep, which warranted the mention of this resource as one that is used to a lesser extent.

[Response to 44.087]

The directional reference in this sentence has been deleted in order to remove confusion by the reader with regard to lake trout.

[Response to 44.088]

Chapter 3 of the EIS is the Affected Environment section, consisting of a review of known information, and is not an impact analysis. The point that the BLM is making is that according to information collected regarding the location of caribou harvests in 1999-2000, 51% of the residents of Nuiqsut traveled greater than 16 miles away from development. This is down from 77% in 1994 and 79% in 1993. This reduction in % of harvesters who traveled greater than 16 miles for a caribou was attributed by the authors of the study (Pederson and Taalak 2001) to the fact that the relatively new Alpine facility was located near an area where many residents of Nuiqsut focus their harvest attempts. As is stated in the very next paragraph "development in this area is too recent and there is insufficient data available to conclude whether harvesters will increase their distance from development in response to this relatively new facility."

[Response to 44.089]

Sentence has been changed to read "The only Visual Resource Management classes established in the 1998 Northeast IAP/EIS ROD were along the Colville River in the Colville River Land Use Emphasis Area."

[Response to 44.090]

"Alpine field" has been changed to "Alpine satellites" in the indicate part of the Visual Resources discussion in Chapter 3.

[Response to 44.091]

Sentence was deleted. Paragraph was edited to indicate VRM Classes were assigned for the Alpine satellites.

[Response to 44.092]

The text has been modified to indicate ice road construction to Alpine as well as Kuparuk.

[Response to 44.093]

According to current sources, Kuupik Corporation hosts job fairs. Clarifying corrections have been added to the text of the document.

[Response to 44.094]

The text has been corrected as verified by current sources.

[Response to 44.095]

According to a Kuupik Corporation official, the number of employees varies widely over time. At the time of BLM's most recent contact with the official, the number employed was four.

[Response to 44.096]

According to Kuukpik Corporation's CEO, ice road monitors are no longer employed. Only two subsistence monitors are employed by a contractor.

[Response to 44.097]

The word "liaison" has been deleted from the text.

[Response to 44.098]

The employment numbers for Anaktuvuk Pass have been corrected. The employment numbers for Atkasuk are correct.

[Response to 44.099]

According to the Kuupik Corporation, the cost of goods and services has not been reduced as a result of the seasonal ice roads.

[Response to 44.100]

The text of the discussions on public health, social pathology, and the social determinants of health in Chapter 3, section 3.4.10, as well as 4.3.19, 4.4.19, 4.5.19, and 4.6.19 address the distinction between social change in general and changes that may be associated with oil and gas development where possible. We would also refer the commentors to the discussion of cumulative effects in section 4.7.7.19.1, "Past and Present Effects and their Accumulation."

[Response to 44.101]

The BLM thanks you for this information. The text has been modified in response to your comment.

[Response to 44.102]

The text has been modified to: If cuttings meet ADEC's reuse criteria, they may be used for such things as landfill cover, road and pad maintenance or other similar uses. This would reduce waste volumes and require less local materials to maintain facilities. Reused cuttings have been used in the Alpine field for the past eight years.

[Response to 44.103]

The paragraph was modified to reflect this suggestion:

A typical 10,000-foot well could use 630 tons of drilling mud and produce 820 tons of rock cuttings. If an exploratory well were to be abandoned, drilling mud and cuttings could be re-injected into an appropriate formation through the borehole. If the well were to be converted to production, it would be temporarily shut in, and the operator would dispose of drilling mud and cuttings at an approved grind and inject facility. In either case, the cuttings that meet ADEC's reuse criteria, may be used for such things as landfill cover, road and pad maintenance or other similar uses. This would reduce waste volumes and require the extraction of less local materials to maintain facilities.

[Response to 44.104]

The text regarding assumptions gravel requirements has been modified to reflect information regarding investigations into use of subgravel grades of mineral materials.

[Response to 44.105]

The last sentence in the first paragraph under section 4. Drilling Mud and Rock Cuttings, suggest up to 80% of the drilling mud may be reconditioned and reused.

A sentence was added in the second paragraph to underscore this concept:

If cuttings met ADEC criteria for reuse, they could be approved for application as landfill cover, road and pad maintenance or other similar uses.

[Response to 44.106]

The discussion regarding pipeline alignments in the basic assumptions portions of Chapter 4 do not indicate requirements of lessees imposed by this IAP/EIS. Rather, they reflect the BLM's understanding of what is likely to occur in development. The agency considers it likely that pipelines will be aligned so as not to cross lakes.

[Response to 44.107]

The text has been modified as requested to indicate that "spills could occur from pipelines, ..."

[Response to 44.108]

As stated in the Draft EIS "The NSB has further suggested that producers should use the cleanest possible fuel sources, such as natural gas (which is readily available on the North Slope), or low-sulfur diesel to protect the health of local inhabitants, subsistence resources, and the environment." BLM concurs that the use of ULSD would significantly reduce potential sulfur dioxide and particulate matter impacts.

[Response to 44.109]

"Construction phase" and "development phase" are used somewhat interchangeably throughout the IAP/EIS.

[Response to 44.110]

As stated in the Draft EIS (Section 4.7.7.1.2) "During the development phase, the primary emission sources are 1) internal combustion engines or turbines used to provide power for drilling ..." BLM recognizes that the use of internal combustion engines is more likely for drilling in new remote areas, but "a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed."

[Response to 44.111]

BLM recognizes that the use of a "closed loop" oil/water separators would lower the probability of VOC emissions, but "a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed."

[Response to 44.112]

Hydrogen sulfide (H₂S) is a very toxic air pollutant which is listed on EPA's Integrated Risk Information System (<http://www.epa.gov/IRIS/subst/0061.htm>). Both OSHA and NIOSH have established ceiling limits for workplace exposure. There is no National Ambient Air Quality Standard for H₂S. Several states have established such standards, although Alaska has not done so. In 1990, the US Congress amended the Clean Air Act to formally list H₂S as a "HAP," subject to further EPA study to develop significance thresholds and control measures. The US Congress subsequently amended the Clean Air Act to remove H₂S formal designation as a "HAP." Finally, the BLM established onshore Oil and Gas Order No. 6 to specifically identify "uniform national requirements and minimum standards of performance expected from

operators when conducting operations involving oil or gas that is known or could reasonably be expected to contain hydrogen sulfide (H₂S) or which results in the emission of sulfur dioxide (SO₂) as a result of flaring H₂S.” <http://www.mt.blm.gov/oilgas/operations/orders/ord6.pdf>

[Response to 44.113]

The Draft EIS described both the current air quality conditions and regulations in Chapter 3 – Affected Environment, and indicated, to the extent possible, potential future air quality impacts due to additional leasing in Chapter 4 – Environmental Consequences. This included a comparison to site-specific conditions, as well as predicted future impacts, to existing and proposed development on the North Slope. However, BLM can not simply assume all future development in the planning area would not be significant simply because “ambient monitoring data” have not shown problems before, or that “air impacts from future development are not expected to be greater than existing localized air impacts.” As clearly stated in the Draft EIS, “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 44.114]

In addition to low emission heaters and compressors, as well as “flare less” operations, low emission flares are available which reduce both CO and NO_x emissions.

[Response to 44.115]

The draft EIS clearly identified Native Views on Air Emissions, including “Leonard Lampe, former Nuiqsut mayor, [who] has reported air pollution problems and habitat concerns, asserting that Nuiqsut has been experiencing air pollutant effects for some time.” In addition, Mr. Lampe cited “(Lavrakas 1996).”

[Response to 44.116]

The demonstration that these potential PM₁₀ control measures have already been “undertaken” supports including them a “potential control measures.”

[Response to 44.117]

The reason to cite a date with the reference is to give perspective on when the information is gathered. A reader can see that 1987 is twenty years ago and can factor that in the weight given to observations of construction techniques at that date.

[Response to 44.118]

The statement is not an overstatement of potential impacts. It requires natural drainage patterns to be identified and maintained. This recognizes current construction techniques.

[Response to 44.119]

The text has been changed as suggested.

[Response to 44.120]

Text has been added to acknowledge more recent practices and the protective benefits of lease Stipulation 43.

[Response to 44.121]

The text in Chapter 4 has been revised to correct the inaccuracy. Ozone is not emitted directly, but is formed in the lower atmosphere through photo-chemical reaction with air pollutants that are emitted directly (NO_x, NO₂ and NO).

[Response to 44.122]

The BLM considers a 25-foot-wide ice road to be appropriate for this analysis. Some applications for ice road permits have requested even narrower ice roads. While the BLM acknowledges that in some instances a wider ice road may be applied for and, after site-specific analysis, may be approved, it maintains that analysis of a 25-foot-wide road is appropriate in this IAP/EIS.

[Response to 44.123]

The text has been added.

[Response to 44.124]

Discussions of impacts to different resources from off-road travel is organized differently by different authors. In the Fish impact discussions, it is addressed under a separate heading, while for most other resources, impact discussions are organized in terms of the activity or the type of impact. For example, the terrestrial mammals section discusses impacts to caribou from ground vehicle traffic. The reaction of caribou to vehicle traffic would be essentially the same whether the vehicle traffic occurred on or off of roads.

[Response to 44.125]

Potential Mitigation Measure 1a has been edited for clarification.

[Response to 44.126]

It is BLM's assumption in this analysis that hunting and trapping will not have adverse population level impacts on wildlife. Those activities are managed by the Federal Subsistence Board and the Alaska Board of Game with the intent of avoiding such impacts. This assumption is stated in the DEIS in the cumulative impacts section for terrestrial mammals.

[Response to 44.127]

The text has been changed to correct the error regarding the width of river buffers.

[Response to 44.128]

The effects of subsistence hunting of seals and whales are included in the Section 4.7.7 Cumulative Impacts, p.4-760.

The analysis of effects to polar bears has been expanded in the Final IAP/EIS to more explicitly address the potential for sub-lethal effects from exploration and development.

[Response to 44.129]

The discussion of non-oil and gas activities in section 4.7.7, Cumulative Impacts, has been expanded to include additional discussion of non-oil and gas boat and barge traffic.

[Response to 44.130]

The effects of subsistence hunting on the BCB population of bowhead whales is discussed in Section 4.7.7.10.a-1.

[Response to 44.131]

The list of agencies in this section is given as an example of those from which permits or concurrence is required, not those with responsibility for fish habitat management exclusively. The text has been revised to avoid confusion by deleting the list of example agencies.

[Response to 44.132]

Sentence edited to read "Because some may be painted red (personal observation 2003), most drill rigs would also produce a strong visual contrast ..."

[Response to 44.133]

Paragraph was edited to clarify above ground pipes associated with production wells.

[Response to 44.134]

Sentence edited to read "Because some may be painted red (personal observation 2003), most drill rigs would also produce a strong visual contrast ..."

[Response to 44.135]

BLM recognizes that numerous air quality related activities are already underway in northern Alaska, and to the extent these measures represent air quality requirements applicable to BLM activities (either directly or through use authorizations), BLM will comply. However, the purpose of the EIS is primarily to analyze potential impacts of activities likely under the proposed action. For this reason, the DEIS focused on the question of potential health effects from emissions related to oil and gas activity. The text has been modified to place this discussion in a broader context.

[Response to 44.136]

The text has been modified in response to this statement.

[Response to 44.137]

The text has been modified in response to this comment.

[Response to 44.138]

The health effects to which this passage refers relate only to particulate matter. The text has been modified in response to your comment.

[Response to 44.139]

The comment correctly states that the models used by North Slope operators have been approved by EPA and/or ADEC. The concern expressed by NSB, however, is that these models may be inadequately validated in arctic conditions. The Alaska DEC expressed a similar concern in their comments on this Draft EIS:

"While North Slope air quality data has not shown violations of the National Ambient Air Quality Standards (NAAQS) near the facilities, concerns exist about the ability of older air quality models to predict deposition given the North Slope's strong atmospheric stability, complex high latitude atmospheric chemistry, the secondary formation of pollutants trapped in mid to long distance transport, and deposition of air pollutants which can accumulate in the soil and vegetation."

and:

"In addition, the Department believes that improved regional scale modeling would be valuable for assessing the impact of long range transport of anthropogenic pollution on the NPR-A. With recent improvements in air models and the development of a meteorological data set for use on the North Slope (one year of Mesoscale Model "MM5" data was specifically produced for the Arctic Regions to generate enough meteorological data for an acceptable run of the new CALPUFF model) an agency can now use CALPUFF to estimate plume movement and

deposition over larger distances, such as across the North Slope."

[Response to 44.140]

The comment correctly states that there is active air quality monitoring on the North Slope. However, only limited data are available to characterize the baseline air quality within NPR-A. Alaska DEC has provided detailed comments regarding the current deficits in air quality information within the planning area (see comment letter 77). The BLM recognizes that ambient air quality monitoring may be required by different agencies under different regulations (including, but not limited to monitoring required by the Alaska Department of Environmental Conservation, Division of Air Quality, under the federal Clean Air Act, and subject to EPA oversight.) Monitoring required by BLM would be implemented based on the FLPMA. However, BLM simply would not require "duplicative" air quality monitoring if information collected under the Clean Air Act also met BLM's needs under FLPMA.

[Response to 44.141]

The text has been modified for the purposes of clarification in response to this comment.

[Response to 44.142]

The purpose of the EIS is to analyze potential impacts of activities likely under the proposed action. For this reason, the DEIS focused on the question of potential health effects from emissions related to oil and gas activity. The text has been modified to place this discussion in a broader context.

[Response to 44.143]

The citations to which the comment refers were published in respected, peer-reviewed scientific journals. The authors have responded to critiques of their work as a part of this peer-reviewed, scientific process. See, for example, Hurtig and San Sebastian 2003; Hurtig and San Sebastian 2005.) The BLM considers the analysis of San Sebastian and her co-authors relevant to the analysis of public health impacts in the planning area, but has added language to the text to acknowledge that this is an area of the science in which there is disagreement.

[Response to 44.144]

Text has been modified to clarify the NSB's statement.

[Response to 44.145]

The text has been modified in response to this comment.

[Response to 44.146]

The text has been modified.

[Response to 44.147]

The demonstration that these potential PM₁₀ control measures have already been "undertaken" supports including them as "potential control measures."

[Response to 44.148]

The reason to cite a date with the reference is to give readers a perspective on the data. A reader can see that 1987 is twenty years ago and that can be a factor in the weight given to observations of the construction as of that date.

[Response to 44.149]

Potential Mitigation Measure 1a has been edited for clarification.

[Response to 44.150]

The effects of subsistence hunting of seals and whales are included in the Section 4.7.7, Cumulative Impacts, p.4-760.

The analysis of effects to polar bears has been expanded in the Final IAP/EIS to more explicitly address the potential for sub-lethal effects from exploration and development.

[Response to 44.151]

The discussion of non-oil and gas activities in section 4.7.7, Cumulative Impacts, has been expanded to include additional discussion of non-oil and gas boat and barge traffic.

[Response to 44.152]

The effects of subsistence hunting on the BCB population of bowhead whales is discussed in Section 4.7.7.10.a-1.

[Response to 44.153]

Sentence edited to read "Because some may be painted red (personal observation 2003), most drill rigs would also produce a strong visual contrast ..."

[Response to 44.154]

Paragraph was edited to clarify above ground pipes associated with production wells.

[Response to 44.155]

Sentence edited to read "Because some may be painted red (personal observation 2003), most drill rigs would also produce a strong visual contrast ..."

[Response to 44.156]

The BLM recognizes that numerous air quality related activities are already underway in northern Alaska, and to the extent these measures represent air quality requirements applicable to BLM activities (either directly or through use authorizations), BLM will comply. However, the purpose of the EIS is primarily to analyze potential impacts of activities likely under the proposed action. For this reason, the DEIS focused on the question of potential health effects from emissions related to oil and gas activity. The text has been modified to place this discussion in a broader context.

[Response to 44.157]

The health effects to which this passage refers relate only to particulate matter. The text has been modified in response to this comment.

[Response to 44.158]

The comment correctly states that the models used by North Slope operators have been approved by EPA and/or ADEC. The concern expressed by NSB, however, is that these models may be inadequately validated in arctic conditions. The Alaska DEC expressed a similar concern in their comments on this Draft EIS:

"While North Slope air quality data has not shown violations of the National Ambient Air Quality Standards (NAAQS) near the facilities, concerns exist about the ability of older air quality models to predict deposition given the North Slope's strong atmospheric stability, complex high latitude atmospheric chemistry, the secondary formation of pollutants trapped in mid to long distance transport, and deposition of air pollutants which can accumulate in the soil and vegetation."

[Response to 44.159]

The text has been modified for the purposes of clarification in response to this comment. The passage referred to in this comment does not address regulatory requirements: these are covered under the Stips and ROPS, and under the potential new mitigation measures at the end of this section.

[Response to 44.160]

The purpose of the EIS is to analyze potential impacts of activities likely under the proposed action. For this reason, the DEIS focused on the question of potential health effects from emissions related to oil and gas activity. The text has been modified to place this discussion in a broader context.

[Response to 44.161]

The text has been corrected in response to this comment.

[Response to 44.162]

The citations to which the comment refers were published in respected, peer-reviewed scientific journals. The authors have responded to critiques of their work as a part of this peer-reviewed, scientific process. See, for example, Hurtig and San Sebastian 2003; Hurtig and San Sebastian 2005.) The BLM considers the analysis of San Sebastian and her co-authors relevant to the analysis of public health impacts in the planning area, but has added language to the text to acknowledge that this is an area of the science in which there is disagreement.

[Response to 44.163]

The demonstration that these potential PM₁₀ control measures have already been “undertaken” supports including them a “potential control measures.”

[Response to 44.164]

The reason to cite a date with the reference is to give perspective on when the information is gathered. A reader can see that 1987 is twenty years ago and can factor that in the weight given to observations of construction techniques at that date.

[Response to 44.165]

Potential Mitigation Measure 1a has been edited to prohibit the removal of greater than 100 cubic yards of sand and/or gravel from cliffs. The dinosaur dig at Ocean Point required the removal of less than 100 cubic yards of sand and/or gravel.

[Response to 44.166]

It is BLM's assumption in this analysis that hunting and trapping will not have adverse population level impacts on wildlife. Those activities are managed by the Federal Subsistence Board and the Alaska Board of Game with the intent of avoiding such impacts. This assumption is stated in the DEIS in the cumulative impacts section for terrestrial mammals.

[Response to 44.167]

The effects of subsistence hunting of seals and whales are included in section 4.7.7, Cumulative Impacts, p 4-760.

The analysis of effects to polar bears has been expanded in the Final IAP/EIS to more explicitly address the potential for sub-lethal effects from exploration and development.

[Response to 44.168]

The discussion of non-oil and gas activities in section 4.7.7, Cumulative Impacts, has been expanded to include additional discussion of non-oil and gas boat and barge traffic.

[Response to 44.169]

The effects of subsistence hunting on the BCBS stock of bowhead whales is discussed in section 4.7.7.10.a-1.

[Response to 44.170]

Sentence edited to read "Because some may be painted red (personal observation 2003), most drill rigs would also produce a strong visual contrast ..."

[Response to 44.171]

Paragraph was edited to clarify above ground pipes associated with production wells.

[Response to 44.172]

Sentence edited to read "Because some may be painted red (personal observation 2003), most drill rigs would also produce a strong visual contrast ..."

[Response to 44.173]

The BLM recognizes that numerous air quality related activities are already underway in northern Alaska, and to the extent these measures represent air quality requirements applicable to BLM activities (either directly or through use authorizations), BLM will comply. However, the purpose of the EIS is primarily to analyze potential impacts of activities likely under the proposed action. For this reason, the DEIS focused on the question of potential health effects from emissions related to oil and gas activity. The text has been modified to place this discussion in a broader context.

[Response to 44.174]

The health effects to which this passage refers relate only to particulate matter. The text has been modified in response to this comment.

[Response to 44.175]

The comment correctly states that the models used by North Slope operators have been approved by EPA and/or ADEC. The concern expressed by NSB, however, is that these models may be inadequately validated in arctic conditions. The Alaska DEC expressed a similar concern in their comments on this Draft EIS:

"While North Slope air quality data has not shown violations of the National Ambient Air Quality Standards (NAAQS) near the facilities, concerns exist about the ability of older air quality models to predict deposition given the North Slope's strong atmospheric stability, complex high latitude atmospheric chemistry, the secondary formation of pollutants trapped in mid to long distance transport, and deposition of air pollutants which can accumulate in the soil and vegetation."

[Response to 44.176]

The text has been modified for the purposes of clarification in response to this comment. The passage referred to in this comment does not address regulatory requirements: these are covered under the Stips and ROPS, and under the potential new mitigation measures at the end of this section.

[Response to 44.177]

The purpose of the EIS is to analyze potential impacts of activities likely under the proposed action. For this reason, the DEIS focused on the question of potential health effects from emissions related to oil and gas activity. The text has been modified to place this discussion in a broader context.

[Response to 44.178]

The text has been corrected in response to this comment.

[Response to 44.179]

The citations to which the comment refers were published in respected, peer-reviewed scientific journals. The authors have responded to critiques of their work as a part of this peer-reviewed, scientific process. See, for example, Hurtig and San Sebastian 2003; Hurtig and San Sebastian 2005.) The BLM considers the analysis of San Sebastian and her co-authors relevant to the analysis of public health impacts in the planning area, but has added language to the text to acknowledge that this is an area of the science in which there is disagreement.

[Response to 44.180]

The demonstration that these potential PM₁₀ control measures have already been “undertaken” supports including them a “potential control measures.”

[Response to 44.181]

The reason to cite a date with the reference is to give perspective on when the information is gathered. A reader can see that 1987 is twenty years ago and can factor that in the weight given to observations of construction techniques at that date.

[Response to 44.182]

Potential Mitigation Measure 1a has been edited to prohibit the removal of greater than 100 cubic yards of sand and/or gravel from cliffs. The dinosaur dig at Ocean Point required the removal of less than 100 cubic yards of sand and/or gravel.

[Response to 44.183]

It is BLM's assumption in this analysis that hunting and trapping will not have adverse population level impacts on wildlife. Those activities are managed by the Federal Subsistence Board and the Alaska Board of Game with the intent of avoiding such impacts. This assumption is stated in the DEIS in the cumulative impacts section for terrestrial mammals.

[Response to 44.184]

The effects of subsistence hunting of seals and whales are included in the section 4.7.7, Cumulative Impacts, p 4-760.

The analysis of effects to polar bears has been expanded in the Final IAP/EIS to more explicitly address the potential for sub-lethal effects from exploration and development.

[Response to 44.185]

The discussion of non-oil and gas activities in section 4.7.7 Cumulative Impacts has been expanded to include additional discussion of non-oil and gas boat and barge traffic.

[Response to 44.186]

The effects of subsistence hunting on the BCB population of bowhead whales is discussed in section 4.7.7.10.a-1.

[Response to 44.187]

Sentence edited to read "Because some may be painted red (personal observation 2003), most drill rigs would also produce a strong visual contrast ..."

[Response to 44.188]

Paragraph was edited to clarify above ground pipes associated with production wells.

[Response to 44.189]

Sentence edited to read "Because some may be painted red (personal observation 2003), most drill rigs would also produce a strong visual contrast ..."

[Response to 44.190]

The BLM recognizes that numerous air quality related activities are already underway in northern Alaska, and to the extent these measures represent air quality requirements applicable to BLM activities (either directly or through use authorizations), BLM will comply. However, the purpose of the EIS is primarily to analyze potential impacts of activities likely under the proposed action. For this reason, the DEIS focused on the question of potential health effects from emissions related to oil and gas activity. The text has been modified to place this discussion in a broader context.

[Response to 44.191]

The health effects to which this passage refers relate only to particulate matter. The text has been modified in response to this comment.

[Response to 44.192]

The comment correctly states that the models used by North Slope operators have been approved by EPA and/or ADEC. The concern expressed by NSB, however, is that these models may be inadequately validated in arctic conditions. The Alaska DEC expressed a similar concern in their comments on this Draft EIS:

"While North Slope air quality data has not shown violations of the National Ambient Air Quality Standards (NAAQS) near the facilities, concerns exist about the ability of older air quality models to predict deposition given the North Slope's strong atmospheric stability, complex high latitude atmospheric chemistry, the secondary formation of pollutants trapped in mid to long distance transport, and deposition of air pollutants which can accumulate in the soil and vegetation."

[Response to 44.193]

The text has been modified for the purposes of clarification in response to this comment. The passage referred to in this comment does not address regulatory requirements: these are covered under the Stips and ROPS, and under the potential new mitigation measures at the end of this section.

[Response to 44.194]

The purpose of the EIS is to analyze potential impacts of activities likely under the proposed action. For this reason, the DEIS focused on the question of potential health effects from emissions related to oil and gas activity. The text has been modified to place this discussion in a broader context.

[Response to 44.195]

The text has been corrected in response to this comment.

[Response to 44.196]

The citations to which the comment refers were published in respected, peer-reviewed scientific journals. The authors have responded to critiques of their work as a part of this peer-reviewed, scientific process. See, for example, Hurtig and San Sebastian 2003; Hurtig and San Sebastian 2005.) The BLM considers the analysis of San Sebastian and her co-authors relevant to the analysis of public health impacts in the planning area, but has added language to the text to acknowledge that this is an area of the science in which there is disagreement.

[Response to 44.197]

The discussion of the use of natural gas from Alpine in Nuiqsut has been revised.

[Response to 44.198]

Oooguruk oil and gas development has been moved from the Reasonably Foreseeable Future Development section to the Present Development and Production section.

[Response to 44.199]

Oooguruk oil and gas development has been moved from the Reasonably Foreseeable Future Development section to the Present Development and Production section.

[Response to 44.200]

The projected CD-5 online date has been changed to 2012 or later to reflect permitting delays.

[Response to 44.201]

The length of the bridge has been deleted from the text to reflect that the proposed length has yet to be determined.

[Response to 44.202]

The text has been changed to reflect that the powerlines would be messenger cables hanging below the pipelines.

[Response to 44.203]

The Draft EIS actually states “Ambient air quality on the North Slope of Alaska is generally good as a result of few pollution sources and good dispersion created by frequent winds, and neutral to unstable conditions in the lower atmosphere ...” Specific atmospheric dispersion conditions have only been quantified for limited time periods and at few locations throughout the planning area.

[Response to 44.204]

As stated in the Draft EIS (Section 3.2.2) “The air quality in the Colville River Delta is generally good as a result of few pollution sources and good dispersion created by frequent winds, and neutral to unstable conditions in the lower atmosphere. Wind blown dust tends to occur more in the summer months as sandbars dry along the riverbeds in the Colville River Delta, resulting in temporary increases in concentrations of particulate matter. Emission sources in the planning area consist mainly of diesel-fired generators in small villages, residential heating, snow machines, all-terrain vehicles, occasional small aircraft, limited local vehicle traffic, and occasional open burning.” This included “wind-blown dust from exposed soils along river banks and tundra fires.”

[Response to 44.205]

As stated in the Draft EIS (Section 4.7.7.1.2) “In addition to these criteria pollutants, certain hazardous air pollutants (HAP) may also be emitted. Benzene, toluene, ethyl benzene and xylenes are common HAP associated with volatilization of oil and gas resources, as is formaldehyde from compressor engines. Depending on conditions, hydrogen sulfide may also be found in oil, however an accurate determination of specific HAP quantities and potential impacts is not feasible at this stage, given that particular site-specific development activities and pollution controls are not yet able to be predicted.” The Draft EIS further stated “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 44.206]

As stated in the Draft EIS (Section 4.7.7.1.2) “During the development phase, the primary emission sources are 1) internal combustion engines or turbines used to provide power for drilling ...” BLM recognizes that the use of internal combustion engines is more likely for drilling in new remote areas, but “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 44.207]

BLM recognizes that the use of a “closed loop” oil/water separators would lower the probability of VOC emissions, but “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 44.208]

Final EIS (Section 4.7.7.1.2) has been modified to state “Emissions on the North Slope as a whole are expected to decrease as the result of an overall downward trend in oil production and advances in technologies which decrease emissions; therefore, air quality impacts from local existing industrial sources is likely to be reduced.” Clearly, air pollutant emissions are likely to increase in areas where development has not already occurred, but “a determination of specific air pollutant emissions and potential impacts can not be made until site-specific development activities are proposed.”

[Response to 44.209]

NEPA requires Federal agencies to analyze and disclose potential environmental impacts before a specific activity is allowed to proceed. In addition, all BLM activities (either directly or through use authorizations) must comply with all applicable local, state, tribal and Federal air quality laws, regulations, standards, and implementation plans. Therefore, any future activity would be required to obtain necessary air pollutant emission permits from the ADEC.

[Response to 44.210]

The text has been updated.

[Response to 44.211]

The text has been edited to correct this error.

[Response to 44.212]

The cumulative impacts analysis focuses on the major potential impacting activities to vegetation, soils, etc., such as large overland moves and seismic operations and the development of new oil and gas facilities (roads, airstrips, pads) measured in the tens of thousands of acres. The potential impacts to soils of the relatively infrequent access to the tundra for a small number of vehicles during the summer are subsumed in the discussion of indirect impacts to

soils discussed in the cumulative impact analysis for vegetation. As stated in the section discussing summer tundra travel for oil and gas exploration and development activities in Chapter 4, BLM anticipates that summer tundra access would be permitted for only a few, specific purposes, as is the practice on State lands. This would minimize the frequency of occurrence. Also, the restrictions placed on that access through Required Operating Procedures under Alternatives B, C, and D would greatly limit the timing, vehicle types, and routes. For these reasons, the BLM believes that summer tundra access contributed by the action alternatives of this IAP/EIS would have no greater, and perhaps lesser, impacts on soils than would permitted winter tundra access for which a much wider diversity of timing, vehicles, and routes is permitted.

[Response to 44.213]

The cumulative impacts analysis focuses on the major potential impacting activities to vegetation, soils, water, etc., such as large overland moves and seismic operations and the development of new oil and gas facilities (roads, airstrips, pads) measured in the tens of thousands of acres. As stated in the section discussing summer tundra travel for oil and gas exploration and development activities in Chapter 4, BLM anticipates that summer tundra access would be permitted for only a few, specific purposes, as is the practice on State lands. This would minimize the frequency of occurrence. Also, the restrictions placed on that access through Required Operating Procedures under Alternatives B, C, and D would greatly limit the timing, vehicle types, and routes. For these reasons, the BLM believes that summer tundra access contributed by the action alternatives of this IAP/EIS would have no greater, and perhaps lesser, impacts on water than would permitted winter tundra access for which a much wider diversity of timing, vehicles, and routes is permitted.

[Response to 44.214]

The cumulative impacts analysis focuses on the major potential impacting activities to vegetation, such as large overland moves and seismic operations and the development of new oil and gas facilities (roads, airstrips, pads) measured in the tens of thousands of acres. The potential impacts to vegetation of the relatively infrequent access to the tundra for a small number of vehicles during the summer are subsumed in the discussion of indirect impacts to vegetation discussed in the cumulative impact analysis for vegetation. As stated in the section discussing summer tundra travel for oil and gas exploration and development activities in Chapter 4, BLM anticipates that summer tundra access would be permitted for only a few, specific purposes, as is the practice on State lands. This would minimize the frequency of occurrence. Also, the restrictions placed on that access through Required Operating Procedures under Alternatives B, C, and D would greatly limit the timing, vehicle types, and routes. For these reasons, the BLM believes that summer tundra access contributed by the action alternatives of this IAP/EIS would have no greater, and perhaps lesser, impacts on vegetation than would permitted winter tundra access for which a much wider diversity of timing, vehicles, and routes is permitted.

[Response to 44.215]

The cumulative impacts analysis focuses on the major potential impacting activities to vegetation, soils, water, etc., such as large overland moves and seismic operations and the development of new oil and gas facilities (roads, airstrips, pads) measured in the tens of thousands of acres. The potential impacts to soils of the relatively infrequent access to the tundra for a small number of vehicles during the summer are subsumed in the discussion of indirect impacts to soils discussed in the cumulative impact analysis for vegetation. As stated in the section discussing summer tundra travel for oil and gas exploration and development activities in Chapter 4, BLM anticipates that summer tundra access would be permitted for

only a few, specific purposes, as is the practice on State lands. This would minimize the frequency of occurrence. Also, the restrictions placed on that access through Required Operating Procedures under Alternatives B, C, and D would greatly limit the timing, vehicle types, and routes. For these reasons, the BLM believes that summer tundra access contributed by the action alternatives of this IAP/EIS would have no greater, and perhaps lesser, impacts on soils than would permitted winter tundra access for which a much wider diversity of timing, vehicles, and routes is permitted.

[Response to 44.216]

The text of Stipulation K-1 for Alternative D has been revised to state that gravel mines may be located within the active flood plain consistent with ROP E-8.

[Response to 44.217]

The strategies presented in Appendix G are provided as examples of measures that have been used elsewhere; some aspects of these measures may be reasonable to consider for adaptation to address concerns specific to North Slope communities. The example referenced in CPAI's comment is an infection control strategy implemented in an effort to prevent inadvertent transmission of infectious diseases between industry employees and community members. While it is true that NSB residents travel widely, North Slope communities are still relatively isolated as compared with urban populations, and, because of the notable baseline vulnerabilities in the North Slope population (including, for example, a high prevalence of chronic lung disease; notable susceptibility to respiratory infections; and low baseline rates of HIV and syphilis, as described in the Public Health subsections) it is reasonable to consider whether additional infection control measures such as those outlined in Appendix G could be modified or adapted to protect North Slope communities.

[Response to 44.218]

Map 3-2 has been modified.

[Response to 44.219]

The gauges plotted on Map 3-6 are active continuous record gauges, The Monument 1 gauge is a peak flow gauge but is active and should be included. Map 3-6 will be modified to add the gauging station at Monument 1.

[Response to 44.220]

Map 3-7 was generated using Mellor's radar-interpreted (SLAR) images to obtain lake depths in three depth ranges. For consistency, only the Mellor data was included in this map. Lake depth data from 62 lakes in NE NPR-A were also available but not used from Bendock and Burr's 1986 Arctic Trout study. The CPAI lake bathymetry will be utilized on future maps requiring greater detail within the plan area.

[Response to 44.221]

Thank you for your offer of sharing data regarding bird abundance and distribution in the Planning Area. The BLM regularly receives reports of avian research conducted by CPAI in the NPR-A and other locations on the North Slope (Colville River Delta and Kuparuk Oilfield). Data presented on maps in the Draft NE NPR-A SEIS reflects data collected over a large portion of the planning area during a long time period and as such BLM feels that it gives readers the best overall picture of distribution and abundance over the landscape. The CPAI data was collected at a much finer scale and resolution and is extremely valuable for the areas which were studied but may not represent the planning area as a whole.

[Response to 44.222]

Thank you for your offer of sharing data regarding bird abundance and distribution in the Planning Area. BLM regularly receives reports of avian research conducted by CPAI in the NPR-A and other locations on the North Slope (Colville River Delta and Kuparuk Oilfield). Data presented on maps in the Draft NE NPR-A SEIS reflects data collected over a large portion of the planning area during a long time period and as such BLM feels that it gives readers the best overall picture of distribution and abundance over the landscape. The CPAI data was collected at a much finer scale and resolution and is extremely valuable for the areas which were studied but may not represent the planning area as a whole. The Colville River delta does not fall within the planning area so data collected on the delta would not be reflected on the map. Information on aircraft disturbance on yellow-billed loons and other species, collected at Alpine is presented in section 4.3.8.

[Response to 44.223]

Thank you for your offer of sharing data regarding bird abundance and distribution in the planning area. The BLM regularly receives reports of avian research conducted by CPAI in the NPR-A and other locations on the North Slope (Colville River Delta and Kuparuk Oilfield). Data presented on maps in the Draft NE NPR-A SEIS reflects data collected over a large portion of the planning area during a long time period and as such BLM feels that it gives readers the best overall picture of distribution and abundance over the landscape. The CPAI data was collected at a much finer scale and resolution and is extremely valuable for the areas which were studied but may not represent the planning area as a whole.

[Response to 44.224]

Thank you for your offer of sharing data regarding bird abundance and distribution in the Planning Area. The BLM regularly receives reports of avian research conducted by CPAI in the NPR-A and other locations on the North Slope (Colville River Delta and Kuparuk Oilfield). Data presented on maps in the Draft NE NPR-A SEIS reflects data collected over a large portion of the planning area during a long time period and as such BLM feels that it gives readers the best overall picture of distribution and abundance over the landscape. The CPAI data was collected at a much finer scale and resolution and is extremely valuable for the areas which were studied but may not represent the planning area as a whole.

[Response to 44.225]

Thank you for your offer of sharing data regarding bird abundance and distribution in the planning area. The BLM regularly receives reports of avian research conducted by CPAI in the NPR-A and other locations on the North Slope (Colville River Delta and Kuparuk Oilfield). Data presented on maps in the Draft NE NPR-A SEIS reflects data collected over a large portion of the planning area during a long time period and as such BLM feels that it gives readers the best overall picture of distribution and abundance over the landscape. The CPAI data was collected at a much finer scale and resolution and is extremely valuable for the areas which were studied but may not represent the planning area as a whole.

[Response to 44.226]

Thank you for your offer of sharing data regarding bird abundance and distribution in the Planning Area. The BLM regularly receives reports of avian research conducted by CPAI in the NPR-A and other locations on the North Slope (Colville River Delta and Kuparuk Oilfield). Data presented on maps in the Draft NE NPR-A SEIS reflects data collected over a large portion of the planning area during a long time period and as such BLM feels that it gives readers the best overall picture of distribution and abundance over the landscape. The CPAI data was collected at a much finer scale and resolution and is extremely valuable for the areas which were studied

but may not represent the planning area as a whole.

[Response to 44.227]

The BLM has been working with ADFG and NSB since 1990 to study TLH movements using satellite telemetry. The maps in the Draft EIS include 15 years of data collected between July, 1990, and July, 2005. Analysis of the data for July, 2005, to July, 2006, to which the commenter refers, was not completed until April, 2007, after the maps for the SEIS were prepared. We are currently working on analysis of the data from July, 2006, to July, 2007, and will not complete these until at least April, 2008. Regardless, the addition of one or even two years' data to an existing base of 15 years' data would make no difference to the analyses of impacts in this Supplemental Plan. They would change the utilization distributions in the maps only slightly, and probably not in a statistically significant way (this is being tested with the analyses currently in progress). The maps are meant to give a general idea of range use, not precise boundaries of important vs. unimportant areas. The BLM will continue, however, to use all current data available in its management of the area.

[Response to 44.228]

The BLM has been working with ADF&G and NSB since 1990 to study TLH movements using satellite telemetry. The maps in the Draft EIS include 15 years of data collected between July, 1990, and July, 2005. Analysis of the data for July, 2005, to July, 2006, to which the commenter refers, was not completed until April, 2007, after the maps for the SEIS were prepared. We are currently working on analysis of the data from July, 2006, to July, 2007, and will not complete these until at least April, 2008. Regardless, the addition of one or even two years' data to an existing base of 15 years' data would make no difference to the analyses of impacts in this Supplemental Plan. They would change the utilization distributions in the maps only slightly, and probably not in a statistically significant way (this is being tested with the analyses currently in progress). The maps are meant to give a general idea of range use, not precise boundaries of important vs. unimportant areas. The BLM will continue, however, to use all current data available in its management of the area.

[Response to 44.229]

To ease readers' ability to compare maps in the Draft Supplemental IAP/EIS with those in the Final Supplemental IAP/EIS, map numbers have not been changed to reflect the order in which they are mentioned in the text.

[Response to 44.230]

Map changed to reflect VRM Class I upstream of Umiat.

COMMUNICATION NUMBER 45

From FEX

Tim England, Senior Manager, Exploration, FEX GP Inc.

November 6, 2006

Bureau of Land Management
222 W 7th Avenue
Anchorage, Alaska 99513-7599

Subject: National Petroleum Reserve – Alaska
Bureau of Land Management
Supplemental IAP/EIS Comments

FEX L.P. is an exploration company operation in Alaska with over 700,000 Net acres of mineral exploration lease holdings in the National Petroleum Reserve – Alaska (NPR-A). In the last two years, FEX L.P. has operated four Exploration wells drilled in the northwest planning area of the NPR-A.

As we have stated previously in our comments on the BLM's proposed oil And gas leasing regulations, while the areas of the NPR-A that are leased to industry have significant hydrocarbon potential, there is only a small chance that they hold prospects large enough for stand-alone development. With that in mind, it is extremely important that the lands with the highest potential be made available for exploration and development. FEX L.P. therefore endorses the modified Alternative D for the northeast planning area of the NPR-A.

The BLM and ourselves share similar goals with respect to the production of wildlife, the environment and subsistence use of these lands. Further, we believe exploration and development activities can be carried out without losing sight of these goals. However, exploration and development activities will not proceed in the NPR-A if burdened by prescriptive rather than performance-based regulations, because these unnecessarily add to the very high costs of executing exploration and development activities.

FEX L.P. appreciates the opportunity to participate in the Supplemental IAP/EIS public comment process and our specific comments to proposed Alternatives plus Required Operating Procedures and Stipulations are Attached.

With best regards,

Tim England
Senior Manager, Exploration
FEX GP Inc., General Partner of FEXL.P.

Attachments

1. FEX Recommendations on the NE NPR-A Supplemental IAP/EIS
2. Northeast NPR-A ; Anchorage Testimony, October 1, 2007

cc: Henri Bisson

Tom Lonnie
 Hans Neidig
 Mark Kroloff
 Tom Irwin

August 2007 - Draft Supplemental NE NPR-A Integrated Activity Plan/EIS

Comments on the scopes for Alternatives A, B, C, and D.

Discussion

Alternative A is the no action alternative, which continues the management established in the 1998 ROD. Alternatives B, C, and D would make portions or all of the lands north and east of Teshekpuk Lake available for oil and gas leasing. Alternatives B, C, and D also provide for the use of performance based stipulations and required operating procedures. Alternative C, which makes the entire planning area available for leasing, would have the greatest impact, primarily because it would likely lead to the most exploratory drilling and development of oil. Alternative A, because it makes the smallest area available for leasing would have the least impacts. Land available for leasing between the extremes is contained in Alternatives B and D. The table below shows the oil resource projections for each alternative.

Oil Resource Estimates for Each Alternative

Alternative	A	B	C	D
Oil (Mmbbl)	2,900	3,350	4,050	3,700

While Alternative C would make the most land available and has the greatest potential resource, it provides for the greatest potential impact with marginal incremental resource potential. The remoteness of the NE NPR-A and high cost of exploration and development necessitates that the land with the best prospects for resource development be made available for leasing. This reduces cost and risk while minimizing impacts and increasing resource development potential. Alternative D provides for the most prospective lands to be made available with performance-based stipulations and required operating procedures.

The oil and gas industry has made great strides in the decades of development on the North Slope and with today's extended reach drilling technology, step outs on the order of 3 miles are now practical. This means that additional subsurface acreage surrounding Teshekpuk Lake with its potential resource could be made available without any additional surface disturbance and the maintenance of the 1/4 mile set back from the lake for no surface occupancy. There would be no environmental impact to the lake, wildlife or subsistence activities as there would be no additional development footprint.

Recommendation

1) [45.001] Alternative D be revised to include additional subsurface acreage adjacent to the currently proposed tracks that would allow for development drilling outside of the no surface occupancy set back in K-3 anticipating 3 mile step outs.

Northeast NPR-A Supplemental IAP/EIS

2) The revised Alternative D be selected as the preferred leasing alternative due to the lowest practical impact, high potential resource and highest potential for exploration and development success.

Exception Process:

From the NE NPR-A Amended IAP/EIS

Requirement/Standard

In the event that an exception to a lease or permit stipulation or ROP is requested, and before an exception may be granted, the lessee/permittee shall demonstrate to the satisfaction of the AO that:

1. a) implementation of the lease stipulation or ROP is technically not feasible, or
 - b) implementation of the lease stipulation or ROP is economically prohibitive, or
 - c) there is an environmentally preferable alternative is available, and
2. the alternative proposed by the lessee fully satisfies the objective(s) of the lease stipulation or ROP.

Discussion

This stipulation is very powerful. The AO (currently defined as 1) the State Director, 2) Manager of the Northern Field Office in Fairbanks, and 3) Deputy State Director, Division of Energy and Solid Minerals has the authority to decide what is technically not feasible, economically prohibitive or environmentally preferable. This could either hinder development or promote it depending on the AO's findings. In addition, the ROD states, "The AO may add additional site-specific restrictions as deemed necessary by further NEPA analysis and as developed through consultation with other Federal, State, and NSB regulatory and resource agencies. Thus, the AO position is extremely important to potential development.

Recommendation

The Exception Process defined in the NE NPR-A Amended IAP/EIS is very important and should be included for Alternatives A, B, C, and D.

Comments on the performance based stipulations and required operating procedures for Alternatives B, C, and D.

WASTE PREVENTION, HANDLING, and DISPOSAL and SPILLS:

A - 2 Required Operating Procedure

Alternatives B, C, and D

Discussion

[45.002] This requirement is acceptable as long as a waste-disposal facility is authorized in the area. The back hauling of drill cuttings, waste fluids, incinerator waste and other solid waste such as unsalvageable metals could be very costly. This is an excellent opportunity for the BLM to provide a staging facility with certain services such as solid waste disposal for the NE NPR-A.

Recommendation

The following be added to the Required Operating Procedure A-2; "To minimize impact to wildlife and subsistence resources and protect the environment, upon submission of a Development Plan by the Lessee, the AO will convene a workshop with the appropriate Federal, State, NSB, and Lessee representatives to identify the best location for BLM solid and liquid (drill cuttings and hazardous liquids) waste disposal facility in the NE NPR-A."

A - 8 Required Operating Procedure

Alternatives B, C, and D

Discussion

This ROP is generally acceptable. Provision h. applies just to the Alternative D and encourages the lessee/permittee to participate and comply with the Incidental Take Program under the Marine Mammal Protection Act. Polar bears may be protected under this Act.

Recommendation

No changes. ROP is acceptable.

WINTER OVERLAND MOVES AND SEISMIC WORK:

C - 2 Required Operating Procedure

Discussion

This ROP is a major performance stipulation which states ground operations are only allowed when sufficient frost and snow cover are present to protect the tundra. While there is some risk the AO will act extremely conservatively in limiting tundra travel, we have not seen this in recent history. The ROP is not clear if the AO acts on both ground operations opening and closing or just closing but historically the AO has announced both opening and closing dates. FEX strongly endorses this ROP. With the changing winds in NE NPR-A, snow cover varies from day to day as does frost depth for freeze up. The penetrometer provides for better information to determine when it is safe to travel over particular trails with varying soil, vegetation, water, and climate conditions. FEX has always acted conservatively in demobing off the tundra well in advance of tundra closing dates established by the AO.

Recommendation

No changes. FEX endorses the use of performance-based standards in the C-2 Required Operating Procedure.

FACILITY DESIGN AND CONSTRUCTION:

E - 7 Required Operating Procedure

For Alternative D

Discussion

[45.003] The increase in pipeline height from 5 feet to 7 feet has the primary impact of facilitating caribou movement. There is little evidence that supports the theory that the 5-foot height impeded caribou movement in anyway but it is a very important issue with the residents. There is an added cost of the 7 foot standard as even more work must be done overhead and off of scaffolding. It is unknown if the new 7 foot to bottom of pipe at the VSM criteria results in a higher average pipeline height over the area versus the old 5 foot minimum clearance from tundra to bottom of pipe.

[45.004] The 500-foot offset from the road is also a caribou movement criteria. This offset may or may not be additional cost as the pipelines may be able to move more directly than roads and thus reduce both the capital and operating pipeline cost. FEX should suggest that an exception be added to allow the AO to determine if smaller offsets are allowable in certain areas where the road may assist in spill containment.

The most problematic part of the ROP is the "buried pipelines, or pipelines buried under roads may be required by the AO". **[45.005]** Buried pipelines in arctic permafrost are extremely expensive and problematic. Burial in the road will require a higher road and more gravel. Burial is problematic from pipeline operations as external corrosion inspection is impossible. In addition, pipeline insulation failure is common and if buried would be impossible to detect before major damage occurs. This pipeline burial proposal is something that has been proposed by residents for decades and should not be accepted by FEX. Note, the Draft of the NSB criteria for oil & gas facilities recently called for "bullet proof" pipelines.

Recommendation

[45.006] 1) For Alternatives B, C, and D, an exception be added to the ROP which states, "The AO, after consultation with the appropriate Federal, State and NSB representatives, may allow smaller pipeline and road offsets in certain areas where is can be shown impacts are reduced."

[45.007] 2) For Alternatives B, C, and D, the following be added, "Buried pipelines are limited to caribou and road crossing of less than 55 feet in length plus major river crossings where practical."

E - 11 Required Operating Procedure

For Alternatives B, C, and D with c. 1-3. being specific to Alternative D only

Discussion

[45.008] The circumstances, which allow for overhead power and communication lines, c. 1-3, should be applicable to Alternatives B, and C also. Human safety concerns as well as non feasibility should be standards for the allowance of specific designs. **Note: [45.009]** the last sentence in E-11 c for Alternatives B and C and the 3 circumstances under E-11 c for Alternative D appear out of place. The 3 circumstances should go with the last sentence which references them (Volume I page 2-53).

[45.010] The 1 mile buffer around the nest site is arduous enough and the 1,625 foot buffer potentially around any lake of 25 acres in size makes facility placement options in tracks B through G in Alternatives B, C and D, almost impossible considering the No Surface Occupancy stipulations for Goose Molting Areas. There is no scientific evidence to support the arbitrary 1 mile and 1,625 foot buffers. This Required Operating Procedure should be removed. It makes a stretch assumption of a "take of species" from direct and indirect interaction with oil and gas facilities. The Goose Molting Area NSO, Southern Caribou Calving Area NSO, Caribou

Movement Corridors NSO and the yellow-billed loon habitat buffer will all overlap and make the siting of any permanent oil & gas facilities in the tracks B - G an Exception Process which will introduce further cost and delay.

Alternative D provides for a facility location study area. **[45.011]** The ROP E-11 should allow for allowances in deviation in the facility study area, as determined by the AO, to minimize overall impacts to all wildlife including eiders, loons, caribou, geese and nature. For example, it may be better to impact one lake with an airstrip than the potential impacts from three airstrips on three leases. This also goes to support the establishing of staging or service areas within the NE NPR-A in support of oil and gas development that will minimize impacts versus multiple individual staging and service areas. In addition, **[45.012]** an onshore access road across a small portion of a NSO area may be the better alternative to resource extraction and minimized impact to wildlife, the environment and subsistence use than the addition of increased pad for storage and an airstrip.

Recommendation

- 1) The required survey periods for Spectacled and Steller Eiders plus Yellow Billed Loons should be reduced to 2 years.
- 2) The circumstances, which allow for overhead power and communication lines, c. 1-3, should be applicable to Alternatives B, and C also. Human safety concerns as well as non-feasibility should be standards for the allowance of specific designs. Note: the last sentence in E-11 c for Alternatives B and C and the 3 circumstances under E-11 c for Alternative D appear out of place. The 3 circumstances should go with the last sentence, which references them (Volume I page 2-53).
- 3) Delete the arbitrary and unsupported 1 mile and 1,625 foot buffer zones.
- 4) **[45.013]** The following should be added to E-11 Alternative D, "The AO, after completion of the facility siting study which includes Federal, State and NSB representatives, may grant exceptions to this ROP, including exceptions to the NSO areas of the Goose Molting and Teshekpuk Lake Caribou Habitat Areas for the purposes of onshore access roads and pipeline corridors, if they result in minimizing impact and improving resource extraction."

USE OF AIRCRAFT FOR PERMITTED ACTIVITIES:

F - 1 Required Operating Procedure

Alternatives B, C, and D

Discussion

The objectives for F-1, K-3 and K-5 are all very similar, minimize the effects of low flying aircraft on wildlife, traditional subsistence activities and local communities.

The F-1 ROP provides for use of larger aircraft, larger landing strips and storage areas with certain minimum altitudes, except for take off and landing, as long as the aviation plans minimize disturbance. Paragraph c. under Alternative D requires the submittal of an aircraft use plan to be reviewed by the appropriate State, Federal and Borough agencies. The AO also has authority under Alternative D to adjust the plan, including the possible suspension of flights if the resulting disturbance is determined to be unacceptable. It is more arduous than what is required under Alternatives B and C.

K-3 ROP concerning the Goose Molting Area, has restrictions on the number of flights per week from May 20 to August 20 on Alternatives B and C and from June 15 to August 20 for Alternative D but no restriction on aircraft size. **[45.014]** K-5 ROP concerning the Teshekpuk Lake Caribou Habitat Area, however, still has restrictions on aircraft size (no larger than twin otter) and number of takeoffs and landings (1 per day from May 20 through August 20). Since the Teshekpuk Lake Caribou Habitat Area overlays all of the Goose Molting Area, the more restrictive K-5 ROP would most likely apply thereby offsetting the F-1 and K-5 ROP. However, F-1 ROP applies to Alternatives B, C, and D which all involve the Teshekpuk Lake Caribou Habitat Area so there is a conflict in the ROP's. FEX should recommend that the use of existing airstrips or BLM service area airstrips be allowed with no restriction on aircraft size. Development operations will always work to minimize cost by flying the largest planes full thereby minimizing takeoffs and landings and disturbance.

Recommendation

- 1) **[45.015]** The requirement for the submittal of an aircraft use plan should be deleted from Alternative D and included in Alternative C since Alternative C encompasses the greatest area and has the greatest impact.
- 2) **[45.016]** Add the following to each alternative, "The use of existing airstrips, BLM service area airstrips or new larger airstrips will result in larger aircraft employed and few flights to the facility." Development operations will always work to minimize cost by flying the largest planes full thereby minimizing takeoffs and landings and disturbance.

SUBSISTENCE CONSULTATION FOR PERMITTED ACTIVITIES:

H - 1 Required Operating Procedure

For Alternative D

Discussion

The objective for H-1 and H-2 are similar, prevent unreasonable conflicts between subsistence uses and oil and gas related activities.

Both Alternative ROP's require the lessee/permittee to consult with the cabin/campsite owners and in the event no agreement is reached the AO has the authority to make a determination as to which activities will occur. The ROP for Alternative D has the increased stipulation of prohibiting operational activities within 1 mile around cabins and campsites (as identified by the NSB's 2001 official inventory).

Recommendation

[45.017] Replace the first two sentences of the Requirement/Standard with, "The Lessee will meet with all cabin and campsite users/owners within one mile of operational activities to reach an agreement on any conflicts relating to subsistence use. The Lessee/permittee shall consult directly with the affected communities using the following guidelines:"

H - 2 Required Operating Procedure

For Alternative D

Discussion

The objective for H-1 and H-2 are similar, prevent unreasonable conflicts between subsistence uses and oil and gas related activities.

[45.018] H-2 is less restrictive than H-1 as H-2 does set a minimum distance for seismic if a prior arrangement is not reached. H-1 set a minimum distance of 1 mile. No consideration is giving to whether the cabin/campsite is even occupied during the operational activity.

Resolve the apparent conflict in H-1 and H-2.

Recommendation

Substitute the following for the 4th bullet under H-2 Requirement/Standard, "If the Lessee/permittee and affected cabin/campsite owner/users are not able to reach an agreement relating to subsistence and operational activities, the AO, upon hearing all of the evidence from all parties, may impose the settlement conditions on the parties. Regardless of the outcome, the AO will prohibit wintertime seismic work within 300 feet of a known, long-term cabin or campsite when occupied."

LEASE STIPULATIONS THAT APPLY IN BIOLOGICALLY SENSITIVE AREAS:

K - 1 Lease Stipulation - Rivers

Discussion

Such large climatic events will make pipeline routing critical to minimize cost. It will be hard to argue for a less stringent alternative however.

Recommendation

None.

K - 3 Lease Stipulation - Teshekpuk Lake (Teshekpuk Lake Shoreline)

For Alternative D

Teshekpuk Lake (approximately 211,000 acres) will be deferred from additional oil and gas leasing.

Discussion

This is a choice between alternatives. The stipulations proposed for leasing of Teshekpuk Lake, Alternatives B and C, are that oil and gas exploration and production facilities (pipelines and causeways are exceptions) are prohibited in the lake or under the lake 3/4 mile from the shoreline and on land must be set back 1/4 mile from the shoreline of the lake. This means that production facilities could be installed in the middle of the lake as long as the ROP precautions for spill response and operational activities are met (those ROP precautions are reasonable). The Alternative D prohibits leasing in the lake and prevents the development of economic reservoir that may underlie the shoreline area of the lake.

Recommendation

Since Alternative C leases the most land and has the greatest potential impact, the more restrictive stipulation on exploration and development around Teshekpuk is warranted to minimize environmental and subsistence impact.

Alternative D however, leases less land. As stated prior, A [45.019] Alternative D should be revised to include additional subsurface acreage adjacent to the currently proposed tracks that would allow for development drilling outside of the no surface occupancy set back in K-3 anticipating 3 mile step outs. The K-3 Requirement/Standard should be revised accordingly to state, "Permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines, are prohibited within 1/4 mile of the ordinary high water mark of Teshekpuk Lake and no oil and gas facilities or pipelines are permitted on or under the water of Teshekpuk Lake. (No alternative procedures will be approved.)"

K - 4 Lease Stipulation - Goose Molting Area

Alternatives B, C and D

Discussion

The standard should be to minimize surface and wildlife impact of permanent oil and gas facilities, including pipelines and roads. Unitization should be a requirement for development of multiple leases. In addition, the Lessee must demonstrate in the permitting process that such placement of permanent oil and gas facilities and pipelines will minimize cumulative surface and wildlife disturbance. After consultation with the appropriate Federal, State, and NSB regulatory and resource agencies, the AO would approve placement of permanent oil and gas facilities as part of the development plan.

Stipulation K-5 covers the Teshekpuk Lake Caribou Habitat Area, which overlaps all of the Goose Molting Area, and imposes further restrictions on aircraft, i.e. from May 20 through August 20, use of aircraft larger than a Twin Otter shall be for emergency purposes only. And, from May 20 through June 20, flights are limited to an average of one round trip per day. The limit of one Twin Otter aircraft per day during this period, or just two flights per week according to K - 4 i. and g., means a movement of about 32 to 100 people per week without cargo i.e. perishable food, equipment and materials. Full field development operations would mean a minimum of 100 people per week changing out plus associated food, equipment and materials. Construction and maintenance periods would be at least double that amount. [45.020] The current standard would force Lessee's to build multiple air strips on multiple leases with interconnecting roads to be able to move the necessary operations and construction personnel. Larger aircraft, while bigger and noisier, could fly in three times per week, and reduce the disturbance of dozens of small aircraft flights over a much larger area in the same period.

Recommendation

Insert the following into Requirement/Standard paragraph i., "There is no restriction of aircraft size and number of flights into existing airstrips or BLM area airstrips. Unitization is required for development of multiple leases." This will minimize surface and wildlife disturbance.

K - 5 Lease Stipulation - Teshekpuk Lake Caribou Habitat Area

For Alternative D

Discussion

The four years of study followed by analysis before authorization of construction in Alternative D imposes a tremendous economic hardship with no scientific biological benefits. This exceeds EIS and NEPA requirements and the 1998 ROD Stipulation of 3 years study data. The Teshekpuk Lake Caribou Habitat Area extends from south of Teshekpuk Lake to north of the lake to the Beaufort Sea. **[45.021]** No justification or data has been presented to suggest the area north of the lake is more sensitive to the Teshekpuk Lake Caribou. In fact, for Alternative D, ROP K-10 makes the 233,000 acres in the Southern Caribou Calving Area the most sensitive and unavailable for permanent oil and gas facilities except for pipelines. The additional one year of study imposes an economic hardship on the lessee with no justifiable environmental benefit. For example, the proposed aircraft restrictions which are to minimize disturbance and hindrance of caribou, or alteration of caribou movements through portions of the Teshekpuk Lake Caribou Habitat Area, are the same for Alternatives B, C, and D. So an extra year of study for Alternative D is not justified.

Recommendation

The standard for caribou habitat and movement for Alternative D should be the same as that required in Appendix E Stipulation 29 of the NE NPRA Final Amended IAP/EIS ROD, NEPA and studies completed within the EIS.

[45.022] For Alternatives B, C and D

Discussion

Ramps over pipelines for caribou migration have shown to be less effective than elevated pipelines. Buried pipelines and buried under the road pipelines have been demonstrated to have increased and harder to detect corrosion plus larger more damaging spills. Other design alternatives such as elevated pipeline caribou corridors, where pipelines are elevated a minimum of 10 feet for a four span length would provide a safer less restrictive option.

Recommendation

The standard should read, "The AO, after consultation with appropriate Federal, State and NSB regulatory and resource agencies, in the Teshekpuk Lake Caribou Habitat Area may require a specific pipeline design criteria in areas where pipelines potentially impede caribou movement. Buried pipelines are limited to caribou and road crossing of less than 55 feet in length plus major river crossings where practical."

[45.023] For Alternatives B, C and D

Recommendation

There is a conflict with K-4. The recommendation is the same as K-4, insert the following into Requirement/Standard paragraph e. 4., "There is no restriction of aircraft size into existing airstrips or BLM area airstrips. Unitization is required for development of multiple leases." And into paragraph e. 5. "There is no restriction of number of flights into existing airstrips or BLM area airstrips." This will minimize surface and wildlife disturbance.

K - 6 Lease Stipulation - Coastal Area

For Alternatives B, C and D

Discussion

[45.024] In order to minimize new disturbance, use of existing gravel pad and infrastructure should be encouraged. Existing gravel pads at Camp Lonely, Husky/USGS or DEW Line sites are not part of the 300 acre per lease allowance per K-11. Use of these existing facilities would also be exempt from lease stipulations regarding restrictions of aircraft size and use from the June 15 to August 20 time period. More specifically, unrestricted use of the existing airstrip is preferable to the possibility of 3 new airstrips with connecting roads in Alternative D north Teshekpuk leases which would create new disturbance i.e more flights, over a wider area. This is addressed under recommendations for K-4 and K-5.

Also, permanent oil & gas facilities, including gravel pads, roads, airstrips and pipelines, should be exempt from the 3/4 mile set back from the coast when public access and facility infrastructure are utilized. The Lessee must demonstrate such placement will minimize cumulative surface and wildlife disturbance.

[45.025] Recommendation

1) The recommendations regarding aircraft use of existing gravel pads and airstrips under K-4 and K-5 be adopted.

2) The following should be added to the Requirement/Standard for K-11, "Permanent oil & gas facilities, including gravel pads, roads, airstrips and pipelines, should be exempt from the 3/4 mile set back from the coast when public access and facility infrastructure are utilized. The Lessee must demonstrate such placement will minimize cumulative surface and wildlife disturbance."

K - 9 Lease Stipulation - Caribou Movement Corridors

[45.026] For Alternative D

Discussion

Caribou Movement Corridors, Southern Caribou Calving Area, Teshekpuk Lake Caribou Habitat Area, Goose Molting Area and Goose Molting Area Lakes have all been identified through detailed caribou migration and wildlife studies. With surface occupancy allowed on only 300 acres per track or 0.6% of the surface area, attempts to measure and predict impact are futile. Since critical habitat areas have already been defined, no additional caribou or wildlife studies should be required in these areas. Especially 4 years of study.

Recommendation

Adopt recommendations on ROP's and Stipulations K-4, K-5, K-6 and K-11.

[45.027] K - 10 Lease Stipulation - Southern Caribou Calving Area

For Alternative D

Discussion

This places a large amount of acreage southwest, south and southeast of Teshekpuk off limits to drill sites and other permanent facilities. This must be considered very high value caribou calving area yet there are no additional requirements for 4 years of caribou studies prior to the placement of any pipelines.

Recommendation

As the Southern Caribou Calving area is considered the most sensitive and valuable caribou habit and requires only a 3 year caribou movement study for placement of pipelines, then the 4 year study requirement for the Teshekpuk Lake Caribou Habitat Area under K-5 should be reduced as recommended previously.

K - 11 Lease Stipulation - Lease Tracts A - G

For Alternative D

Discussion

The allowance for use of existing gravel pads without counting against the 300-acre surface area for development is a positive approach for minimizing wildlife and environmental impact.

Recommendation

FEX strongly endorses stipulation K-11 and highly recommends the adoption of FEX recommendations on the other ROP's and Stipulations.

SUMMER VEHICLE TUNDRA TRAVEL

L - 1 Lease Stipulation - Required Operating Procedure

For Alternative D

Discussion

FEX strongly supports this ROP as it will allow for better remediation, scouting and prevention of damage to tundra from vehicle traffic. Use of low-ground-pressure vehicles will also facilitate early snow and ice making for exploration pads and ice roads.

Recommendation

No changes to Lease Stipulation L-1.

FEX L.P. Inc.

NE NPR-Alaska

Supplemental IAP/EIS

Alternatives A, B, C, and D

Attachment

DRAFT #2

Northeast NPR-A: Anchorage Testimony, October 1, 2007

Northeast Planning Area, National Petroleum Reserve Alaska

Public Comments - Anchorage Testimony

My name is Richard Garrard, I am the Geoscience Manager for FEX L.P. in Alaska with responsibility for our geological and commercial evaluation of the National Petroleum Reserve Alaska region. I have more than 35 years of worldwide exploration experience including the last 12 years living and working here in Alaska.

FEX L.P. is the wholly owned subsidiary of Talisman Energy Inc., a Canadian Oil and Gas Company based out of Calgary. We are a relatively new but active exploration company in Alaska, having first become involved in NPR-A operations in 2004 through Total. Since then we have become an operator and up to this year have completed four exploration wells in the Northwest NPR-A, conducted one DST, and acquired three proprietary 3D and one 2D seismic surveys. One of our wells (Aklaqyaaq #1) is the deepest drilled in the NPR-A for more than 25 years. We have also been active in six recent BLM and State lease sales. In most of the NPR-A our interests are shared with Petro-Canada. In May 2007 FEX L.P. announced an important new hydrocarbon discovery in the Northwest NPR-A to the west of Teshekpuk Lake.

Today I would like to express our support for Alternative D in the Draft Supplemental Integrated Activity Plan and Environmental Impact Statement (IAP/EIS). This alternative allows the resumption of responsible exploration and development activities under a highly regulated process to take place in the onshore areas north of Teshekpuk Lake. Our interest in these areas is based upon detailed analysis of the geology and hydrocarbon potential. The reason for the attractiveness of this area is the Barrow Arch, a geologically elevated area that has historically been the focus of oil and gas migration from the deeper basin areas ("source rock kitchens") to the north and south. All of the commercial oil and gas fields in North Alaska are located within 25 miles of this structural feature. The crest of the Barrow Arch is located just offshore of the Northeast NPR-A. The south flank of this feature is considered to be one of the more attractive areas in Alaska for future exploration. Since the acquisition of new high-resolution seismic information new exploration opportunities have been recognized that were not visible in the past.

The North Teshekpuk region is an area that has already seen several exploration campaigns conducted by both the Federal Government (through the USGS) and ASRC (with Chevron). Between 1973 and 1978 the USGS acquired extensive seismic data and drilled five exploration wells. A major operations center was established at Camp Lonely that not only supported this venture but also other operations elsewhere in the NPR-A. Camp Lonely became equipped at this time with a 5000' all season gravel runway capable of handling multiple flights involving crew and materials every day. In addition, gravel pad staging areas, several buildings, fuel tanks, and docking facilities were all constructed and still remain functional today. The site was also used for many years by the military as the Pitt Point DEW Line Station. In 1982 ASRC drilled the Livehorse #1 exploration well through a joint venture with Chevron.

Approximately 15 miles west of the North Teshekpuk region lie the Cape Simpson natural oil seepages. The existence of these surface pools and rivers of oil have been known by the native inhabitants of the North Slope for centuries and at one time the oil soaked tundra was gathered for heating purposes. The Cape Simpson oil seepages also attracted the initial search for oil on the North Slope by private investors and the creation of the Naval Petroleum Reserve #4 by the Federal Government. The seepage of oil from breached reservoirs in the sub-surface is a very natural process in this part of the North Slope. Photographs of Seepage #2 are attached.

NPR-A: Cape Simpson Oil Seepage #2
Natural Occurrence of Oil West of Teshekpuk Lake



NPR-A: Cape Simpson Oil Seepage #2
Natural Occurrence of Oil West of Teshekpuk Lake



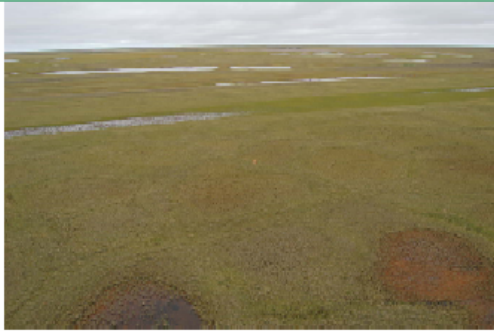
NPR-A: Cape Simpson Oil Seepage #2
Natural Occurrence of Oil West of Teshekpuk Lake



Lastly I would like to review the recent exploration operations by FEX L.P. in the NPR-A and our attention to environmental protection and conservation, and our respect for community interests and values. Our goal is to minimize any surface impact - and we do not tolerate any employees or contractors who do not fully comply with the regulations established by the BLM and other agencies. During the 2006 and 2007 all of our drilling operations were conducted on ice pads and supported by ice roads and ice runways. Elsewhere materials were mobilized using tundra friendly rolligons. The attached photographs show the drillsite at Aklaq #6 before, during, and after our drilling operation last winter. Apart from the wellhead there is no impact to the tundra as can be seen in the last photograph, taken just three months after rig demobilization. In fact the only damage to the tundra in this area is the result of migrating caribou - and that is the way it should be.

Northeast NPR-A Supplemental IAP/EIS

Northwest NPR-A: Aklaq #6 (FEX/Petro-Canada)
August 2006: Pre-Drill Staked Location



Northwest NPR-A: Aklaq #6 (FEX/PetroCanada)
Doyon Arctic Wolf – During April 2007



Northwest NPR-A: Aklaq #6 (FEX/Petro-Canada)
July 2007 <3 Months Following Rig Release



Northwest NPR-A: Aklaq #6 (FEX/Petro-Canada)
Wellhead – After July 2007



FEX L.P. is very aware of the environmental and cultural sensitivity of the onshore areas north of Teshekpuk Lake. We understand that area continues to be an important subsistence use area for the Iñupiat people. The recent activities of FEX L.P. in the NPR-A demonstrate our ability to conduct operations in sensitive areas while minimizing any impact on the environment, traditional subsistence activities or cultural resources. We have worked hard building a positive relationship with the North Slope communities based on respect, ongoing communication, and involvement in our activities. Most of our operations to date have been undertaken in conjunction with native corporations including ASRC, UIC, and Kuukpik. We have been very pleased with these joint ventures that have enabled us to execute efficient, safe and environmentally responsible operations. The native corporations have also benefited both financially and through employment opportunities - a situation we hope to continue in the future.

FEX L.P. believes the new regulations proposed in the Draft Supplemental IAP/EIS for the Northeast NPR-A adequately addresses cumulative impact issues and therefore, recommend the BLM adopts Alternative D as their preferred alternative in the Final IAP/EIS. In the best interest of the industry, the North Slope residents, the citizens of Alaska, and the Nation it is important that the BLM and Department of the Interior continue to open the most prospective areas in the NPR-A to responsible exploration and development.

Thank you for your time and attention.

-END-

[45.028] Addendum: Since the Anchorage Public Testimony held on October 1, 2007, FEX L.P. would like to recommend a modified version of Alternative D as the preferred alternative

adopted by the BLM. This modified Alternative D would incorporate offshore portions of Teshekpuk Lake up to three miles from the coastline to be leased but with a no surface occupancy provision. Such a course of action would allow for the commercial development of hydrocarbons to take place in the subsurface should a discovery be made that extends into the nearshore portion of Teshekpuk Lake without increasing any surface environmental impact.

[Response to 45.001]

The BLM considered whether to offer oil and gas leasing of additional lands under Teshekpuk Lake in Alternative D under conditions as described in the comment, but determined not to do so. Leasing was considered under all of the lake in Alternatives B and C and under part of the lake in Alternative A.

[Response to 45.002]

The BLM considered the comment, but determined not to make the suggested change in the text. The location of waste disposal facilities may be considered as part of a proposal for such facilities as part of a development plan by a lessee.

[Response to 45.003]

The BLM has determined to maintain the 7-foot standard for pipeline height in Alternatives B through D. It gives greater assurance of the ability of caribou to pass under the pipeline at all times of year and greater safety and access for winter travel by subsistence users.

[Response to 45.004]

The performance-based protection measures, such as that in ROP E-7(c), afford the BLM the opportunity to adjust specific requirements informed by the latest understanding of the potential of impacts. The BLM may consider whether smaller offsets meet the objective of the ROP on a case-by-case basis and can consider their utility for spill containment in that context.

[Response to 45.005]

The BLM considered changing the text of the requirement/standard of ROP E-7(b), but determined that it provides suitable flexibility. Depending upon the specific proposed development, burial of pipeline may be considered and required, but only after consideration of other options to meeting the objective to minimize disruption of caribou movement and subsistence use.

[Response to 45.006]

The performance-based protection measures, such as that in ROP E-7(c), afford the BLM the opportunity to adjust specific requirements informed by the latest understanding of the potential of impacts. The BLM may consider whether smaller offsets meet the objective of the ROP on a case-by-case basis and can consider their utility for spill containment in that context.

[Response to 45.007]

The BLM considered changing the text of the requirement/standard of ROP E-7(b), but determined that it provides suitable flexibility. Depending upon the specific proposed development, burial of pipeline may be considered and required, but only after consideration of other options to meeting the objective to minimize disruption of caribou movement and subsistence use.

[Response to 45.008]

The text for ROP E-11 has been corrected to reflect the BLM's intent for these alternatives.

[Response to 45.009]

ROP E-11 for Alternatives B, C, and D has been edited to correct errors in presentation of three circumstances relevant to the placement of overhead powerlines.

[Response to 45.010]

The BLM considered revisions to the yellow-billed loon requirements/standards of ROP E-11, but determined to leave them as is to better assure protection of the bird. The performance-based protection measures affords the BLM the opportunity to adjust specific requirements informed by the latest understanding of the potential of impacts, including those such as the relevant comment by CPAI provides, as well as the specific proposal presented to the agency.

[Response to 45.011]

The BLM considered revisions to the yellow-billed loon requirements/standards of ROP E-11, but determined to leave them as is to better assure protection of the bird. The performance-based protection measures affords the BLM the opportunity to adjust specific requirements informed by the latest understanding of the potential of impacts, including those such as the relevant comment by CPAI provides, as well as the specific proposal presented to the agency.

[Response to 45.012]

The BLM considered the proposal for changes in text regarding ROP E-11 but determined to retain the current text. Performance-based protection measures afford the BLM the opportunity to adjust specific requirements informed by the latest understanding of the potential of impacts and a specific development proposal.

[Response to 45.013]

The BLM considered the proposal for changes in text regarding ROP E-11 but determined to retain the current text. Performance-based protection measures afford the BLM the opportunity to adjust specific requirements informed by the latest understanding of the potential of impacts and a specific development proposal.

[Response to 45.014]

The text of Stipulation K-5(e)(4) and (5) has been clarified to better reflect the BLM's intention.

[Response to 45.015]

The BLM consider the suggestion to remove the aircraft use plan from Alternative D and place it in Alternative C. The Bureau, however, has determined to retain the requirement in Alternative D, which has been designated as the Preferred Alternative.

[Response to 45.016]

Alternative D's ROP F-1 aircraft use plan would have the lessee/permittee consider the utility of using larger airstrips and aircraft. Additional language is not needed.

[Response to 45.017]

The BLM considered the comment but determined to retain the current language, which it believes better protects subsistence users needs.

[Response to 45.018]

There is no conflict between the requirements of ROP H-1 and ROP H-2. The former refers to

operational activities, while the latter addresses potential conflicts between subsistence activities and seismic activities. The BLM considers the provisions of these ROPs useful for avoiding unnecessary and unreasonable conflicts with subsistence activities.

[Response to 45.019]

The BLM considers three alternatives that would allow leasing of part or all of Teshekpuk Lake. The Bureau has determined not to include leasing under the lake under Alternative D, which is the Preferred Alternative.

[Response to 45.020]

Alternative D's ROP F-1 aircraft use plan would have the lessee/permittee consider the utility of using larger airstrips and aircraft. The requirement/standard at Stipulation K-4(g) provides some flexibility in meeting the objective of the stipulation. The text of Stipulation K-5(e)(4) and (5) has been clarified to better reflect the BLM's intention. Additional language is not needed.

[Response to 45.021]

The BLM has considered the comment regarding the appropriateness of requiring 4 years of caribou studies (Alternative D Stipulation K-5(a)) and has determined to retain the current language in Alternative D. An additional year of data provides greater assurance regarding the potential impacts and mitigation measures to reduce the potential impacts.

[Response to 45.022]

The BLM considered changing the text of the requirement/standard of ROP E-7(b), but determined that it provides suitable flexibility. Depending upon the specific proposed development, burial of pipeline may be considered and required, but only after consideration of other options to meeting the objective to minimize disruption of caribou movement and subsistence use.

[Response to 45.023]

Alternative D's ROP F-1 aircraft use plan would have the lessee/permittee consider the utility of using larger airstrips and aircraft. The text of Stipulation K-5(e)(4) and (5) has been clarified to better reflect the BLM's intention. Additional language is not needed.

[Response to 45.024]

Stipulation 32 for Alternative A and ROP E-5 for the other alternatives establishes minimizing impacts of the development footprint as an objective. As the comment notes, existing gravel pads are not counted against Alternative D's Stipulation K-11. In addition, Alternative D's ROP F-1 aircraft use plan would have the lessee/permittee consider the utility of using larger airstrips and aircraft. The text of Stipulation K-5(e)(4) and (5) has been clarified to better reflect the BLM's intention. Additional changes to the alternatives is not needed.

[Response to 45.025]

The requirement/standard of Stipulation K-4(g) provides flexibility in meeting the objective of the stipulation. The text of Stipulation K-5(e)(4) and (5) has been clarified to better reflect the BLM's intention. Additional language is not needed. The requirement/standard at Stipulation K-6 provides flexibility in meeting the objective of the stipulation.

[Response to 45.026]

The requirement/standard of Stipulation K-4(g) provides flexibility in meeting the objective of the stipulation. The BLM has considered the comment regarding the appropriateness of requiring 4 years of caribou studies (Alternative D, K-5(a)) and has determined to retain the

current language in Alternative D, since it provides greater assurance regarding the potential impacts and mitigation measures. The text of Stipulation K-5(e)(4) and (5) has been clarified to better reflect the BLM's intention. The requirement/standard of Stipulation K-6 provides flexibility in meeting the objective of the stipulation. Additional language is not needed.

[Response to 45.027]

The BLM has considered the comment regarding the appropriateness of requiring 4 years of caribou studies (Alternative D Stipulation K-5(a)) and has determined to retain the current language in Alternative D. An additional year of data provides greater assurance regarding the potential impacts and mitigation measures to reduce the potential impacts. The Southern Caribou Calving Area is a subset of the Teshekpuk Lake Caribou Habitat Area and thus is subject to the 4-year study provision in Alternative D Stipulation K-5(a).

[Response to 45.028]

The BLM considered whether to offer oil and gas leasing of additional lands under Teshekpuk Lake in Alternative D under conditions as described in the comment, but determined not to do so. Leasing was considered under all of the lake in Alternatives B and C and under part of the lake in Alternative A.

COMMUNICATION NUMBER 51

Extract from Charles Hugo

Anaktuvuk Pass resident, speaker at Anaktuvuk Pass Meeting October 9, 2007

I'm Charles Hugo from the city of Anaktuvuk Pass. I'm the city clerk. And I'm also the vice president of the tribal council. And I'm happy to comment to the NPR-A hearing and ANILCA hearing, as well as to the BLM personnel that are here.

You have four alternatives there. Last week our mayor indicated that he would prefer Alternative A as opposed to the rest of the alternatives.

When we come to something important like this, it -- it would be professional and appropriate to provide us with all the necessary information well before your hearing so we can be adequately prepared. When you come in like this and throw documents that are almost as thick as the Bible or the Koran, it -- it -- it's -- that's a lot to retain in such a short week.

We had one week to prepare for this. We had personnel from the North Slope Borough come here to give us ideas of what we should comment on, what we should say, who we should address it to, but that was one week ago.

If -- if we had this prepared maybe a year and half ago, we -- we probably could have looked at the draft, had better comments, or requests.

. . . .

It's like me going down to your -- to the USA and shutting down all your slaughter houses. If you would look at it in that perspective, that's practically what you're doing. If you're going to do exploration up in that area, you're going to affect the molting geese, the migrating caribou, the calving caribou. That's -- that's like going up there and shutting down our food resource. If -- if you look at it in that perspective, then -- then you might have a clearer picture of what were trying to say here.

That's very important to us. We -- we might be a distant ways from them, but we know that land just as well as the northern communities do. We -- we -- we've been -- we've been here for thousands of years. We -- we practically know this country inside out, like the back of our hand. We know where the caribou go, what they do, where they calve, where their reliefs are, and that area is a -- a real concentration for the caribou calving grounds, the molting geese, not to mention the fish and the -- all the waterfowl also there.

. . . .

And I -- I would think that this -- this kind of public hearing is most vital, not just before -- before you decide on what to do, but you should plan this because it's such a huge tract of land and a lot of people depend on it. People -- people's lives are at stake here, and you've got to have to take that into ratification, because it's going to affect us more or less. It certainly will affect the caribou and herds.

And then with oil exploration going on, with all this global warming going on, and you'll have more emissions from the oil wells or oil -- oil fields. It's perhaps human nature we -- we take things into -- we take things for granted, and we think they're going to be there forever, and by the time it's too late, well, what do you have left? A -- a gravel pit and some land that's no longer useful for the animals, the waterfowl, the fish.

That tells us, because you did not take no action, you know there were BLM lands within that fire. **[51.001]** That fire is 70 miles long and 20 miles wide. And that's a lot of lichens. Lichens take up to 50 years to revitalize. You need to concur and do a little more intense research on the lands, how you affect the water, plants, the -- the plants, the life, the grounds, the seasons, you need to take into consideration, because all these explorations are affecting us one way or another.

We've already felt it. Our caribou herds are gone. They've been gone since the pipeline came across. We used to have the Porcupine herd come this way until the pipeline came through. They are no longer here. And now we're seeing you up in the Teshekpuk area wanting to do the same thing. And then you're talking about building pipelines seven feet above the ground.

That -- that -- that's a real important aquatic region you're talking about. That's a very sensitive area. That's -- that's very sensitive. It -- it -- it has a lot of history too. It's got a placement, it's not just another marshy land you're talking about here. If -- if -- if I was some guy from New York and I went up there, I would pretty -- I would -- I'm pretty sure I would say, "This is nothing but a marshy good-for-nothing land." But when you live here, that's where -- our lifeline. It -- it affects us, and we're -- we're trying to voice our issues and implicate our concerns within a short notice. It's -- it's --if -- if -- if -- if it weren't for such a short notice, I'm pretty sure we would have a little more people that would have commented on your draft here. I -- I just took a brief look at it.

[51.002] That's a really complicated draft you have there. If anything, maybe you can put some of your words in laymen's terms so some of these people, or whoever reads it, can understand what you're trying to say. If you make it too sophisticated and complicated for -- for the common folk to read and not understand, that's -- that's another impact there you have to look at. The impact of not knowing what the impact is going to be. That's a real impact.

....

[Response to 51.001]

Additional analysis has been added to both the vegetation and terrestrial mammals discussion of the cumulative impact analysis to address the potential impacts of tundra fires that may result from climate change.

[Response to 51.002]

The Executive Summary and the newsletter that was issued at the time the Draft IAP/EIS was released provided a shorter and more simplified look at some of the basics of the Supplemental IAP/EIS.

COMMUNICATION NUMBER 52

From Raymond Paneak

Anaktuvuk Pass resident, speaker at Anaktuvuk Pass Meeting October 9, 2007

My name is Raymond Paneak. I'm a ASRC Board member. I represent Anaktuvuk Pass and other -- seven other villages.

Thank you for letting me talk this evening that -- anyway that NPR-A North -- Northeast area for leasing, what you've got to remember, our subsistence is very important, no matter where you -- where you are at, Atqasuk or Nuiqsut or Barrow or here, we use the same caribou herd in that Teshekpuk area up here on the map. The same thing, we use those like the coastal people. They migrate from there to our area and go winter south of us. Very important that the calving area right by Teshekpuk Lake there should be no allowed for oil drilling and disturbing the caribou herd there. Also caribou migrate route from that area through Anaktuvuk roads, Chandalar Lake area.

[52.001] During the fall migration, there shouldn't be no activities. Also spring migration from south, if they start going down to the -- towards north, there should be no activities in the way of travel north and south.

Also, it's very important for the waterfowls, ducks, geese, what -- are their food we use like the other villages. If I could just finish off with -- in my language that -- if you allow me in my language a little bit. (Speaking in Iñupiaq.) Thank you.

[Response to 52.001]

The BLM considers that the stipulations and ROPs provided in the alternatives sufficiently mitigate potential impacts to caribou movement.

COMMUNICATION NUMBER 53

Excerpt from Paul Hugo

Anaktuvuk Pass resident, speaker at Anaktuvuk Pass Meeting October 9, 2007

My name is Paul Hugo. Born and raised here in Anaktuvuk, living off the caribou since an infant, living off the herd that does its calving within your alternative areas. This is food on the table. With these alternative -- alternatives, this community will not benefit with your oil and gas lease sales. We've never benefited from your NPR-A impact funds, which is so crucial to us. You're impacting our food that we put on the tables this time of year.

This -- the alternatives will -- B, C, and D will either alt- -- alter or misplace the caribou herd. Currently they are within that location, if you take a look at the ATF and the satellite-collared caribous. So there is no real time frame you could give for your exploration.

6 With the fire that we've had since July, that's a real question mark. You look at your maps a little closely -- like, I had a chance to look at the land map in the tribe office, there is some BLM lands within that location. **[53.001]** Your EIS document reports really doesn't state -- say anything about fire or smoke within the NPR-A. You need to take another look at your EIS on giving such a report without no real documentation. 220 acres is so much, and it could be bigger, especially if it started from lightning.

....

I am unemployed and depend heavily on this herd, especially this time of year. If you walk around the community years back, you would see a lot of caribou -- caribou jerky hanging out in the yards. We don't see that.

We paid \$6.40 a gallon for regular gas up here, and you want to do oil and gas exploration in NPR-A. It will not benefit this community. We are within 160 miles from Prudhoe Bay, the biggest oil field. Why are we paying \$6.40 a gallon? And you want to do some lease -- oil and gas leasing within the NPR-A. I say if you come back here in ten years from now, I'll say we still got \$6.47 -- .40 a gallon, and we did not benefit from your oil and gas lease within the NPR-A. These are areas that you need to look further into.

Thank you.

[Response to 53.001]

A section has been added to the Wildland Fire section in Chapter 3 addressing smoke management and additional analysis has been added to Chapter 4. BLM obtains and complies with applicable Open Burning Permits issues by ADEC as described in their Open Burning Policy & Guidelines (<http://www.dec.state.ak.us/air/ap/docs/obrguide.pdf>). In addition, BLM participates in the Alaska Interagency Coordination Center to address smoke issues from wildfires.

COMMUNICATION NUMBER 54**From Brian Person****Wildlife Biologist, North Slope Borough, speaker at Barrow Meeting September 24, 2007**

Anyway, I'd like to thank the BLM for the opportunity to provide testimony on this supplemental EIS. My name's Brian Person, I'm a wildlife biologist for the North Slope Borough and it's within that context that I'm giving this testimony.

I oppose Alternatives B, C and D and support the no action Alternative A which is a compromise that was derived in 1998 and allowed surface occupancy in all but approximately 858,000 acres of this -- of the 4.6 million acre Northeast NPRA. I'm aware of no new combination of mitigation measures that can afford adequate protections to the resources that utilize the habitat around Teshekpuk Lake. Additionally, [54.001] there's no comprehensive plan or oversight group in place that will -- that has or will identify data gaps and prioritize studies necessary to ensure oil and gas development proceeds in a manner that will protect the wildlife and subsistence hunters that rely on this area.

The landscape surrounding Teshekpuk Lake is a calving grounds for the Teshekpuk caribou herd. This herd is perhaps the most important herd to subsistence hunters on the North Slope and has sustained families from all villages on the North Slope. [54.002] The herd is naive, that is, it has been exposed to little to no industrial activities. This is an important point for several reasons. First, 50 to 60 percent of the Teshekpuk caribou herd over winters on the North Slope, which will place them in contact with oil and gas activities year round. No other caribou herd on the North Slope has experienced such cumulative contact and it is not known how the herd will react to such chronic contact.

Second, [54.003] caribou react strongly to oil and gas infrastructure when exposed to it for the first time. The process of habituation to infrastructure is not well understood and currently there is no study, nor peer reviewed study plan, to evaluate this behavior. It's generally accepted that for the first two weeks of life cow, calf pairs avoid infrastructure by approximately two and half kilometers.

The Central Arctic herd has been in contact with development for many generations -- several generations of the caribou, yet the response by cow, calf pairs has not changed. This is a particular concern to those dependent on the Teshekpuk caribou herd because cow, calf pairs must travel between one of two narrow corridors to access important insect relief and summer foraging habitat. Any infrastructure situated within one or both of these corridors could act as a barrier to this important class of caribou.

Lease stipulations designed to immiti -- mitigate impacts of oil and gas development to caribou and waterfowl are synergistic. Ideal pipeline and road placement for caribou would be near lakes on which molting waterfowl rely. Thus ideal infrastructure placement for each of these species effectively cancels one another. That is why, in part, land and wildlife managers came to the difficult compromise that they did in 1998 and still allowed leasing within the vast majority of Northeast NPRA.

[54.004] In 1998, the Record of Decision required that a research and monitoring team be formed. This team made significant progress yet their results have not been implemented nor have they been conveyed to the RMT's successor, the NSSI. The NSSI, while conceptually well conceived, has not made the progress necessary to provide suggestions to the BLM, to the State of Alaska, and to the North Slope Borough regarding data -- data gaps and research priorities.

Additionally, it is unclear why the NSSI has progressed on only two -- one two projects funded by their organization without including the advice of the Science Technical Committee. I believe that without progress towards the requirements outlined in the 1998 plan leasing additional lands and allowing development within this landscape is not prudent.

As the mayor just suggested, we have heard some suggestions to allow a phased leasing approach under Alternative D. **[54.005]** I believe that this would be a poor approach because each of these seven lease tracts contains different assemblages of wildlife resources. Information gathered and lessons learned from a phased approach are likely not directly relative to the other large lease blocks because it is nearly impossible to replicate a landscape. Thus while intuitively it makes sense to follow the mantra of adaptive managing -- management using a phased approach, it may actually do more harm than good in the end.

[54.006] Finally, the SEIS describes relative differences of cumulative effects between the different alternatives rather than the necessary quantitative analysis required to evaluate each alternative if the BLM is to make responsible, long-term decisions regarding development in this important region.

There's available data that can be utilized by the BLM to begin quantitatively evaluating the impacts of Alternatives B, C and D and these should be utilized in a series of GIS mapping and population modeling exercises prior to abandoning the 1998 Record of Decision which allowed leasing and sur -- surface occupancy in the vast majority of the NPRA, Northeast NPRA.

Again, I'm opposed to Alternatives B, C and D and I support the no action Alternative, Alternative A. Thank you very much for the opportunity to present this testimony.

[Response to 54.001]

The BLM is responsible for ensuring that there is appropriate scientific baseline data and analysis to responsibly manage lands within the planning area. It continually assesses its need for such data and analysis. For further discussion of BLM's research and monitoring activities and why the agency considers the RMT unnecessary to reinstate, please see section 4.2.3 entitled, "Research and Monitoring Consultation and Coordination."

[Response to 54.002]

This issue is addressed in the text of Alternative A in the DSEIS and referenced in the text for Alternatives B, C and D. An addition to the text of the cumulative effects sections for mammals now directs closer attention to this issue.

[Response to 54.003]

The DSEIS acknowledges the cow/calf displacement phenomenon and the importance of the movement corridors east and northwest of Teshekpuk Lake, as well as the potential for negative population level effects to the TLH as a result of these and other impacts from oil and gas development. Special lease stipulations have been included in Alternative D to mitigate adverse impacts in those movement corridors. The BLM recognizes the need for monitoring studies to look at impacts to caribou and other wildlife not habituated to development as well as monitoring of many other issues, and discusses monitoring in section 2.6 of the DSEIS and also now addresses it in section 4.2.3 of the FSEIS.

[Response to 54.004]

The BLM is responsible for ensuring that there is appropriate scientific baseline data and analysis to responsibly manage lands within the planning area. It continually assesses its need

for such data and analysis. For further discussion of BLM's research and monitoring activities and why the agency considers the RMT unnecessary to reinstate, please see section 4.2.3 entitled, "Research and Monitoring Consultation and Coordination."

[Response to 54.005]

The BLM will consider the scientific relevance of phased leasing approaches. Note that under the Preferred Alternative, none of the seven large tracts would be available for leasing for 10 years following the signing of the ROD.

[Response to 54.006]

Discussion is provided for each resource and use of the affect of choosing one alternative rather than another. Given the relatively small amount of total cumulative impacts that are likely to be attributable to the alternatives considered in this Supplemental IAP/EIS, more detail analysis, even if it could be arrived at, would be of relatively little value for decision making. Given that the location of oil is unknown, spatial analysis such as is suggested would be highly conjectural and of minimal use analytically.

COMMUNICATION NUMBER 55

From Geoff Carroll

Barrow resident, speaker at Barrow Meeting September 24, 2007

Well, thank you for allowing me to comment on your supplemental IAP/EIS. My name is Geoff Carroll, I'm the area wildlife biologist for the Alaska Department of Fish and Game with 30 years of experience working with wildlife on the North Slope. Today I'll be speaking as a private citizen and as a resident of the North Slope.

I felt that one of the most important statements made at the North Slope Borough Oil and Gas Summit and reiterated again tonight was made by Mayor Itta when he said that oil development has been very good for the North Slope and that it is important for it to continue. It is also very important to protect important wildlife habitat and subsistence hunting areas. He said it isn't necessary to drill every last pool of oil and that there are some areas that are so important for wildlife or subsistence hunting that they shouldn't be developed even if there is oil present.

I agree very strongly with this and feel that the area around Teshekpuk Lake is a prime example of an area that should not be leased and developed. The area around Teshekpuk Lake is nationally and internationally recognized as the most important waterfowl molting and nesting area in the circumpolar arctic. It contains crucial calving, insect relief and migratory path habitat for the Teshekpuk caribou herd.

For these reasons, BLM should adopt the stipulations of Alternatives -- Alternative A that withhold crucial wildlife habitat areas from leasing and surface development. I feel that, you know, the -- Alternative A was basically developed back in 98 and 99 and maybe we could look through the prescriptive stipulations compared to the, you know, more -- newer ideas on stipulations and that could require some -- some -- could result in some improvement on the stipulations but basically we need to stick with excluding the crucial wildlife habitat areas from leasing.

Most people and groups that commented on the 2005 Amended IAP/EIS agreed that this area is too important as a wildlife habitat for this area to be leased. Mayor Itta has made many strong statements expressing the opposition of the North Slope Borough to leasing the area. Most subsistence hunters, biologists that have worked in the area, the U.S. Fish and Wildlife Service and Environmental Protection Agency, the Wildlife Society, the Western Arctic Caribou Herd working group, you know, in addition to the conservation groups, all spoke or wrote in opposition to leasing that area. In public meetings I attended over 90 percent of the people that testified spoke against opening that area to leasing.

In spite of the opposition, BLM has continued to insist on leasing the area in what appears to be very top-down decision making. Of course, this came about when the Bush Administration came into power and basically it appeared that, you know, the word was we have to lease all these areas and that's been kind of the bottom line, in spite of all of the opposition to it, it's basically come from Washington, D.C., that all these areas are going to be leased.

Among Alternatives, Alternative D has some -- some good mitigative measures, such as the ones that prohibit permanent oil and gas facilities in habitat important to caribou calving and movement, but it would also open the crucial habitat areas to leasing. The part of the plan that divides the area north of the lake into seven large lease blocks and limits the area of permanent surface disturbance to 300 acres per lease block looks good on paper, but that means that there could be at least three drill sites per block and a total of over 20 in the area north of the lake. If

these drill pads are constructed and connected with pipelines, power lines, roads, and landing strips, it will create a network of development north of the lake that would hinder caribou movements to and from insect relief.

Brian did a very good job of outlining many of the problems that leasing in that area could cause with the caribou. One thing that he might not have hit on as much as the others is the effect it has on the caribou trying to get to and from their insect relief areas. If, you know, we do end up with a network of pipelines, roads, and power lines north of the lake there, it could be very detrimental to the caribou. We always talk about the importance of calving areas but I think that insect relief areas are just as important, the caribou have to be able to get there, the entire herd gets there. It's -- you know, they all get up to the coastal area north of the lake, but they also have to be able to move away from the coastal area when -- when the insect harassment isn't as intense. And that's what we've seen in other places that a harassed caribou will go through almost anything, I mean, everybody kind of stands in amazement and sees them run -- run right -- you know, sees a caribou acting kind of crazy and running right past them or through their camp or, you know, going right -- under and over pipelines but what you don't see is on the days when it -- the insects are less intense and they have to get back to their feeding areas, they aren't as highly motivated and that's when a lot of these structures seem to affect the movements of the caribou getting to and from their insect relief areas. I've heard several times from BLM that it's necessary to lease the area around Teshekpuk Lake because there may be lots of oil there. At the oil and gas meeting I heard a knowledgeable individual state that there probably isn't much oil up there so it should be leased because it won't result in as much damage as we think. I certainly don't know if anyone really has a good idea about the quantity of oil in that area but I guess I would take the opposite approach and say that if there isn't much oil up there, it isn't worth risking one of the most important wildlife habitat areas in the circumpolar north. If there is a lot of oil there, then there's certainly going to be significant impacts so it really shouldn't be leased.

[55.001] Another protective measure proposed in Alternative D is to protect -- is to create protected areas around the lakes that waterfowl use for nesting and molting. Well, Brian actually covered that very well saying that they're kind of mutually exclusive. The -- any measures other than not leasing in the area that would help one species, that would help the geese, would push the development onto the dry areas that the caribou need to use. That area north of Teshekpuk Lake is a very marshy area with very -- you know, with -- the dry areas are few and far between and it's really important for the caribou movements if you start putting infrastructure on those dry areas to get them away from the geese, you're going to end up affecting the caribou and vice versa.

It's often stated that we need to lease the areas so that they can be explored and can be determined what the petroleum resources area. That's one of the most frustrating and irritating things about this management system is that exploration can only come after leasing and once an area is leased, and adequate oil is found, the oil companies have a contract to develop no matter what the other land values are. It was stated at the oil and gas meeting that BLM can actually stop development after leasing if studies indicate that it is warranted. However, experience has shown that it is very unlikely that they will. The example of BLM approving the ConocoPhillips request to drill in the Fish Creek subsistence area is a clear example of this.

Another feature of Alternative D and in oil development in general is advocating the small footprint. I heard this held up as a great advancement in oil development several times at the oil and gas summit. Personally, I think it's overrated and may be misguided. We certainly don't want to go back to the Prudhoe Bay style of development but I think the drill pads have been made to small in some cases that it could reduce safety factors and probably hurts more than it

helps. Once it is decided that a drill pad is going in, it really doesn't make much difference whether it covers 10 acres or 20 acres that are covered with gravel. In either case the area is so small that it's minuscule – it's a minuscule proportion of the total area. The real impact is the fact that the production facility is there with its attending network of pipelines, roads, power lines, and risks of an oil spill. Making the pad smaller doesn't make any of that go away. What it does do is make it harder to move things around and probably increases the chance of an accident. If there is an accident, it would make it harder to clean it up. **[55.002]** It was stated at the conference that one of the reasons that there's so many flights to and from Alpine -- so many more flights to and from Alpine than have been promised, is that their pad was so small that they couldn't store building materials there. If you make the pad a little larger to reduce the number of flights, that seems like a good trade off. I would recommend rethinking this trend towards smaller drill pads in future development.

I found the information in your supplement very informative. **[55.003]** One thing I did notice though is that the map and information on musk oxen is dated. The map indicates that the best habitat for musk oxen is in the hills or in riparian habitat. The fact is that some of the healthiest musk ox groups have been near the coast in places like Beechey Point or Fish Creek. I am mentioning this now because this summer a group of musk oxen moved into the area north of Teshekpuk Lake. If there is seismic work planned for that area it will be important to be in communication so the animals can be avoided. The strategy for musk oxen to survive the winter is to fatten up in the fall and grow their incredibly effective insulative coat and basically stay in one small area all winter. It would be very detrimental for them to be pushed around by a lot of activity.

In summary, I strongly recommend that BLM honors the wishes of the local government and listens to the recommendations of professional biologists to protect crucial wildlife habitat in the Teshekpuk area. Don't lease the important caribou calving, migration, and insect -- insect relief areas and the important waterfowl molting and nesting areas around Teshekpuk Lake. It's quite possible to have petroleum development and healthy wildlife populations on the North Slope, but only if you protect the crucial wildlife habitat. Thank you.

[Response to 55.001]

It is correct that this trade-off exists, and the best way to deal with it would have to be determined on a case-by-case basis if oil is found in that area and development is proposed. Within the area affected by Lease Stipulation K-11 for Alternative D, those corridors between lakes not affected by the restricted surface occupancy (RSO), excluding pipelines, requirement are often 1-2 miles in width. This provides room both for adjustment of development proposals to better mitigate impacts to caribou and for caribou to move around developments and use drier habitats on either side of them. Caribou will readily move through marshy areas (including those within the RSO's) and may prefer movement through some marshy types over movement through tussocks, but perhaps depend more on the drier habitat types for foraging.

[Response to 55.002]

The IAP/EIS is cognizant of this concern. ROP E-5 which applies to Alternatives B through D states: "Where aircraft traffic is a concern, consideration shall be given to balancing gravel pad size and available supply storage capacity with potential reductions in the use of aircraft to support oil and gas operations."

[Response to 55.003]

The Affected Environment section for terrestrial mammals has been revised to include discussion of a more recent analysis of potential muskox habitat and an update on muskox distribution in the planning area.

COMMUNICATION NUMBER 56

From Robert Edwardson

Barrow resident, speaker at Barrow Meeting September 24, 2007

Good evening. Yeah, I want to thank BLM for coming here and I know this is not the first time you're here, it's probably the -- I don't know, maybe how many of the statement we have ever made over and over, repeatedly and some of you are new faces. Welcome to Barrow. This is not going to be your last time hearing these things. But my biggest concern is that I -- I -- let me introduce myself again first. This is Robert Edwardson, Senior. Presently I'm employed by a cooperative agreement by the Iñupiat Community of the Arctic Slope, Alaska Department of Fish and Game, the subsistent division and BLM. We are doing caribou harvest survey and it's still ongoing, 50 percent done. But my main job that I have been doing for the last few years, like seven years, I've been with a seismic company doing subsistence observer. Also I've been doing as a marine mammal observer off vessels until we filed the lawsuit.

Anyway, my biggest concern is I've been around Teshekpuk area, I went through a spec job this last -- a year winter -- I mean last winter, year before, and then we did a ice experiment, built a (ph) seismic job that we did last --last winter. And my biggest concern is that this area is very critical, we have a lot of game that lives there year around, the caribou's there year around, and we have a lot of waterfowl that come and nest within the area every season. And like George was saying, some of the game was, you know, scared away, with the waterfowls. And, you know, all these activities that has been occurring since I started working and the first time I ever started working in the oil field was in 69 and that was for ARCO, and some of what George had said was very true, of what the industry had done at the time to make -- to make it look good. That they herded the caribou there with their fancy equipment and anyway today they don't do that. I know they don't do that because we have all these meetings and then we have these subsistence observers now and I thank the government for that. And it's been a long time and I think we have a lot to gain and we also have a lot to lose and that is our biggest concern as a subsistent human beings that we live on our subsistent way of life. And at times it' not easy.

Today it's kind of easy because we can just walk to the gas pump and turn it on and -- which is very -- very nice, but my biggest concern I've observed all these years, the industry coming up here, you know, selling these leases and now I -- what my --what I would like to see what I want for my people is that I want a performance bond within the lease sale that you and when all these lessees (ph) buy these leases, we want a portion of that right now. We want 10, 20 percent of the lease monies, we want a bond, that's what I would like to see. I'm tired of worrying about our people and asking for assurance from the industry for -- to be assured that if they do have a bad incident, that we will be covered. We know it might not cover the whole subsistent way of life, but at least they are -- that we have some -- something to fall back to, like the performance bond. And I think we need to make that a requirement to all the lessees for all of our scientists in our Borough, you know, we pitch in here and there just to try to meet the industry and to satisfy what they're looking at and then our government has a hard time and we are taking it from, you know, taking it from our budgets and having budget shortfalls and I think that's kind of ridiculous. And then we're -- we're the ones that's paying for it. As socially -- social impacts are very heavy, the -- the activities are so fast, ongoing so fast, our youth, you know, our youth is being misled because the social changes are so fast. I know we can't hardly do anything about that but these impacts are true and I watch it over my children, you know, it's a very heavy impact that us Native people do. I don't know how else to say it but I do want to see a performance bond within that lease sale, that so much of this lease money goes to a performance bond and I think we need to look at that very seriously. If -- because you want to go into our dinner table, you know? That's exactly what they're doing is they're going on our

dinner table and -- just for oil extraction and, you know, it's -- I don't know how else to say it anymore, we've been repeating ourselves for so many years, but that's what I see is locking in the government system is that performance bond, that the industry needs to ante up first before they can even set their foot in there.

[56.001] And also the caribou, I have done some research in the past, and I dug into the USS Cutter Bear's ship logs, and I had found actually there was 24 caribou leases, caribou herd leases, that the federal government had honored in the name of reindeer, under the Reindeer Act. Those -- there's 24 leases that comes from all the way from northwest all the way to the Arctic, and there's 24 of them, and I would like to see like another bond, well the Act is there in place, the Reindeer Act, it's in place, I think BLM should utilize that and then honor whoever the leaseholders are on these reindeers to start our reindeer again in the Arctic. Because these -- we used to be reindeer herders, I think we need to get back into reindeer herding because all this activity that they're planning to do, which we've been saying no and no and no for many years, all these alternatives, and then -- and what do they give us? We never really get much, we only get -- the Borough gets only one half of one percent, you know, that's -- and they call that a tax base, that's not a tax base, it's -- to me it's a highway robbery. Even though at the time it might have been a good idea, but today it's -- it's kind of sad. And I just want to thank the government for coming here to Barrow, they've always been -- but I -- I also would want you to know that it is proper for a government entity to notify the community that you are coming, because we do have some concerned people, because **[56.002]** in my surveys that we are doing at the caribou harvest survey, there's some very interesting comments some of our wise people are saying about our caribou. And it's -- it's something that BLM needs to look at very carefully is that the subsistent division of the Alaska Department of Fish and Game I think they should look at that very carefully what this Seve Patterson (ph) has been doing. And I'm pretty sure you guys are aware of him, but if you're not, you can probably contact him through Geoff Carroll. And anyway, once again, I want to thank you folks for coming and we -- I'm pretty sure this is not going to be your last time. Thank you.

[Response to 56.001]

Reindeer grazing is not within the scope of this Supplemental IAP/EIS, nor was it within the scope of the Amended IAP/EIS for the Northeast NPR-A that is presently being supplemented.

[Response to 56.002]

The BLM is funding, through a cooperative agreement with ADFG, the surveys mentioned here. These are expected to be a valuable part of the baseline information BLM is collecting in preparation for any oil/gas development that may occur in the NPR-A.

COMMUNICATION NUMBER 57

From Frederick Tukle

Barrow resident, speaker at Barrow Meeting September 24, 2007

For the record, my name is Frederick Tukle, Senior. For the -- for 17 years I lived in the Nuiqsut area and pretty close to a 15 year period I've also lived in the Barrow area. I'm going to be speaking as a subsistence hunter. And then some observations I made while I was doing my hunting activities between Barrow and Nuiqsut. When I think about BLM leasing the NPRA area, particular in the vicinity of the Teshekpuk Lakes, one of my strongest concerns I have regarding these lakes is when the facilities are built in the area. I'm very concerned about the flare pits that we see all the time and then -- but I have to make a comment about how I learned of what I'm about to say.

In the early 90's when I went whaling in the Nuiqsut area around Cross Island, as we were transporting meat that time from Cross Island to Endicott, Endicott Island in particular, this got my attention one time. As we were hauling our meat, we were in a -- within a -- we checked this out in our GPS, when we reached within a three mile area to Endicott, we start noticing these -- I don't know what you call them, gas -- gas -- I think gas was splattering from this flare pit and that they were about this size. When we got within a two mile period these gas splatters were getting bigger. When we finally reached within a mile facility surrounding the island we noticed that this gas was totally surrounded Endicott Island.

[57.001] With regards to the Teshekpuk Lakes, when I look at something like this, one of the things that I am aware about is the underground rivers that are interconnecting these lakes. And I'm also aware that the oil industry tends to build these flare pits out over lake areas and when I observed these flare pits as they're on -- sometimes they're on for several days on end, and I'm very concerned about that. And then I have to wonder where these underground rivers are and then when gas is leaking like that, I wonder where it's going to pop out when it reaches these underground rivers. But that's one of my very strong concerns I have regarding the Teshekpuk area. How I learned of these underground rivers was with our elders. I don't have scientific proof of these underground rivers, but I seen one one time during a construction project. When I think about that and then I think about the fish spawning in the area, I realize that the fish that are just born are most susceptible to these kind of gases and then -- that's one of them that I'm very concerned about. **[57.002]** The other one, another concern that I have is I've watched ConocoPhillips before made buffer zones in the river areas. One of the -- myself I would request a five mile buffer zone with places like Ikpihpuk or anywhere that subsistence -- where subsistence people go hunting for their fish, for the geese, for the caribou. And then for most of us Inupiat people, that river's our only channel to these areas. That that would be my other wish is that you guys create a buffer zone for the river systems.

I also had a chance to observe seismic activities during this whaling time too in the Cross Island area in the early 90's, late 80's. What I want to share is what we were watching that time, we were starting to see birds and ducks and geese that we never seen before and we come to realize that -- that we were looking at Canadian birds and this was directly due to the seismic operations that were happening in Canada, that they were driving these birds to the Camden Bay and Cross Island area. And those are what's pressing on my mind when I think about these flare pits, I have to wonder what kind of health effects these have on our people. You're going to be building these facilities right in the vicinity of -- for example, Aklavik (ph), but I notice 20 miles south of Barrow that I realize that these facilities will be built, there's no question about it. So with regards to the newborn animals, I believe they are most susceptible to these toxins and then -- but those are the concerns that I have with regards to the residents of the North

Slope and the particular the fish, that that are on the Slope. Thank you.

[Response to 57.001]

Flaring of natural gas would be conducted under the conditions set forth in the ADEC air quality operating permit. Operators would be required to meet ADEC's requirements for air emissions, including obtaining construction and operating permits. All BLM activities (whether directly or through use authorizations), must comply with all applicable air quality laws, regulations, standards, increments, and implementation plans. Waterbodies located in proximity to flaring activities are not expected to be impacted from these emissions.

[Response to 57.002]

Lease Stipulation K-1 under Alternatives B, C and D describe the various setbacks (what you refer to as buffer zones) located along the rivers in the Northeast Planning Area. These setbacks range from 1/2 mile to 3 miles depending on the river/creek.

COMMUNICATION NUMBER 58

From Robert Suydam

Wildlife Biologist, North Slope Borough, speaker at Barrow Meeting September 24, 2007

Good evening. My name is Robert Suydam, I'm a wildlife biologist with the North Slope Borough's Department of Wildlife Management. I've lived in Barrow almost 18 years, I spent a couple summers on the North Slope before that. Lon, I'd like to welcome you back to Barrow, you were here just a few days ago and your colleagues, thanks for coming to Barrow to listen to folks opinions and ideas about how to deal with the Northeast planning area of the NPRA.

[58.001] I'd first like to second the and support the Mayor's request for an extension of the comment period. Price just mentioned that he just heard about this meeting today, this morning. The Mayor just mentioned that he just got his flyer in his mailbox here in the last day or two. I haven't gotten mine. This is an important issue and people up here need to be given an opportunity to comment and given that whaling is about to start and people -- it's such an important component of the culture and what's happening here in Barrow especially, the people need to be given adequate time to think about and to read the large supplemental EIS that you've drafted and so it's only appropriate that the comment period be extended. My personal opinion is that as the Mayor mentioned for the North Slope Borough's opinion, you know, essentially that the area around Teshekpuk needs to be left off limits to leasing. Essentially this position is what BLM decided in 1998 with their Record of Decision that that area as many -- as everybody has said before me, is incredibly important to caribou, to molting geese, to other subsistence resources, and as importantly, it's important to people. There are quite a few people that use that area for subsistence but as importantly the resources that use that area go to other places where people then use those resources. So making a decision about the area, especially around Teshekpuk, is not just a local decision, it affects everybody. Price mentioned that the Association for Village Council Presidents down in Bethel and the Yukon Delta are incredibly concerned about this because of their use of brant geese and so many of those birds come to the Teshekpuk area to molt every summer. So I think that BLM should make a decision that really parallels what the decision that was made in 1998. And I think that, you know, one because the area is so important for resources and people, but also the information that's been gathered in that area since 1998 has been minimal. **[58.002]** It hasn't addressed the questions that are of looming importance that everybody talks about, it hasn't addressed the issues of how geese, molting geese in particular, are going to react to development in this area. There's no other place certainly in Alaska's Arctic that is anywhere like what's around Teshekpuk. That geese from all over the Arctic come here to molt and then fly to many different places. So the ability to lease the area, to develop the area, and not impact geese is incredibly difficult, if not impossible, that people don't know how to do that yet.

[58.003] Brian and Geoff and other folks mentioned caribou too and how important this area is for caribou. There hasn't been additional information gathered that will provide information on how to mitigate or eliminate impacts to that herd. The decisions that BLM and the federal government make about areas such as Northeast NPRA, decisions really need to be based in science, that information is needed. **[58.004]** In 1998, in the Record of Decision, BLM formed the research and monitoring team to provide advice on -- and set priorities for research and monitoring tasks that needed to occur in the northeast planning area. Unfortunately that team was disbanded, I was a member of that team. It was disbanded about 2001 or so and BLM decided they wanted to take a broader perspective and they wanted to look at the impacts from oil and gas activities to resources across the North Slope. And so BLM, especially the former director, Henri Bisson, pushed the idea of this North Slope science initiative. That was formed

in 2002 and in the five years that it's been in existence, very little has been done to help data gaps. Very little has been done to help us understand how to mitigate impacts from oil and gas activities, especially in this area around Teshekpuk that's important for geese and caribou.

[58.005] So BLM needs to have this independent advice from a group of scientists that can look at the topics independently and provide advice on how to fill the data gaps, how to -- how to go about monitoring. So I recommend to BLM that you form something like the research and monitoring team again so that you can get independent advice on how to deal especially with the northeast planning area, but with other parts of the national petroleum reserve as well. NSSI is slow in coming up to speed and it's unlikely that you'll get much advice from them here in the short term and you need it desperately. Given that this process for leasing, NPRA is really going on 10 years, and very little information has been collected. There's a great need. BLM has that need, the people here on the North Slope have that need, the organizations up here want to have the information that can be used to help guide decisions.

[58.006] The mitigation measures that BLM uses in the northeast planning area in many cases aren't based on science, they're based on common sense. The people think that a certain size buffer zone around rivers or a certain stipulation or a required operating procedure should work. But in many cases there are no data to support that these mitigation measures are actually effective. So BLM needs to try to sort that out, okay? We need information about how to make these -- or whether these mitigation measures work and if they don't, then we need to figure out how to modify them so that they do work. **[58.007]** As part of that, we need to understand whether oil companies that are operating within the NPRA are actually complying with the mitigation that's in place. If they're not complying, then how can we measure whether the mitigation's actually working? It seems like there's very little compliance monitoring by BLM on what's happening out there. Sure, occasionally somebody goes out and checks if seismic operators are doing what they're supposed to, but there isn't a great deal of compliance monitoring and that should change.

[58.008] 24 BLM has been moving away from what's been termed prescriptive mitigation measures to what's being termed performance based measures. And as I mentioned earlier, the mitigation measures in general aren't based on science, they aren't based on hard -- hard data, to say whether they work or not, and because there's not a lot of compliance monitoring, I'm greatly concerned that performance based mitigation measures have -- provide oil companies an opportunity to fudge things a little bit, if you will. Okay? It's almost like the fox guarding the hen house. So there needs to be independent peer review of performance based mitigation measures and the results from those mitigation measures, if BLM ends up using them, the results also need to be peer reviewed. Okay? Need to really understand whether these things work or whether they don't.

[58.009] I'd also like to suggest that BLM require oil companies to do erosional studies especially in any of the coastal areas. That, as I'm sure you've heard in the preparation of the EIS, they've found that the coastal erosion is increasing rapidly. BLM has required that if the area north of the lake is leased, that there would need to be caribou studies and molting geese studies. But as importantly, there needs to be an understanding of erosion. You don't want to get in a position of similar to the J.W. Dalton well where it starts falling into the ocean. So having a -- taking a long term look at erosion is important. **[108.010]** It's probably worthwhile to consider reference areas throughout the NPRA as well. Areas that are never leased but can be available for comparison with areas that are leased.

I will provide additional written comments later on, but again, I'd like to emphasize the need for BLM to leave the area of Teshekpuk Lake -- leave it off limits for leasing at this point. That

that's the right decision based on the limited information that BLM has at this time and because of the importance of that area for many different resources and for people. So thanks again for coming to Barrow.

[Response to 58.001]

The BLM considered the request for extending the comment period to 90 days, twice the period required under NEPA, and extended the comment period to 74 days.

[Response to 58.002]

The BLM has required in the Supplemental IAP/EIS Preferred Alternative study requirements that will be completed prior to any authorization of construction of permanent facilities within the goose molting area.

[Response to 58.003]

Since 1998, the BLM in cooperation with ADFG and NSB has continued to collect data on caribou movements and distribution in the planning area. Ongoing analyses of those data are intended to further inform us on how the caribou use different habitats under different conditions. Nonetheless, the BLM agrees that further work needs to be done. The need for monitoring of these caribou issues is addressed in section 2.6 of the DSEIS. Both research and monitoring are also now addressed in section 4.2.3 of the FSEIS.

[Response to 58.004]

The BLM is responsible for ensuring that there is appropriate scientific baseline data and analysis to responsibly manage lands within the planning area. It continually assesses its need for such data and analysis. For further discussion of BLM's research and monitoring activities and why the agency considers the RMT unnecessary to reinstate, please see section 4.2.3 entitled, "Research and Monitoring Consultation and Coordination."

[Response to 58.005]

The BLM agrees that adopting better protective measures if other protections prove inadequate is important and considers the performance-based provisions of its stipulations and ROPs as a means to adapt mitigations to best meet any potential short-comings.

[Response to 58.006]

The BLM monitors lessees' and permittees' compliance with an approved plan of operation and with the requirements of law, regulation, lease stipulations, and permit terms and conditions. This monitoring is thorough and sufficient. For example, for winter exploration work, the BLM staff conducts compliance monitoring during the construction of ice roads and pads to assure that they are built in conformance with the approved plan and relevant requirements. During the drilling phase, a petroleum engineer is on site for many weeks to assure compliance with all drilling requirements and other monitoring is undertaken to ensure the adequate condition of the ice pads and roads and that procedures are in conformance with the plan and relevant requirements. As the drilling operation is removed at the end of the drilling season, monitoring occurs to ensure that clean up is conducted properly. In the summer additional monitoring takes place to assure that residual debris is removed in compliance with the plan and relevant requirements.

[Response to 58.007]

The BLM agrees that performance-based stipulations and ROPs may require closer monitoring of compliance and results than prescriptive stipulations.

[Response to 58.008]

The USGS has an on-going study of coastal erosion that should address questions brought up in the comment. The studies that will take place by companies prior to development are the more appropriate time to address this issue when locations of proposed development are known.

[Response to 58.009]

Studying comparable habitats and areas that are developed with those that are not developed to compare change over time is a worthy undertaking. Because oil and gas resources are far from ubiquitous through the planning area and their locations are not known, it would be speculative and unnecessary to identify tracts that would not be leased in order to establish control areas for future analysis. To err on the side of caution, however, the BLM is able to withhold from any future lease sale lands of special sensitivity, thus facilitating gradual development in which all parties can learn from experience.

COMMUNICATION NUMBER 59

From Marie Carroll

Barrow resident, speaker at Barrow Meeting September 24, 2007

Our legacy. Good evening, everybody. I'm here because I very much care about Teshekpuk Lake. My name is Marie Carroll. During the day I work as President and CEO for the Arctic Slope Native Association, it's a non-profit health corp -- regional health corporation here on the Arctic Slope. I came here when I heard that you were going to have a hearing, I didn't get my mail. [59.001] So I agree with the Mayor and Robert and others that we should have you guys extend the hearings until late November. I just prepared very cursory comments but what I would like to say is first of all, thank BLM for establishing an office here and that's something that we had asked for for many years and we appreciate that. We hope that other agencies who work up here like MMS would do the same. And I guess that's what I would like to say that the --my main comment is that I would prefer Alternative A which is not to take any action to change what was decided in 1998. That was a product of high level consultation between the North Slope Borough administration, and the governor for the state of Alaska, and even the Interior Department Secretary, he came up here. That was a high level consultative process, we had all the researchers who came up here and gave us their best information, and after all of that, they decided to leave Teshekpuk Lake alone. It was after assessing all of what had been presented. I haven't heard a word of what might have changed to make the administration want to go in and allow some oil and gas exploration and drilling in this area. I think it's been recognized and discussed and supported by science that Teshekpuk Lake area is a world class wildlife habit for fish, game, and birds. And it really should be the very last place you go to onshore. I'm not saying don't go any place on the North Slope, what I'm saying is why is the federal government pursuing the most sensitive area on the North Slope? People would do anything to stop ANWR development. ANWR is beautiful and gorgeous, we know that, but it doesn't have what Teshekpuk Lake area has with the animals and the fish and the birds that support our subsistence lifestyle.

I was born and raised her -- I was born and raised here, we spent our summers, almost our entire summer out and the only reason why we would come here sometime was because of school. Our parents had to put us in school and that would cut our life short out on the wilderness. And this place supports the Teshekpuk lake caribou herd that we hunt from. Not just Barrow but the other villages. It supports, you know, caribou is like having hamburger down south which you can -- can't live without it. And the fish, the same, it's very important to our diet up here and any time you disrupt wildlife, it causes changes here.

I remember in 1976 when we didn't get any caribou, the federal government's response was to distribute one roast per family and refrigeration was so inefficient here by the time -- one of my aunts was distributing them, and she looked at -- she came to me and she said can you help me, she said I have to distribute this. And I looked at the box full of rotten green beef roasts. It was green. And she said but they told me I had to give it out anyway. It was an insult to the families. Our government's response. And what kind of a response are you going to give when some disaster happens? I think there was some comment to set up some fund and I'm aware that -- impact fund, but that's only to address the few things. It doesn't come near to addressing the family needs that would come up if something does happen. And the other concern I have, it's been in the news all over, the state in the past year that the industry wasn't watching their pipelines, we all know that. They said they took care of the big pipeline but they didn't take care of the satellite pipelines. And we don't even know, that's only on the surface.

It came out because of some accident, it wasn't because they voluntarily gave that information to the feds or to the local people. What else is hanging out there? I wouldn't want to place our most critical area on the North Slope up for a lease sale the same year this stuff is happening, you know? What corrective action is the federal government taking to make sure it doesn't happen in Teshekpuk Lake area. What else haven't you heard, what else is lurking out there? Because they don't voluntarily give you that kind of information. And yet the same year you want to lease out one of the most precious sites to us on the North Slope. And, you know, let's talk common sense whoever your leaders are, it doesn't make any political sense, it just makes our government seem very insensitive and uninformed, you know? It shouldn't -- it shouldn't be happening right now. So I guess I'm -- I don't have -- I just took a few notes just to give myself some talking points, but I guess my main comments are is that leave it as it is. That took a lot of time, federal government dollars, our own dollars, our own, you know, preparations up here, took a lot of time to get to where it is, Alternative A, but like Robert said, **[59.002] you don't even have monitoring systems in place to make sure what you have set up as mitigation measures are even working.** They've done some work offshore but what have you done onshore to make sure those mitigation measures are working? And I just would like to support the comments that were made by others and I think we're all saying the same thing. I'm not saying don't go anywhere, but there are some places worth saving. Thank you.

[Response to 59.001]

The BLM considered the request for extending the comment period to 90 days, twice the period required under NEPA, and extended the comment period to 74 days.

[Response to 59.002]

The BLM monitors lessees' and permittees' compliance with an approved plan of operation and with the requirements of law, regulation, lease stipulations, and permit terms and conditions. This monitoring is thorough and sufficient. For example, for winter exploration work, the BLM staff conducts compliance monitoring during the construction of ice roads and pads to assure that they are built in conformance with the approved plan and relevant requirements. During the drilling phase, a petroleum engineer is on site for many weeks to assure compliance with all drilling requirements and other monitoring is undertaken to ensure the adequate condition of the ice pads and roads and that procedures are in conformance with the plan and relevant requirements. As the drilling operation is removed at the end of the drilling season, monitoring occurs to ensure that clean up is conducted properly. In the summer additional monitoring takes place to assure that residual debris is removed in compliance with the plan and relevant requirements.

COMMUNICATION NUMBER 60

From Rosemary Ahtuanguaruak

Nuiqsut resident, speaker at Barrow Meeting September 24, 2007

Hello, my name is Rosemary Ahtuanguaruak, A-h-t-u-a-n-g-a-r-y-a-k, I live in Nuiqsut. I came to Barrow for the oil and gas forum but I stayed for this hearing. The hearings that are presented here in Barrow are very different than what we get in the village, we have a lot of staff from our area that are able to provide comments and questions that we don't get in our community because of our lack of resources to get them out there. I came tonight to hear how Barrow was going to respond to this process. In Nuiqsut we're very concerned about this, Nuiqsut has had to live day to day, our daily life activities around what's going with oil and gas development. There's a lot of projects and activity that are going on, there's a lot of simultaneous activities going on. Not only are we dealing with the Alpine satellite unit, we're dealing with NPRA, we're dealing with the Uriguk Unit (ph) offshore, near shore, we've got the Kuparuk River Unit being developed, we've got activities in the foothills, we've got activities with the Outer Continental Shelf, we've got activities related to Title 19 changes, and the Coastal Zone Management Plan changes. All of these things are very overwhelming and concerning to us.

There's a lot going on that there's a lot of understanding not caught up with the changes that are occurring. How our various regulatory agencies are supposed to respond to some of the changes that were supposed to be considered should we change these? It didn't go that way. It came out as yeah, maybe we should consider this but it actually came out with a big -- a lot of changes that occurred. The early processes in the process was a highly interactive process in which our communities gave up a lot in this process. We worked very extensively trying to come up with some very prescriptive measures that we felt might help to hold an assemblage of subsistence activity, because our elders were very concerned about losses to resources, losses to health, because of lack of resources and changes that we had very little control over. These things have come to life as actuality. Our community has been extensively participating and expressing these concerns for decades. People in my age group are overwhelmed with all of these things and are giving up hope in continuing this process. That's very devastating for us to really be informed as to what's going on out there because there wasn't enough effort putting in there to understand what's going on. You failed us in that measure. So did a lot of the agencies and resources available to us in our own region, in our own state, and that's not something that can be done in this area. You cannot fail us with the importance to our many communities and other communities outside of our region dependent on these resources.

In the Bethel area where there's very little economic development, this is their daily life activity when they go out there and get these foods and eat in their area, they don't have the luxury that we have up here with our regional corporation and the support we get with that. Our opportunities to training and jobs and things like that, we recognize the benefits we've gained, we have a school, we have infrastructure in our own community. When our community started, we started in tent cities, we had cloth tents that we were living in. Our people are very proud of coming out there. The reality is that many of the elders from our community were in this area before development activity occurred, but with the changes in our life cycles and the differences that came with the need to get closer to schools, hospitals, people migrated into other areas. And now they came back to our community. We came back to this area because of the importance of the biologically rich area, we knew it was something that could feed our families and provide for the future generations. But we did not understand the level of change that was coming with all that has happened and all that is still happening and is yet to come. Some of these decision processes have very -- been very bad on our community. As you've heard, with some of the meetings related to the oil and gas forum, many people that were in decision-

making levels commented about how Nuiqsut has been effected. But yet these real issues have not gotten to the table of where the decision-making is to help prevent the severity of the reaction that's occurring. We don't want the suffering our community has gone through, there has been multiple species that have been effected at various times with various activities, we don't want that to happen to other communities. Yeah, we've become a fish bowl effect as to what's going on with oil and gas development, there are other areas that have dealt with the bad effects like the big spill that occurred in our state. Well, we ended up with one of those big spills in Prudhoe Bay, that's a broken promise that was given to us. The government and the state said that they would monitor these activities and prevent some of these bad reactions. You failed in that area and yet you want to come back and start shoving more sales and leases down our throats.

It can't happen in this area, this is too important to too many of us. This is a very biologically rich area that is feeding families and these families have gone without food in our area during certain times and during certain activities. Our elders talk about times of starvation in the past, in the early 30's and other times. These were actually actions that happened in our area. We've been very lucky we haven't gone through a similar period of time. If we have an overlapping of devastation that occurs with multiple factors that happen, we will see those times again. And this process that's led to the opening of this area that is so important is putting that reality back in our face and that's not what we can put up with.

[60.001] We're very concerned, we have human health effects that are occurring. If the Borough and everybody else had listened to us when we were commenting decades ago, maybe we wouldn't be facing the amount of level of interaction that we have. But now we have to wait for three years on our human health assessment to get the information that we should have had before this lease sale occurred and before some of the other activities have occurred. We don't have that information, we're still waiting for it, and yet you're going to make some big serious decisions that are going to effect our daily lives. Well, I was one of the health aides that had to open up our clinic and when you cause some serious effects with multiple species, that was the deepest, darkest hell (indiscernible) winter I ever faced. And we had a couple of them back to back.

Whaling was affected, fishing was affected, and then we had caribou affected all at the same time. Some of the seismic activity, some of the offshore activity, near shore activity, who knows what it all was that caused all these effects. You never studied it to come out and give us a clear plan as to what was going on. You never came up with some ways to monitor what's going on around Nuiqsut, you just shoved right through us and just gave us up for sacrifice. Well, we have other communities that should not be given up for sacrifice, we have families that should not suffer the hardship we faced, and we are still commenting about the importance of our participation in the communications because you failed us. So we hope that this process is done in a much better basis so that these families that have many more thousands than we do in Nuiqsut do not face the level of hardship we faced, because their voices are strong, they will unite better, they are showing how well they're uniting by getting this oil and gas forum up here to help this process.

We don't know what's all going to be learned from this process but we better darn well learn, we better get what we need for baseline data, and you better feel some of these various gaps that are lacking. We've participated in the various hearings and processes that led to discussions about mitigating measures, we're asked constantly to volunteer in this process. I'm still volunteering in this process. Many of the people that commented tonight, it's their jobs to come here and comment. Some of them took their hats off to comment as individuals, but there's a lot more resources available here.

The level of concern was very strong for the T. Lake area and that northeast section, and for Nuiqsut, if you block that area off and we don't get the caribou, we won't get them, because that's what we're depending on now in this area. **[60.002]** We've benefitted from some of the differences in activities that shoved some caribou our way, we've gotten some better hunting this year than we had in other years, but the reality is, we saw the fragmentation of our animals that has occurred with some of these activities. We have not had normal migrations that have occurred, we've had spurts of migrations that have occurred. We've gotten some here, some there, and it's varied how it's gone through. It's been beneficial for us but the reality is how has it hurt these animals? How will it hurt them in the future to come? What are the changes of their calf production rates that are going to happen with the changes that have happened? What happened with all those animals that shot (ph) near Kaktoovik from the T. Lake area? How many of them made it back? How was their production rate? How about the calves that were born on the other side of the Dalton Highway, where are they going now for their habitat? Where are they coming to? We don't know those answers because you never went out there and got them. We need those answers as this process occurs. We need to be better informed on the other resources.

[60.003] We've got a lot of activity occurring that's changing vegetation, whether it's all climate change or other activities onshore, we don't know all those answers because it hasn't been dealt with.

Well, you'd better get your booties going on getting some of these answers because we need them and we need it now. We should have had them a while back ago so that we would be making informed decisions, not on -- based on industry's desires. The preferred alternative that you're -- well, the Alternative D which is likely to be the preferred alternative, is very similar to industry's desires for development. And that's not good for up here. Staggering development, that's going to be devastating to us because we're not going to fully understand what happens and if you hit up these critical areas that devastate the future cycle, there's so much going on out there, how are you going to decide whether it's CD-5 (ph), Alpine, or (indiscernible), near shore activity, offshore activity, onshore activity, you don't have enough answers out there to get some good information from it. So we pray that you work through this in a better means, there are so many communities that are depending on these foods, but it's our health. Our health goes down when we're not eating our good foods. Our elders depend on the foods that come from our lands, from the generations of knowledge that have continued to feed our families this way, from the wellness of our activities that have kept us the way we are. But we can show tremendously with other Native groups how health decreases when they lose out on their natural food resources. And we don't want that to happen up here. We've been lucky up here because of our differences that have activity up here. But the reality is we've got groups of family members that are already moving in that direction because of the changes that have occurred. We have very limited resources to address these health issues. We have very limited resources to look at the long-term effects. We have a lot of concerns out there, many more that give us a lot of hesitancy.

You wonder why people in our community get aggressive in their process. Well, because we've had so much lack of control, there's so much level of frustration, and there are true day to day life impacts that are occurring on a regular basis. People in my age group don't know a lot of the traditional names to the east of us because our families don't hunt there anymore. People -- my own kids are learning names to areas to hunt in because the areas that when I first came to Nuiqsut are different with all of the development activities, we have to go to different areas to hunt. This is true life changes that are occurring. We don't have infinite amounts of area. When you get out there with what's already leased, there is so much that's already leased.

The decisions that led to the plan that was developed in 97, 98 were done on a long-term basis. This push, rush, shove is going to devastate us in many ways that we really don't fully understand, but you'll be asking us about it. You'll be asking us to continue to volunteer as we have been. Well, reality is, we've become specialists and consultants, regardless of what's going on. We get asked from other villages on the North Slope, other areas off the North Slope within the state, even other areas in other parts of the world that are developing in these areas, because they have seen what we've done. We've got a lot of acronyms to some things that we've looked at with the -- all the different things like the HHE, the HHA, the SUA, the CAA, the GNP, you guys got a lot of those little acronyms that are out there, those are some things that we fought for a long time to get, and it was our fighting and our sacrifice that showed that we should get these things.

It's helped in some ways but they haven't helped in others, and they can be done a lot better. So please take a real serious look at it, because our lives are affected by this, our future generations are affected by this, and the health of us all will change if you do it poorly. Thank you.

[Response to 60.001]

The BLM recognizes and understands the significance of the issue of public health for impacted communities. The public health subsections in the Draft IAP/EIS have been drafted in collaboration with the NSB and AITC, and in response to public comments. The BLM will continue this collaborative approach to addressing the issue of health impacts, and has outlined a series of potential mitigation measures in the Draft IAP/EIS to begin addressing these concerns under the proposed leasing program.

[Response to 60.002]

The BLM shares these concerns over impacts to caribou. That concern is reflected in the restrictions that would be placed on development under Alternative D in the Teshekpuk Lake Caribou Habitat Area, the Coastal Area, the Caribou Movement Corridors, and the Southern Caribou Calving Area. That concern is also reflected in the expressed need for monitoring of these caribou issues as addressed in section 2.6 of the DSEIS, and the need for coordinated research and monitoring is now addressed in section 4.2.3 of the FSEIS.

[Response to 60.003]

The BLM, too, is aware of changes in vegetation over the last several decades in the NPR-A, including in areas where no obvious, direct effect by humans is present. Hypotheses for changes include climate warming, sea level increase, increased storm surge on the coastline and subsidence of the land. The first three of these are probably related to one another. The cumulative effects of these changes on wildlife is addressed in the DSEIS and changes to the text have been made to clarify some of these concerns further. The need for continued monitoring is addressed in section 2.6 of the DSEIS, and the need for coordinated research and monitoring has now been addressed in section 4.2.3 of the FSEIS.

COMMUNICATION NUMBER 61

From Earl Klongvik

Point Hope resident, speaker at Barrow Meeting September 24, 2007

Good evening, thank you. My name is (Native name). You probably don't know what that mean, huh? Just like what I don't -- I don't understand about your oil development. My name is Earl Klongvik, I'm a resident of Point Hope. Point Hope is the oldest inhabited community in North America and I am proud to be -- to (speaks Native).

I'm a member of the Native village of Point Hope that strongly oppose NPRA development. Mainly southern part of NPRA. And we strongly oppose the development of the northeast corner. When the Congress opened up NPRA for oil development, I push hard for my tribe to pass a resolution opposing development of NPRA. The main reason we oppose development of NPRA is the waterfowl we depend on. We watch the waterfowl migrate to Point Hope to come to this area, to breed, and to meet their friends again that they never seen a long time ago.

So we strongly oppose development where the waterfowl go do their breeding and their molting from Point Hope. We had a chance to go to Washington, D.C., when this issue first came out to tell -- to educate the Senators and the House of Representatives how important this area is for waterfowl. We had to educate your superiors about how important northeast corner is to the waterfowl. We strongly opposed NPRA. And also I'm a member of Red Oil (ph) which it's called, resisting environmental destruction on indigenous lands. As part of the indigenous environmental network that covered the whole Lower 48 and Canada, including Alaska. We are strong and concerned about the destruction that oil industry is doing to our lands. We have experienced Exxon Valdez oil spill. We see the impact it had done to our small birds like the sandpipers that used to go to Point Hope by the thousands when they're migrating up this way, or to the Siberia side. We don't see those any more, where are they? Maybe Exxon oil spill took them all. Now we are experiencing the more terrible thing, every time the waterfowl heads home to the southern part, wherever they go, we hunt those waterfowl and those waterfowl don't taste like they used to before. What is happening? I don't know. Our wildlife biologists in the North Slope Borough probably knows that our animals are beginning to taste a little bit different than before.

[61.001] Maybe it's the climate change that we need to put on the EIS, strongly put the climate change that is happening in our areas. We are noticing our lakes are drying up. We are noticing our land which we used to travel in is drying out and changing. Melting all over, our lakes are dry. What else are we expecting in the future? What will happen if oil development starts development in the northeast corner? We look to the future as our way of life and to put food at our table. So Point Hope strongly oppose any development on the northeast corner. I came here for the oil and gas forum, I never heard nothing much about climate change, I never heard much about wildlife, but I heard about development. But we all need to consider that the wildlife lived here thousands and thousands of years and they never changed. They go back where they were born, like the fish. So we'd better keep that area that is precious to the wildlife safe, clean, and don't touch it. Thank you very much.

[Response to 61.001]

The existing effects of climate change on the resources within the planning area are integrated within each resource section of Chapter 3 and in the Cumulative Effects section of the EIS (4.7.7 Cumulative Impacts). BLM included predicted effects of climate change in the Cumulative Impacts sections to help frame the context in which future actions may affect the environment under a different and changing climate.

COMMUNICATION NUMBER 62

From Craig George

Barrow resident, speaker at Barrow Meeting September 24, 2007

My name is Craig George. I'm a wildlife biologist with the North Slope Borough and I'd like to make some comments as a -- as a private citizen, I guess. And these should not go on the record as the official Borough position or anything. So anyway, I -- as Marie Carroll mentioned earlier, I was here in -- when we worked on the 1998 plan and we spent a lot of time right in this room for, I think, a six month period, going over series of maps and a lot of the buffer areas that you see there that -- around Fish Creek and Judy Creek, all those things that we worked with the public, those weren't necessarily our ideas. In fact, when we went to Nuiqsut and they recommended all those buffers and this sort of thing. So anyway, I think we achieved a reasonable balance and based on wildlife issues and people issues, but the point I wanted to make here was as I listened to these comments as I have for 30 years now on -- in public meetings, it seems to me that really one of the biggest effects of oil and gas development is on the people and subsistence. [62.001] And Rosemarie mentioned something that is pretty interesting, if you look at the maps that were made by Seve Patterson (ph) or if you talked to the elders from Nuiqsut and that area, and look at their lifetime use area and a lot of them grew up in the country, as some have mentioned and over near Prudhoe, you see that their use area goes way east of this map and over into Prudhoe and beyond, Flaxman and down all through this country. And then if you look at the current use areas, there's a big chunk out of it and that's the Prudhoe-Kuparuk area basically. And is the wildlife there? Yeah. You know, there are caribou, there's waterfowl, and the things they used to use but for various reasons the people are really reluctant to go into those areas and, in fact, there's a lot of security restrictions, whether they're all legal restrictions or not, I've heard that debated. But the fact is, they're not using a lot of those areas and that worries me. I think the same thing, we've heard a lot about the importance of this region and there's a lot of camps and cabins, in fact, that's the area, northeast area, and moving into the Chipikuk country is the highest -- the highest densities of camps and cabins on the whole Slope is in -- if this was extended to the west, you could see all this country in here. It's also arguably the area of the highest wildlife densities of fish and waterfowl and caribou and all that sort of thing.

[62.002] So that really worries me if there's -- infrastructure goes in, there's security stations, there's -- and then we have another terrorist attack on Prince -- in this country and on oil infrastructure, they're going to lock this down so hard that no one's going to get in there. And I think that's something we gotta think real hard about and something that we should look carefully at in the EIS because that's a real thing and it's a worrisome aspect so -- You know, the -- and I heard some interesting comments about the time depth, I think (indiscernible) just said that -- you know, this area has a time depth of grease or roam or something, you know, these have been used for thousands of years but, of course, there's not the spectacular ruins that you see elsewhere but this is country that has had a lot of use for a long time and is extremely important to folks here. And it also happens to be -- I don't know if you've been up in this country but I wanted to say one word that it's actually -- I'm thinking I should have brought slides but it's very beautiful as well. And I think little has been said about esthetics here but it's -- it's really -- I find it very attractive country up in there as well so, anyway, just a couple of things to think about. Thank you.

[Response to 62.001]

The BLM acknowledges this change in human use areas following industrialization of the Prudhoe Bay/Kuparuk area in the cumulative effects section for subsistence in the DSEIS. The presence of wildlife (caribou) in that area is acknowledged on Map 3-21.

[Response to 62.002]

The BLM knows of no plans that would thwart subsistence users' access to subsistence resources near oil and gas infrastructure in the planning area if a terrorist attack occurred elsewhere in the United States. It is not reasonable to assess impacts of such a speculative occurrence.

COMMUNICATION NUMBER 63

From Karen Hibbard-Rode et. al

Resident/Student, Fairbanks, speaker at Fairbanks Meeting October 10, 2007

My name is Karen Hibbard-Rode, and these comments are from Archana Bali, who is not here, Nathan Coutsoubous, right here, myself, Jill Maynard, Chanda Meek, Tracey Smith, Stuart Chapin, and Gary Kofinas. And we are all grad students or professors in the resilience and adaptation program at the University of Alaska. Now, these comments don't represent the position of the university, of course. But we are in a program that studies social and ecological systems and how to sustain them. So we would like to provide some science-based comments on particularly the cumulative impacts section of Chapter 4.

This review, as I said, focuses on the cumulative impacts analysis, and we start by discussing two general topics:

The structure and transparency of the text, and thresholds and combining impacts. And then we follow a discussion of seven specific sections within the cumulative impact: Climate change, birds, mammals, threatened and endangered species, subsistence, sociocultural systems, and environmental justice. And we'd like to thank you for considering our comments.

So first of all, we recognize and appreciate that it must have taken a huge amount of work to prepare such an expansive document. But we would like to suggest, however, that revisions be made to writing and transparency throughout the supplement. In particular, we felt that some - many sections read more like lists of impacts, instead of integrative concepts of what those impacts are actually going to look like cumulatively. And so the reader is left wondering kind of "What does this add up to?" Instead of being able to say, "I have a clear picture of what cumulative impacts of these alternatives would be on the North Slope."

[63.001] We also think the document lacks some transparency about who wrote it and the whole suite of references and conversations that went into it. For example, who authors each section? What are their sources? How much is science based? How much is local-knowledge based? And most importantly, out of what processes or type of communication did the conclusions that are often not cited come -- arise?

And so we suggest there are revisions to increase the transparency and readability of the cumulative effects section. Though we recognize the amount of work that went into it. **[63.002]** We felt that the Draft Supplement EIS generally overlooks thresholds in its discussion of cumulative effects in oil and gas development. And we consider a threshold -- one definition of a threshold to be a point at which the reaction to the -- to an impact is much greater than past reactions to a comparable impact, or much greater than reactions to a slightly smaller amount of that impact. So, for example, at what point does an impact create an actual change to that system?

[63.003] And this is linked to the discussion of synergistic and additive impacts in the cumulative effects section. We think that unfortunately synergistic impacts have been discounted in this analysis. Because while one could argue BLM has responsibility to consider plausible synergistic impacts, they have only chosen to discuss no synergistic impacts. Because these resilience thresholds can only occur in the presence of synergistic or nonlinear interactions, this analysis has resulted in few thresholds actually being identified in the cumulative effects discussion. So one way to remedy this, for example, could be combining specific effects using a simulation model that paints a clearer picture of the future. And being able to control those effects to change the outcome.

Okay. The climate change section. We felt that certain aspects of climate change were sufficiently addressed, but that it was presented in isolation from other sections, often creating an incomplete picture of the full cumulative impact. **[63.004]** So we would suggest that climate change be integrated more thoroughly into the other sections in order to paint a better portrait of the cumulative impacts all total of the potential development.

Our birds section. **[63.005]** First, as with most of the cumulative impacts analysis, only additive impacts are assumed to happen. This section would be significantly strengthened by the consistent consideration of synergistic and countervailing impacts and of nonlinear thresholds. So a second, nowhere in the analysis -- in the assessment are quantitative assessments of impacts given, such as the number of birds displaced, killed, produced, et cetera. And the section on birds, as well as other sections, would be significantly strengthened if qualitative descriptors such as predicted to be small or some birds may habituate are placed with numerical estimates based on statistically rigorous best-available science.

[63.006] Third, one assumption in the birds section is that displaced birds can, one, survive; two, find acceptable habitat elsewhere; and three, reproduce successfully when they are disturbed. The concern is that the scientists don't agree and have evidence to prove or disprove that. And this section would be significantly strengthened if there was explicit recognition that the scientific community does not know what happens to birds that have been displaced by development activities.

[63.007] The mammals section, which focus -- the terrestrial mammals section, which focused mostly on impacts to caribou. We felt that the discussion of impacts to habitat mostly looked at the amount in acreage of impacted health -- habitats, with some secondary discussion of the quality of that habitat. But we didn't think that those were combined adequately cumulatively to look at the true value of lost habitat. So basically the effect of habitat loss in mammals isn't necessarily a linear additive relationship because of differences in habitat quality and use across different times and different uses of space. And so if there was some deeper analysis to look at multiplying habitat loss with habitat quality and habitat use, and considering that in a temporal and spatial context, there would be a clearer picture of what these impacts would be. Putting that in the scenario of climate change would also allow us to see those scenarios more clearly.

[63.008] We had found some issues with the use of population trends in the analysis. We felt that a low frequency of census counts in recent years for some herds, coupled with the short-term monitoring that's been conducted so far on caribou populations doesn't allow us to make definite conclusions about whether oil and gas development on the North Slope has already influenced the long population trends of caribou, especially because populations of caribou -- cycles of caribou can be over 100 years. **[63.009]** We also felt that isolated factors, such as hunting or seismic activity, may not have population level effects, but the accumulation of the impacts may. And this could be more adequately addressed by the cumulative effects analysis.

[63.010] And finally, since resilience of caribou and other mammal populations depends largely on their behavioral flexibility or mobility, we think that the impact of development to mammals could be stated as a loss of that ecological resilience, and the inherent ability of them to be flexible and mobile may be decreased. **[63.011]** We have some brief comments on the threatened and endangered species section. We felt that there is a lack of the use of best-available science. In particular, examples from other endangered species around the world, and the use -- the application of those to considering possible impacts would have made it much more science based. And also a lack of thresholds and quantitative analysis. **[63.012]** We focused a lot on the subsistence section of cumulative impacts. And we feel that the material

provided in the subsistence section focused largely on impacts to bowhead whale and caribou populations and their harvesting. And predominant attention is given to these subsistence species, which is -- causes disproportionate attention to other potentially significant species, such as birds, fish, and smaller furbearers.

[63.013] The section mentions that there are major negative effects to subsistence users, but there is not supporting information looking at the synergistic impacts to actual species lost, impacts to subsistence harvest and sociocultural losses from declines and specific subsistence species.

[63.014] We felt the supplement also failed to identify and address certain thresholds, such as those related to the ability of herds to keep their same range, and hunters' capacity to continue hunting in the face of increased travel distances and infrastructure barriers. So we suggest that the document identify thresholds that address the ability of subsistence species and hunters to maintain themselves and their vulnerability to losing the -- the capacity to maintain that resilience.

[63.015] And sociocultural systems. We feel the analysis of sociocultural systems focuses largely on subsistence; whereas, we suggest that they also use social indicators. The Alaska OCS Social Indicators System suggests the measurement of the following categories and indicators: One is cultural continuity; two, the extent to which individuals and families are able to function well in society; three, command over goods and services; and four, social opportunities and participation. The sociocultural analysis in the BLM Supplemental EIS is largely descriptive and qualitative, and as such it doesn't include measurable indicators that would allow BLM or other agencies to systematically assess community wellness, social resilience, and vulnerability through time **[63.016]** And we'd like to add that Dr. Jack Kruse at University of Alaska Anchorage has written a guide called "Indicators of Social, Economic, and Cultural Cumulative Effects Resulting from Petroleum Development in Alaska: A Review." We noticed that BLM didn't cite this reference, and think it would be very useful. It should be included.

[63.017] Finally, we comment on environmental justice. We feel that the environmental justice issues, many are actually scattered throughout the analysis and suggest -- in sections relating to subsistence, sociocultural systems, environmental justice, economy, and public health, among others. So the environmental justice section itself contains not much unique information. So the section should be significantly strengthened by developing and making explicit the connections between these sections within the environmental justice section itself, rather than somewhat obliquely referring the reader to the other sections as it does now.

[63.018] Secondly, the environmental justice impacts do not have quantitative assessments anywhere in the analysis, so it could be significantly strengthened by replacing some of the qualitative descriptors with numerical estimates based on his statistically rigorous best-available science.

[63.019] Third, guidelines and thresholds for possible future environmental justice impacts aren't included in the analysis.

[63.020] And finally, we -- we feel that that section should directly address some of the possible impacts of development on environmental justice as the public health and other sections do, instead of describing just how environmental justice impacts are mediated through impacts to subsistence. So we'd like to thank you, again, for listening to our list of comments. Good night.

[Response to 63.001]

The authors and their respective specialties are provided in Chapter 5. Sources are cited in the document.

[Response to 63.002]

The cumulative impact analysis provides a legally sufficient analysis of potential impacts. Thresholds have not been identified because of the great predictive uncertainties associated with complex ecological factors and because, even if environmental systems were less complex, there is great uncertainty surrounding which potential development may occur and in what matter.

[Response to 63.003]

The cumulative impact analysis provides a legally sufficient analysis of potential impacts. In cases in which there are potential synergistic impacts, the Supplemental IAP/EIS has identified them. Quantitative estimates of impacts, including establishing thresholds, have not been identified because of the great predictive uncertainties associated with complex ecological factors and because, even if environmental systems were less complex, there is great uncertainty surrounding which potential development may occur and in what manner.

[Response to 63.004]

The existing effects of climate change on the resources within the planning area are integrated within each resource section of Chapter 3 and in the Cumulative Effects section of the EIS (4.7.7 Cumulative Impacts). BLM included predicted effects of climate change in the Cumulative Impacts sections to help frame the context in which future actions may affect the environment under a different and changing climate

[Response to 63.005]

The cumulative impact analysis provides a legally sufficient analysis of potential impacts. Quantitative estimates of impacts have not been identified for all resources and uses because of the great predictive uncertainties associated with complex ecological factors and because, even if environmental systems were less complex, there is great uncertainty surrounding which potential development may occur and in what manner. Note that in 2003 the National Research Council stated, "It is impossible to characterize future development infrastructure and activity in areas that have not been fully explored. Until exploration has occurred, the amount, distribution, and exact nature of any extractable hydrocarbon deposits remain unknown. But the amount, distribution, and type of hydrocarbon deposits profoundly influence the nature and extent of development infrastructure, thus how many roads and pipelines will be needed, and how much activity will occur and when it will occur." (NRC, 2003, p.116)

[Response to 63.006]

Your comment has been incorporated into section 4.8.8 of the Supplemental IAP/EIS.

[Response to 63.007]

The DSEIS discusses the potential effects of caribou displacement along roads, suggesting habitat loss would likely be greater than the gravel footprint alone, and that the result may be decreased caribou productivity. The DSEIS also considers the additive and synergistic effects of development in the NW and NE NPR-A and the Colville Delta. The text in the cumulative effects section for terrestrial mammals has been revised to make these points more clear and to state the possibility of negative population level effects on the TLH. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 63.008]

The ADFG, NSB and BLM are concerned about the length of time since the last photocensus of the TLH and CAH. Weather and aircraft availability have conspired against photocensus success for several years now. A new photocensus will be done as soon as these factors permit, and in the meantime other demographic data (e.g. parturition rate and yearling survival) continue to be collected annually. The BLM agrees that definite conclusions regarding the influence of oil and gas development on the long-term population trends of North Slope caribou are not possible. There remains substantial disagreement in the scientific community over a link between development and caribou productivity. There have been, however, enough good studies to suggest a link to warrant continued monitoring and research. The need for continued monitoring is addressed in section 2.6 of the DSEIS, and the need for coordinated research and monitoring has now been addressed in section 4.2.3 of the FSEIS.

[Response to 63.009]

The BLM considers adequate its coverage of both hunting and seismic exploration in the cumulative effects section for terrestrial mammals in the DSEIS. It is BLM's assumption in this analysis that neither hunting nor trapping would have adverse population level impacts on wildlife, either directly or cumulatively with other impacts. Those activities are managed by the Federal Subsistence Board and the Alaska Board of Game with the intent of avoiding such impacts. The BLM's assumptions regarding the effects of seismic exploration on wintering caribou is based on a lack of evidence that caribou survive the winter better in the absence of seismic exploration than in its presence. The BLM conducts caribou research and monitoring in cooperation with ADFG and the NSB, and the NSB is currently attempting a quantitative study of this issue. It is difficult to conduct, however, because success requires the correct combination of activities (over-wintering caribou and seismic exploration) in time and space. The researchers cannot control any of these variables. The need for continued monitoring is addressed in section 2.6 of the DSEIS, and the need for coordinated research and monitoring has now been addressed in section 4.2.3 of the FSEIS.

[Response to 63.010]

The text in the cumulative effects section for terrestrial mammals has been revised to reflect this potential.

[Response to 63.011]

The comment does not include what examples from endangered species around the world would be useful to this analysis. Where species specific information is sparse or lacking, the IAP/EIS draws inferences from information on other species when warranted.

The IAP/EIS uses quantitative analysis to assess the effects of the alternatives and cumulative effects as the available information warrants. However, given that the analysis is built from the Reasonably Foreseeable Development scenario and cannot predict where development would actually occur (only where it will not) and that there is little information to definitively state that an action would result in mortality or loss of fitness, the analysis is necessarily qualitative at times. Even when/if there are impacts resulting in mortality/loss of fitness, it would be spatially dependent and cannot be known until the actual development location(s) is known. Nevertheless, the combination of the quantitative and qualitative analysis in the IAP/EIS facilitates a reasonable estimate of potential impacts of each alternative on the relevant species/resource.

[Response to 63.012]

The cumulative effects analysis of subsistence focused predominantly on the subsistence uses of

resources, while relying on individual resource sections (i.e., fish, birds, caribou) to discuss impacts to the populations of the resources themselves. Fish, birds, and furbearers are all discussed in the Future Effects and Their Accumulation section of Cumulative Impacts: Subsistence in Chapter 4.

[Response to 63.013]

At this time, the author is unaware of any research or data regarding the synergistic impacts of species loss, subsistence harvest levels, and socio-cultural losses that would allow us to address this issue with the level of detail that you are asking for.

[Response to 63.014]

NEPA analyses use the best available data to determine the environmental consequences of a proposed action. If data existed regarding resiliency thresholds among the Iñupiat, this information would be utilized within the NEPA analysis. What little information does exist regarding resiliency is located within the Future Effects and Their Accumulation under Cumulative Impacts: Sociocultural Systems in Chapter 4.

[Response to 63.015]

The review by Dr. Jack Kruse (Indicators of Social, Economic, and Cultural Cumulative Effects Resulting from Petroleum Development in Alaska: A Review) is an excellent evaluation of the attempts at predicting and monitoring cumulative social, economic, and cultural changes in Alaska using social indicators, which he makes perfectly clear has not been done very effectively to date. As a result, there is not adequate quantitative information from which to structure the discussion within the SEIS. A NEPA analysis is not research, but relies on the best available research and data in order to assess the environmental consequences of proposed actions.

[Response to 63.016]

The review written by Dr. Jack Kruse that you refer to in the comment is an excellent evaluation of the attempts at predicting and monitoring cumulative social, economic, and cultural changes in Alaska, which he argues has not been done very effectively to date. As is stated within the statement of purpose "the report focuses on the design and implementation of research intended to predict or monitor cumulative social, economic, and cultural changes associated with petroleum development in Alaska." A NEPA analysis is not research, but relies on the best available research and data in order to assess the environmental consequences of proposed actions. While, as Dr. Kruse has pointed out, there is room for improvement in predicting and monitoring changes, the information available and used in this IAP/EIS is sufficient for the analysis.

[Response to 63.017]

CEQ guidance with regard to environmental justice states: Where a potential environmental justice issue has been identified by an agency, the agency should state clearly in the EIS or EA whether, in light of all of the facts and circumstances, a disproportionately high and adverse human health or environmental impact on minority populations, low-income populations, or Indian tribe is likely to result from the proposed action and any alternatives. This statement should be supported by sufficient information for the public to understand the rationale for the conclusion. The underlying analysis should be presented as concisely as possible, using language that is understandable to the public and that minimizes use of acronyms or jargon. The BLM has done this, and refers the reader to additional, detailed supporting information in other sections of the SEIS.

[Response to 63.018]

The use of quantitative as opposed to qualitative information as part of the impact identification under Environmental Justice is not a requirement of the CEQ. The BLM believes that a best-case scenario would be the use of both; unfortunately, there is a dearth of quantitative statistically rigorous best-available science.

[Response to 63.019]

The role of environmental justice, just like the role of a NEPA EIS and the ANILCA 810 evaluation, is to provide decisionmakers and the public with a complete and objective evaluation of significant environmental impacts, both beneficial and adverse, resulting from a proposed action and all reasonable alternatives. The Supplemental IAP/EIS relies on the best available data to identify possible future environmental justice impacts. Thresholds have not been identified because of the great predictive uncertainties associated with complex ecological and social factors and because, even if these systems were less complex, there is great uncertainty surrounding which potential development may occur and in what manner.

[Response to 63.020]

Environmental Justice (EJ) is the identification of a disproportionately high and adverse human health or environmental effect on a low-income population, minority population, or Indian tribe. Negative effects to subsistence resources are adverse environmental effects, thus the importance of subsistence to EJ. Likewise, the SEIS contains a stand-alone section on Human Health. These, as well as social and economic impacts, are the factors that the CEQ requires agencies to identify under EJ. They are the direct connection to EJ.

COMMUNICATION NUMBER 64**From Edward Wukanigulk****Nuiqsut resident, speaker at Nuiqsut Meeting October 11, 2007**

Good evening. My name is Edward Wukanigulk. I'm a resident of Nuiqsut. I'd like to give an oral statement on the portion of our NPR-A. Due to the amount of expanding of our -- of BLM's and the Department of Interior leasing a portion of -- up northeast of Teshekpuk, we feel that our land going have been stampede by -- by the Department of Interior and BLM. And that given a lot of the oil industry of the people to develop and possibly to produce oil and gas in that area.

Teshekpuk Lake is important to our -- to the subsistence. The waterfowls have utilized the Teshekpuk area, so has the caribou. The caribous are -- originally migrate from the Central heard, the Arctic herd, and a portion of that come from the Porcupine. They utilize that area for a calving area. It's a reproductive for our -- all the species. **[64.001]** And also the polar bears that needs -- that needs to be identified that -- as an endangered species. They use that area for denning, and that's -- wanting that, the BLM and the Department of Interior needs to know is how much impact on these lease sales that has been going on.

I prefer Alternative A as a no lease, because that area is wonderful to our livelihood, and also to our neighboring west of our village, because they utilize that area a lot. People that travels to and from spend some time at Teshekpuk. Our -- our people from here that goes to Barrow by snow machines know that there is -- caribou doesn't just stay there during summer. They also winter in that area. So that is -- the majority of our caribou are -- are from the west of our village, and they are in that area, and the Fish Creek area. And the Kugaaruk is -- leave areas during summer. But the BLM want -- decides to open that area, they are going to divert not only the waterfowls and the caribous, they're going to take away our livelihood which we depend on. We depend on caribou a lot.

So tonight I -- I prefer Alternative -- Alternative A. And another thing is that the climate change in our region, in the Arctic regions is -- is, in a fast pace; because we do have a lot of climate change going on. We're experiencing tundra fire south of our village. And due to lack of icepack, the majority of the seals and the bearded seals that we hunt are hardly at the central rivers on the sand bars. So part of that is -- the climate change is that the -- it's -- part of it is man-made. And if BLM was to open that, then that would keep the village under the restricted area for the community on both Nuiqsut and -- and west of our -- our neighbors would have a restricted area that they will be a -- or so. And if our people are out hunting for caribou during winter, and an oil -- oil field worker sees a -- local going after our caribou, they will consider that they are harassing these caribou that they're trying to divert away from these oil fields. So I prefer Alternative A.

[64.002] And -- and the polar bear -- subsistence use of our polar bear is not being drafted on the EIS. It's not been discussed on the -- on the EIS. Because we do depend on polar bear too. And there are a lot of those denning areas in -- in Harrison Bay all the way to Cape Halkett and all towards the north of our Teshekpuk Lake. And so that is my statement for this testimony.

(Translation given by Mr. Wukanigulk.)

[Response to 64.001]

Polar bears and polar bear habitat are addressed in the analysis of specific alternatives and in the Cumulative Effects section of the IAP/EIS'S Chapter 4.

[Response to 64.002]

Polar bears are not specifically named, but are considered within the discussion of marine mammals in the identification of impacts to subsistence. The detailed discussion of the impacts of the four alternatives to polar bears is located in Chapter 4 under Threatened and Endangered Species.

COMMUNICATION NUMBER 65**Excerpt from Rosemary Ahtuanguaruak****Nuiqsut resident, speaker at Nuiqsut Meeting October 11, 2007**

For the record, my name is Rosemary Ahtuanguaruak. I've been in Nuiqsut now about 22 years. I -- speaking as an individual, as a community member, I've participated in lots of local community meetings related to this type of activity. There's a lot of concern in our community because this has become our day-to-day life activities. We're constantly interacting with the changes that are occurring, and this gives us insight about the level of concern we have for the proposed discussion that you're giving us.

We -- I oppose this development plan. I support the no-action alternative. We, as a community, have seen what happens around us, we've experienced and communicated extensively about what's occurring. We have to constantly communicate and educate all of the various people that come and -- come and deal with these types of meetings in our community. It's very frustrating when we haven't succeeded in stopping all of the changes that has occurred to us. We've suffered social changes related to that. We've had a lot of health concerns that have grown over the years through this process. As a community health aide, I saw firsthand those health reactions. And it's very important that we continue to communicate, because we don't want to see that happened with past poor planning efforts on development activities and the impacts that had occurred to us.

We had to communicate for many years before our words were heard at the level that it needed to be heard at to get some support to try to intervene with some of these things. We still have many issues that we have not succeeded on getting in to the right level to try to mitigate some of the existing infrastructure conflicts that are occurring. We continue to live and interact in our local environment, but that means we continually receive reactions to what's going on around us. Not only are we dealing with this amount of change related to this, but all of the other development activities that have occurred. We are very concerned because we've suffered with these issues.

Many of our community members have participated in and commented, and we're speaking what's really happening in our daily lives. This is what we're facing as a reality of the efforts to come here and discuss the potential for these changes. [65.001] We don't want to have the changes to the stipulations. We worked very hard for many years to discuss the mitigating measures in the early '97 time. It was over a five-year period. And this plan came in under the guise of considering change. With it came opening lands, and prescriptive mitigating measures were changed into very vague regulations that are not well understood within your area's agencies, let alone people that are going to go and do development activities, if they are approved with leasing.

There is a lot of confusion as to it, and the understanding of it is not there. The science hasn't caught up to be effective to communicate effectively what changes have occurred around our community, let alone other communities that are already feeling some of these reactions. The resources go to multiple communities. Not just ours, not just the North Slope, but there's other communities that are also at risk with this, the migratory birds, and the concerns that we have for their progression. And we communicate. You have all these kids here. And sometimes it's difficult to have them at a meeting, but the reality is these decisions are going to be their table settings in the future. And it's a reality of what we've gone through. Our Elders started this process when we were their age. Now we're here communicating about this stuff, and it's -- it's really hard to keep enough people involved in this process, but the lack of numbers does not

hide the level of concern this community has with this proposal. And we hope that you really take this to heart because there are thousands of people near Barrow that could be affected negatively as we have been affected. But not only them, all of the other people that rely on the resources that migrate here and migrate to other areas.

We're concerned about the changes that have happened with the existing development. The lack of poor efforts to effectively assess the government accounting reports related to the pipelines, the government accounting reports related to assessing how well we're doing on trying to collect royalties, and all of the various financial assessments that have occurred showed that we're doing a very poor job. And yet you're coming into such a vitally sensitive area and suggesting this effort to open more areas to leasing. You haven't heard effectively our concerns, and it needs to be heard effectively because it's a really true-life concerns that we're presenting. And we hope that we don't have to suffer continuously as we are, but we also hope that the other communities don't suffer like we have. And that's why we still try to communicate and participate. And I hope others continue to communicate, because it is very important that we voice our opposition to this. Thank you.

[Response to 65.001]

The BLM considers the performance-based stipulations and ROPs to be a reasonable approach to mitigating impacts. At the permitting stage, the requirements of the stipulations and ROPs will be applied to the lessee/permittee's proposed action.

COMMUNICATION NUMBER 66**Excerpt from Bernice Kagliak****Nuiqsut resident, speaker at Nuiqsut Meeting October 11, 2007**

My name is Bernice Kagliak. I'm a Nuiqsut resident. I was one of the original settlers that came back in '72, '73. But my father lived in this area, him and his family. His sister has a Native allotment just right across here. And unfortunately we lost land we should rightfully own near West (indiscernible). A little bit of history. You know, it hasn't even been 50 years since we, the people of this land, are U.S. citizens. We were Russians and we didn't even know it. We lived a nomadic lifestyle, subsist, lived in this harsh environment not knowing that it was so rich in natural resources. From our Elders who can't speak, write, or read English, who have been robbed of land they should rightfully own by Native allotments, BLM has failed us, you have failed us. And you fail to recognize that you failed us. And yet, now you come to us wanting to change an existing EIS by taking away a majority of the protections that we thought that were needed in there, and you continually come here and you still want to fail us. I know the U.S. is in demand of oil. I read it in the paper yesterday. BLM is going to open that for Shell, out in the ocean. I read it in the paper. They're going to help Shell out because you guys are so in debt. You need the money, the federal government, with a war going on.

And I could tell tonight, and I could -- just by your demeanor by sitting there almost falling asleep. I -- I guess I anticipate that kind of work you're going to do on our behalf when you go back to your office. Because I sit here and I look at you, you're almost dozing off, and that tells me you're not taking us too seriously. Time and time again my -- my parents were robbed of land they should rightfully own. They should have had 160 acres. We have forever lost that, and it's because they couldn't read, write, or understand English. And we haven't even been U.S. citizens for 50 years yet, and we have to adhere to your rules, and you have to dictate to us how -- how we should run our land. It's time to wake up, America. We are Americans too. We were Americans just like the early Americans that Columbus found in U.S. We just celebrated his holiday this Monday. How much more do we have to take? How much more are you going to take from us?

I expect you to advocate for us. You are our eyes and ears to the government. We don't have the money to go to Washington, D.C., and lobby and fight for our rights. So I expect you to work on our behalf and hear the voices of these people. We've been coming here -- this is the fifth day in a row, meetings. We're bombarded with the oil industry left and right. We're bombarded with meetings, and yet you expect us to read that supplemental EIS and understand it, when we're also bombarded with other issues with oil industry impact.

[66.001] You issue the permits, but you fail to have someone come to see whether they're in compliance. And when they break the compliance to the EIS, there is no penalty. Who pays for it? Nobody. Do they get a slap in the hand? No. Do they get a fine? No. **[66.002]** What's wrong with this EIS form? It's not adequate. You don't cover the penalties when they're broken. I've seen EIS is broken, with my own eyes, and yet the government don't have no one here to monitor that. And you come here with all your fancy writing and tell us this is what the industry will have to follow, and this is their guideline. Who's here to make sure they're going to follow that?

It's only to your benefit. It's time to wake up. So I want you to go back to your office, and you think about us. You think about me and what I have to live with here. I will still be living here when the oil runs out and they leave. And I will have to live the consequences of what they leave behind. Whether we have to go back to a nomadic lifestyle, I don't know. So it bugs me

when you're taking testimony from our people and some of you are half asleep. It tells me how much effort you're going to put into this. I can anticipate it will -- it will get typewritten and you will fulfill your requirement and say, "Yes, we did a public hearing, this is what they say, you can" -- "we've done our part."

So I wish I had all this knowledge before Alpine was developed, when they told us that it would be a footprint, and it turned out to be an invasion to our subsistence way of life. And you're pushing west. And in here you says the road to here has been suspended, gravel road. And a couple days ago our people were voicing concern that we should have a gravel road. You know our corporation supplements our fuel, our heating, our motor gas. We charge our people a lower rate and take a loss. And the people here don't understand that. We may benefit from the oil industry, but we pay a price as well. We've come a long way from living in sod houses and tents, honey buckets to flush toilets, and electricity and iPods and computers and communicating halfway across the world, and we're still dealing with the change.

You heard an Elder earlier. She said she did not know much about money and how to deal with money and credit, and how having credit is a big headache. I mean, you know, I -- I'm only, what, 43 years old, and I lived with my grandparents out in the sod house by Atqasuk. I didn't have the foggiest clue. We lived that nomadic lifestyle. My mother was from that area, and my dad was from this area. I don't know how much history do you want. We -- we -- we gave you that history with the original EIS. And I understand you are pushed from the headquarters, from the top people, from the President. I understand that, but you need to let them know we are here, what do we benefit?

This NPR-A, you have NPR-A impact funds that's -- that goes to the city governments, and we have to fight with our own neighbors to get a little bit of that to help with our community. You guys have not addressed the issue of direct impact. Nuiqsut is the one that's directly impacted by the industry, and yet no one in the whole state will recognize that, because they think it will only benefit Nuiqsut, when Nuiqsut should be the one to be benefited. We are directly impacted. Nobody gets that. And yet there is no one on our behalf fighting for our voice. What are we getting for being directly impacted by the industry? We've had to learn the Western way of life, and learn to play your game through our corporation, and we -- and we try hard to benefit our people. Yes, we do get royalty because we fight hard for it. We had to learn to play your game. We had no choice. We may not have degrees, but I want you -- I want you to know that we are somebody, and our voices need to be heard back at your headquarters. Thank you.

[Response to 66.001]

The BLM monitors lessees' and permittees' compliance with an approved plan of operation and with the requirements of laws, regulations, lease stipulations, and permit terms and conditions. This monitoring is thorough and sufficient. For example, for winter exploration work, the BLM staff conducts compliance monitoring during the construction of ice roads and pads to assure that they are built in conformance with the approved plan and relevant requirements. During the drilling phase, a petroleum engineer is on site for many weeks to assure compliance with all drilling requirements and other monitoring is undertaken to ensure the adequate condition of the ice pads and roads and that procedures are in conformance with the plan and relevant requirements. As the drilling operation is removed at the end of the drilling season, monitoring occurs to ensure that clean up is conducted properly. In the summer additional monitoring takes place to assure that residual debris is removed in compliance with the plan and relevant requirements.

[Response to 66.002]

The BLM monitors lessees' and permittees' compliance with an approved plan of operation and with the requirements of laws, regulations, lease stipulations, and permit terms and conditions. This monitoring is thorough and sufficient. For example, for winter exploration work, the BLM staff conducts compliance monitoring during the construction of ice roads and pads to assure that they are built in conformance with the approved plan and relevant requirements. During the drilling phase, a petroleum engineer is on site for many weeks to assure compliance with all drilling requirements and other monitoring is undertaken to ensure the adequate condition of the ice pads and roads and that procedures are in conformance with the plan and relevant requirements. As the drilling operation is removed at the end of the drilling season, monitoring occurs to ensure that clean up is conducted properly. In the summer additional monitoring takes place to assure that residual debris is removed in compliance with the plan and relevant requirements.

COMMUNICATION NUMBER 67

From Carl Brower

Nuiqsut Mayor, speaker at Nuiqsut Meeting October 11, 2007

I'm Carl Brower, a subsistence hunter, a whaler, also the mayor of Nuiqsut. I'd like to, first of all, thank you guys for coming. And as I was listening to our Elders, our people of this village in agreeing with Alternative A. And I also agree with that. As a subsistence traveler and a subsistence hunter in that area, especially in the west side of Teshekpuk on that corner of that side, I got -- my family got a dry rack over there we use for subsistence. And I've been fighting for -- fighting this since the mid-eighties, early nineties, and I'm here again 20 years -- 20 years and still fighting it. Twenty years ago we -- we fought this to keep the oil industry out of the Teshekpuk because of the -- the importance of it. And now I travel from here to go to Barrow, to go whaling, and go whaling here. And I'm impacted by the industrial already within the last five, six years traveling that route. Now I have to travel after two or three days just to get over there and just to get back before the snow melts. Because of the seismic people and industry people, they damage the snow over there making -- making ice roads and a Rologon trail. My recent one was three years ago. I didn't know they had a Rologon trail there. And I was coming back home, and it was whiteout, and I all of a sudden -- that threw me off my snow machine. It took me about five or ten minutes to get up from the ground. And here I was all alone out there, no help, a hundred miles away. If I didn't get back up, I wouldn't be here.

So I am being impacted already by the oil -- oil industry just traveling from this village to Barrow to do subsistence. And -- and that -- that -- that -- that hurts me very bad. And now you guys want to go to Teshekpuk area where my dad, me, my grandfather used to hunt caribou and hunt geese. Now, if that -- if industry gets there, then where am I going to take my kids?

That's all. As for supporting Alternative A, I will agree with the -- the village on supporting Alternative A. Thank you.

Second Testimony:

I won't add on too much. [67.001] I just wanted to add on -- add on to my testimony that you listen to the -- all the village's subsistence users, the hunters here, and I would like you guys to add on, on your EIS, the mitigations for the subsistence users, to compensate the subsistence users on their way of life and their hunting and how far they have to travel to go to do their hunting. Thank you.

[Response to 67.001]

Congress established the NPR-A Impact Fund to provide monies to those communities impacted by oil and gas activity in the NPR-A. This Federal law requires that 50% of the sales, rentals and bonus royalties from any leasing in the NPR-A be given to the state for them to distribute to "subdivisions of the State most directly or severely impacted by development of oil and gas" in the NPR-A (PL 96-514). Under State law (AS 37.05.553) the funds received are placed in a National Petroleum Reserve-Alaska Special Revenue Fund, and are distributed via a grant program (19 AAC 50) administered by the Department of Commerce, Community and Economic Development. The BLM does not have the authority to require permittees to provide economic compensation to individuals as part of their permit requirements.

COMMUNICATION NUMBER 68**From George Agnasagga****Wainwright resident, speaker at Wainwright Meeting September 26, 2007**

Good evening. My name is George Agnasagga and I'm representing myself as an Eskimo from Wainwright and this area. You know, looking into those alternatives, you look at Alternative A, it's all – it's an area all by itself with no gateway either way, so it's closed -- closed. And my feeling is that if that's the way we go, it's not going to do us any good, because we'll be protecting the caribou that are fawning but if there's the industrial (ph) activities going on around that area, the caribou won't be able to come over this way to Wainwright because they'll be blocked off. And that's why I am -- I am against Alternative A. I kind of like Alternative B, because it would not only serve the oil companies but it will also serve us, providing there's some stipulations where the animals, the birds, the polar bears, caribous, foxes, will all be protected and not just -- and not disturbed. **[68.001]** And also one other stipulation I'd like to see is that because the caribou calve in that area, there should be an open area going to the west -- toward the west from that area, the Teshekpuk area so that it would be open and wide open.

My feeling is that we could do some oil activities in that area providing we are -- we are Natives or villages knows what is going on at all times so that we will know that the animals are being protected and that they are free to roam without being disturbed. I like -- the other reason I like Alternative D is that the lake itself will not be disturbed and also there's the buffer areas will be sufficient enough to that any birds that is nesting around that area will not be disturbed.

The reason I'm giving this testimony tonight is because that herds -- the caribou herds that calve in that area eventually comes down to Wainwright usually the middle part of August through October, they'll be coming -- traveling in either toward Barrow, Atqasuk, in to Wainwright and on down south. And I wouldn't like to see that -- the migration of the caribou being disturbed in any way. We have known that years ago the caribou used to be very scared of any humans on sight they'll take off, but today they're -- I don't know what it is, I think they are -- they are more tamer than they used to be. But still we need to protect them. Thank you.

[Response to 68.001]

The essence of the comment seems to be the speaker's desire to assure that caribou that calve in the Northeast NPR-A are not impeded from moving to the west out of the planning area and to areas near Wainwright where they will serve important subsistence needs. Each alternative contains measures designed to protect caribou movements. None of the alternatives totally prevents oil leasing in the area between calving grounds north, east, and south of Teshekpuk Lake. To the extent that such a provision was desired by the speaker, it is contrary to the purpose and need of the IAP/EIS, as explained under the heading "Making Less land Available for Leasing" in the subsection in Chapter 2 titled "Alternatives Considered but Eliminated from Detailed Analysis."

COMMUNICATION NUMBER 69

From Joseph Ahmaogak

Wainwright resident, speaker at Wainwright Meeting September 26, 2007

My name is Joseph Ahmaogak, I'm a lifelong resident of Wainwright, I'm a member of many organizations here in Wainwright and above that, I'm also the city Mayor. And tonight I'll be talking or giving testimony as a subsistence hunter and a lifelong resident of Wainwright.

[69.001] With these alternatives that are being proposed and one needs to be selected, there's a lot of questions that are unanswered or there's words in the alternatives that are lacking. And one is to include all of the animals on there, including the polar bear habitat, and winter grounds that they have in the northeast portion of the Northeast NPRA planning area.

Because of all the animals that live and molt and calve in that area, should any activity be happening in the future that utmost care be taken in those areas because in that NP -- northeast plan, the portion that shows where the calving grounds of the caribou and the molting places of the geese, and all the animals that used that area for hundreds and hundreds of years since we know, that great care -- we're not against all development or anything of that nature but to protect our land, our cultural subsistence use areas, and keeping that in front of any type of recoverable oil that may be found there, if there is to be recoverable oil and it is to be near the size of Prudhoe in 30 years, will 30 years be enough or will that 30 years of oil and the impacts that it brings be worth more than losing the cultural and subsistence use areas of our animals for hundreds of years after that?

And those are the types of things the decision makers need to keep in mind when activity or exploration or development is to be done in these areas that the communities of Nuiqsut and Barrow and Wainwright, though we're hundreds of miles away, the caribou herds that live there migrate throughout the North Slope and we see them every year, so when they're being affected in that area near Teshekpuk Lake where it's shown that only certain birds nest there, it's an important calving ground for our caribou, for the Teshekpuk herd. That it affects us also, though we're hundreds of miles away and the communities from here and in between. **[69.002]** So unless the wording is clear that traditional knowledge will be brought into the decision making and a plan that shows sound development will occur, and the wording where mitigation of impacts to our subsistence foods will help the community as a whole, then I'd be happy to say go ahead with those on paper with mitigation plans in place or some fixes to the NPRA impact mitigation fund. That helps a subsistent user who is affected by displacement of animals and impacts to their subsistence use grounds.

Where other than limiting the impact funds to schools, water, sewer, fire department, things in the community that the subsistence user be put -- kept in mind because we pay \$5.00 a gallon for gas. Our fuel oil prices are subsidized, yet they're still high. Our electricity is high. And all the oil and gas that is being brought out comes from our land and we don't see any help in that place where fuel is brought down to a lower price or provided in the community at reasonable costs because of exploration and development. We as subsistence hunters, because the animals are displaced through exploration, need some type of help in that way also. So with how important the lands are over there and the high potential of oil, recoverable oil there, without having those plans in place that I said earlier, I would still have to say Alternative A. Because none of those things are being pointed out to where our community members and the animals calving grounds, until it shows that they will be protected and explored and developed soundly and safely to where it does not adversely impact their calving and molting areas, my choice is still -- be A until the wording and the clarifications and the additions that are needed to the subsistence hunters for the communities that are being affected by the animals that live there.

So I'd like to say again I'm not against oil and gas development, but until those are clarified, and to -- and traditional knowledge and all of the communities are apart of the decision making, not just being heard and left out with the decisions that are made later because these are the important parts of that area. But when you look at the whole North Slope and the whole migration routes and the calving grounds from both the North -- the Western Arctic herd and the Teshekpuk herd, they co-mingle during their migratory times of the year, so when anything happens that impacts their migratory routes by development or their displacement, their routes will change from the routes they've used for hundreds of years so we will be impacted in the future.

I thank you all for coming, giving me this time to comment and until those things are shown and proven that they will be done with accordance to our elders wishes that development and exploration will be done soundly, traditional knowledge be included, all the animals in the habitat area or the area that are critical to their being, the animals, that I chose no action Alternative A until those things are shown. Thank you.

[Response to 69.001]

Polar bears and polar bear habitat are addressed in the Alternative Analysis and the Cumulative Impacts analysis sections of the IAP/EIS.

[Response to 69.002]

In order to assure that traditional knowledge is captured in the subsistence consultation process described in ROP H-1 for the Preferred Alternative, the first sentence of that ROP's subparagraph (a.) has been edited to the following: "Before submitting an application to the BLM, the applicant shall consult with directly affected subsistence communities, the NSB, and the National Petroleum Reserve - Alaska Subsistence Advisory Panel to discuss the siting, timing, and methods of their proposed operations to help discover local traditional and scientific knowledge, resulting in measures that minimize impacts to subsistence uses."

COMMUNICATION NUMBER 70

From John McComb

Arlington, Virginia resident, speaker at Washington, D.C Meeting October 4, 2007

Hi, I'm John McComb, and I currently live in Arlington, Virginia. I've been involved with, at various levels, with the protection of Alaska's special places for over 40 years, which I think may be a little bit longer than Mike Daulton has been alive, so, thus it should be no surprise that I favor Alternative A, the "No Action Alternative." Why? The unfortunately named, National Petroleum Reserve, Alaska has many other extremely valuable resources beyond mineral extraction. This has been recognized by previous administration decision, both Democratic and Republican, not to lease certain areas. Even if oil were the only consideration, why drill it now? What is a reserve if our policy is to drain America first? If it is valuable now, it will be much more valuable in the future.

I've always been skeptical about whether this administration pays any attention to comments received at hearings such as this. This decision is not a cold, cut and dry factual analysis. It's about value judgments, about what we, as Americans, value and what we bequeath to our children. [70.001] This skepticism is somewhat reenforced by reliable reports that, for some people, the web form, accepting comments, did not, and maybe still does not work, and this went on for weeks. I'm in the business. I have created many such forms. All of which worked for everyone from the get go. Thank you.

[Response to 70.001]

One glitch in the webform may have frustrated some users for the early part of the comment period, but once reported, the problem was promptly corrected. Over 42,000 comments were received through the webform.

COMMUNICATION NUMBER 75**From Ian Ausprey**

I write with concern regarding the BLMs decisions to open sections of the NPR-A previously identified as the Teshekpuk Lake Special Area. Recognizing the potential magnitude of fossil fuel extraction development in the NPR-A, I am concerned that adverse effects on wildlife will grow as development becomes more dense and more widely distributed. While the BLM has suggested maximum expected limits for growth (ie. 3850 acres of gravel in the next century in the NE NPR-A p. 4-648), it is prudent to recognize that continued global use of fossil fuels will put pressure on industry to seek out lower quality products with technologies hitherto unknown. Therefore, when debating deleterious effects on wildlife, it is important to consider long-term projections and set limits for future industrial growth. The following argue from the perspective of a future North Slope dominated by industrial growth.

1. [75.001] Potential for habitat fragmentation of goose molting areas by overflights in Alternative D.

While Alternative D appears to mitigate potential disturbance affects in goose molting habitats north of Teshekpuk Lake, I am concerned that overflights to isolated industrial infrastructure among the determined Goose Molting Areas (GMAs) will create noise disturbances to molting geese. Due to the highly fragmented nature of both GMAs and areas open to industry, it appears inevitable that molting geese would be exposed to noise by aircraft. Frequently used flight paths could thereby fragment existing GMAs and increase the edge effects associated with otherwise isolated points of industry. Given the intersection of GMAs with important caribou mosquito relief areas, it seems prudent to pursue Alternative A.

2. [75.002] Cumulative long-term affects of predators on surrounding breeding birds.

Given the current mixed results regarding the attraction of predators to infrastructure and ultimate pressures on nesting birds, it is prudent to assume that human industry has potential to increase risk of nest predation. This assumption is particularly valid for Glaucous Gulls. It is widely recognized that gull species such as Herring Gulls and Great Black-backed Gulls have increased in numbers as humans provide more artificial food sources. Some monitoring projects on seabird nesting colonies intentionally destroy gull nests and/or kill adult gulls in an attempt to rectify this human-induced pressure. The Wildlife Conservation Society is currently in the process of examining the dynamic of predators, infrastructure and breeding productivity. The results from that project should be integrated into future lease stipulations.

3. [75.003] Lack of information regarding source-sink dynamics for breeding birds.

Little is known about which habitats within the NPR-A act as sources for gene flow and breeding productivity. I am concerned that as development becomes more dense, areas currently acting as sources could be deteriorated, increasing the number of habitat sinks existing in the NPR-A.

4. [75.004] Lack of future industrial growth limits.

As the majority of the NPR-A is leased to oil industry, it becomes increasingly apparent that most of Alaskas North Slope habitat will be affected by industrial activity. Over the short term, the slow growth of isolated industrial patches may seem less consequential. But in 100 years, much of the North Slope ecosystem west of the Dalton Highway will harbor extraction industry. I am concerned that without predetermined controls on the rate of industrial expansion,

landscape-scale effects on wildlife will not be apparent until a critical juncture. If the entire North Slope ecosystem is degraded by this expansion (with ecological ramifications mentioned in Points 2 & 3) then population-scale effects will become more apparent than can necessarily be measured by current short-term, local studies. The BLM needs to set limits regarding the density, extent and scale of future industrial growth to protect against future fragmentation and deterioration of the entire North Slope ecosystem.

Thank you for your attention.

[Response to 75.001]

Lease Stipulation K-4 in the Supplemental IAP/EIS provides for protection of molting geese from aircraft noise with restrictions placed on aircraft use in the goose molting area between June 15 and August 20.

[Response to 75.002]

BLM is currently funding a study looking at the potential effects of glaucous gull predation in the NPR-A. The results from the Wildlife Conservation Study are not yet public so they can not be incorporated into lease stipulations at this time. When those results become available they will be incorporated into future stipulations or required operating procedures as warranted.

[Response to 75.003]

BLM has many Stipulations and Required Operating Procedures in place in order to protect the avian resources of the NPR-A.

[Response to 75.004]

Given the current level of knowledge of both the location of technically recoverable oil and gas and the thresholds at which resources may reach a "critical juncture," it is premature to set extensive density, extent, and scale limits. Under Alternative D, the Preferred Alternative, limits are however established regarding the amount of gravel footprint that would be permitted. The deferral of leasing in a substantial portion of the planning area under Alternative D (as well as Alternatives A and B) limits the extent of development, while various setbacks prevent the introduction of oil and gas infrastructure into areas that are considered especially important to protect.

COMMUNICATION NUMBER 76

From Nathan Coutsubos et. al

Ph.D. Student, UAF Resilience and Adaptation Program

Strengths and Weaknesses of the Cumulative Impacts Analysis
in the Northeast National Petroleum Reserve-Alaska
Draft Supplemental Integrated Activity Plan / Environmental Impact Statement
(US Dept of the Interior, Bureau of Land Management)
10 October 2007
Fairbanks, Alaska

prepared by:

Nathan Coutsubos, PhD student, Department of Biology and Wildlife, Institute of Arctic
Biology, University of Alaska Fairbanks
Archana Bali, PhD student, Natural Resources Management, University of Alaska Fairbanks
Karen Hibbard-Rode, PhD student, Department of Biology and Wildlife, Institute of Arctic
Biology, University of Alaska Fairbanks
Jill Maynard, Master's student, Natural Resources Management, University of Alaska
Fairbanks
Chanda Meek, PhD student, Department of Resources Management, University of Alaska
Fairbanks
Tracey Smith, Master's student, Northern Studies Program, University of Alaska Fairbanks
Prof. F. Stuart Chapin III, Department of Biology and Wildlife, Institute of Arctic Biology,
University of Alaska Fairbanks
Assoc. Prof. Gary Kofinas, Department of Resources Management, Institute of Arctic Biology,
University of Alaska Fairbanks

contact email for Nathan Coutsubos: ftnpc@uaf.edu

The reviewers are faculty and students affiliated with the Resilience and Adaptation Program (RAP) at the University of Alaska Fairbanks. RAP is an interdisciplinary graduate program that brings together experts in biology, political science, economics, anthropology, resource management, and other fields. We study sustainability, ecological and social resilience, and patterns and processes of the changing environment, producing knowledge that leads to better understanding and management of the human and natural spheres.

The comments contained herein are strictly our own, and do not necessarily represent the positions and opinions of the University of Alaska Fairbanks, the departments to which we belong, and/or the Resilience and Adaptation Program as a whole.

Scope of this Review

This review focuses on the Cumulative Impacts Analysis (section 4.7) of the NE NPRA Draft Supplemental IAP / EIS, with other sections referenced as necessary. We start by discussing two general topics: structure and transparency of the text, and thresholds and combining impacts. Following this are discussions of seven specific sections of the IAP / EIS: climate change, birds, mammals, threatened and endangered species, subsistence, sociocultural systems, and environmental justice.

Thank you for considering our comments.

I. Structure and Transparency of the Text

Karen Hibbard-Rode (and the rest of the reviewers)

We recognize and appreciate the huge amount of work that must have gone into preparing such an expansive document. We would like to suggest, however, that some revisions be made to writing and transparency throughout the Supplement. The language and writing style of the supplement reduces accessibility to the reader. Paragraphs read like lists of impacts instead of integrative concepts and many sentences sound hollow. More powerful sentences containing important information are buried in the middle of paragraphs and then forgotten. The reader is left wondering "what does this all add up to?" Instead, the reader should be able to say, "I now have a clear picture of the suite of cumulative impacts to the North Slope."

The document also lacks transparency. Who authors each section of the document and what are their sources? How much is science-based and how often is local knowledge referenced? Most importantly, out of what process or communications did concluding statements arise? We suggest that revisions are made to increase transparency, readability, and reliability of the supplement, so that readers may judge and trust the EIS process.

II. The Cumulative Impacts Analysis: Thresholds and Combining Impacts

Tracey Smith

[76.001] The NE NPR-A Draft Supplemental EIS generally overlooks thresholds in its discussion of cumulative effects of oil and gas development, and specifically in the Sociocultural section, 4.7.7.13. For example, there are repeated references to the resilience of the Inupiat people (pgs 4-814 and 4-820-821), without acknowledging the Inupiat will eventually reach a threshold of change at which point their resilience to change may be diminished. While mitigative measures may combat inherent thresholds, one of the key reasons for conducting a cumulative impact assessment is to consider and identify possible thresholds.

[76.002] In addition, the draft supplemental does not acknowledge the existence of value-based thresholds beyond which no more development should occur. For example, "health issues caused by persistent and short-term pollution could shorten the life span of elders, who are the key repositories of traditional and cultural knowledge (p 4-822)." This statement not only suggests the lives of Inupiat elders would be expendable or their shortened lifespans acceptable were it not for their "repository" role, but it makes one wonder how many elders must succumb to pollution before impacts are considered to be too significant to allow the project to proceed. This is one example of the need for identification of value-based thresholds for levels of impacts from industrial development.

[76.003] This lack of attention to thresholds can be traced to the types of cumulative effects identified in Section 4.7.1.3, page 4-618: additive, countervailing, and synergistic. When there are additive effects of development, value-based thresholds could be identified. Unfortunately, synergistic impacts have been discounted in this analysis because, while one could argue BLM has a responsibility to consider plausible synergistic impacts, they have chosen to only discuss known synergistic impacts. Because resilience thresholds can only occur in the presence of synergistic or non-linear interactions (see Fig. 1 below), their method of analysis has resulted in few, if any, thresholds of resiliency being identified.

Ideally, a cumulative impacts assessment must do two things: 1) trace specific impacts through time and determine how a proposed development will affect these specific impacts, and 2) demonstrate how impacts of past, present, future, and proposed developments may interact once combined to produce additional, emergent impacts.

While the Draft Supplemental EIS discusses in great detail the specific past and possible future effects of oil and gas development on the North Slope, they fail to combine expected impacts in any systematic or coherent manner.

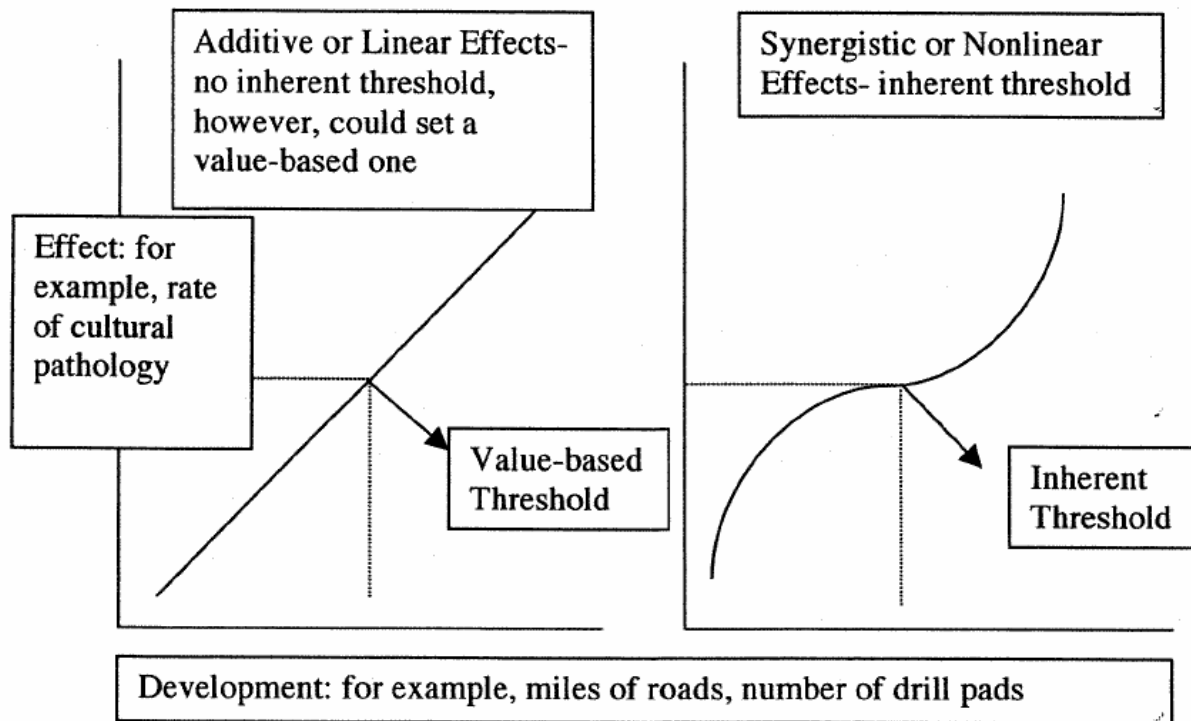


Fig. 1: Two types of thresholds. Additive effects do not experience thresholds, although they may be assigned arbitrary, value-based thresholds. Synergistic effects will experience thresholds at some point. It is critical that a cumulative effects assessment considers and discusses both types of thresholds.

[76.004] The emergent properties of combining specific effects could be identified by taking the existing 300 pages of specific cumulative impacts and combining them in a simulation model. Not only would this model be a more accessible and instructive way of presenting the cumulative effects analysis, but it would also show how the myriad of effects may interact with each other. By being able to adjust the intensity and spatial arrangement of development and other variables, the public and decision-makers will quickly gain a greater understanding of what the combined cumulative impacts may be of different development scenarios.

III. Climate Change

Jill Maynard and Terry Chapin

We felt that certain aspects of climate change were sufficiently addressed, but that it was presented in isolation from other sections, creating an incomplete picture of the cumulative impacts. We would suggest that climate change be integrated more thoroughly into the other sections in order to paint a more transparent portrait of the cumulative effects of this potential development. [76.005] The climate change sections often portrayed a skeptical outlook on the soundness of climate change science, using phrases such as "so called greenhouse gases" (section 4.7.7.1.3). [76.006] Additionally, the section did cover certain potential impacts that climate change could have to exploration, development and production of oil and gas, but fails to address the very essential role that the products produced by oil and gas production have on

climate change. We did not know if this analysis fell within the scope of an EIS, but it a crucial matter that must be addressed if we are to truly examine the cumulative impacts of oil and gas development.

IV. Birds

Nathan Coutsubos

The Cumulative Impacts Analysis of birds (section 4.7.7.8, pgs 4-732 to 4-747) is a reasonably thorough qualitative assessment of potential impacts on birds. There are three major concerns with the analysis.

[76.007] First, as with most of the Cumulative Impacts Analysis, only additive effects are assumed to obtain. The section would be significantly strengthened by the consistent consideration of synergistic and countervailing impacts, and of non-linear thresholds.

[76.008] Second, nowhere in the assessment are given quantitative estimates of impacts: number of birds displaced, killed, produced, etc. The section would be significantly strengthened if qualitative descriptors such as "predicted to be small," "some birds may habituate," etc., are replaced with numerical estimates based on statistically rigorous best-available science.

[76.009] Third, a hidden assumption of the section, and of all other bird sections in the overall document (eg, 4.3.8, 4.4.8, 4.5.8, 4.6.8, 4.8.8, 4.9.8, 4.10.8, among others) is that birds that are displaced by development activities are able to do three things: 1) survive, 2) find acceptable habitat elsewhere, and 3) reproduce successfully. For example, 4.8.8 describes this as "likely" (pg 4-869). Among North Slope ornithologists, this is sometimes referred to as the "Vacant Hotel Hypothesis," and it is a matter of considerable contention. Currently there is no conclusive evidence to either accept or reject this hypothesis, and the correct way to describe the likelihood of either outcome (birds displaced but not harmed vs. birds displaced and harmed) is unknown. This section would be significantly strengthened by the explicit recognition that the scientific community does not know what happens to birds that have been displaced by development activities.

V. Mammals

Karen Hibbard-Rode and Gary Kofinas

Section 4.7.7.9 gives a thorough discussion of cumulative oil and gas impacts to habitat and movements of caribou, with some discussion of impacts to other species. We found the sentences about plausible future effects under climate change and development helpful (for example, thinking about the impacts to mammal habitat and movements if ice roads are no longer feasible). Considering future scenarios allowed us to more clearly picture and judge cumulative impacts to mammals, where the information was available.

[76.010] Amount and quality of habitat, however, were discussed but not adequately analyzed to consider plausible cumulative impacts. Effect of habitat loss on mammals is not a linear, additive relationship. This is due to differences in habitat quality and use across time and space. One could calculate the value to mammals of habitat lost by multiplying:

habitat loss x habitat quality x habitat use = true amount (value) of lost habitat

This value should be considered in a temporal and spatial context. For example, while 18,342 acres may be the total footprint of development construction, the effect is likely to be greater for

some animals at certain times of year. Furthermore it is not useful to focus on the road footprint, for example, without accounting for the density of roads or where roads appear relative to habitat use. Different scenarios of road and pipeline spacing will have different impacts on habitat and its use.

[76.011] We'd also like to suggest a revision to the way population trends are considered. Comments about change in caribou populations (4-748) do not account for the low frequency of census counts in several herds. The Central Arctic Herd (CAH) and Porcupine Caribou Herd (PCH) have not been counted for several years. The suggestion that herd numbers are stable is not empirically based. **[76.012]** It should also be noted that population level changes in the CAH since oil field development (4-751) are recent events-long term studies are needed to understand effects of infrastructure and human activity; population cycles of caribou may be over 100 years. **[76.013]** There is not understanding of if and how climate conditions have confounded attribution of changes in population to development. **[76.014]** Likewise, the statement that hunting does not adversely effect mammal populations is shortsighted because adverse affects will depend on population levels, relative to possible population cycles.

[76.015] Isolated factors (such as hunting or seismic activity) may not have population level effects, but the accumulation of impacts may-this could be more adequately addressed by the cumulative effects analysis. **[76.016]** The discussion of caribou does not account for the heterogeneity in ecological conditions, nor does it account for the heterogeneity in the possible effects on caribou populations. Countervailing effects of development (ex. increase in Arctic Fox) often have negative ecological interactions with other species (ex. nesting or molting birds more vulnerable to predation).

[76.017] The accumulation of impacts from habitat loss plus barriers to movement should be discussed more explicitly, especially under a climate change scenario in which distribution of favorable habitats may shift. The climate change subsection is thorough, but reads as a list of impacts rather than a discussion of how all the impacts may accumulate. Since resilience of caribou and other mammal populations depends largely on flexibility and mobility, the impact of development on mammals is best stated as a loss of ecological resilience.

VI. Threatened and Endangered Species

Archana Bali

[76.018] This section seems to have asked reasonable questions regarding the impacts on threatened species. More could have been done to answer them. They could have used surrogate examples, eg, impact of oil spills on eider colonies beyond 40 miles, impact of noise and traffic on whales.

[76.019] There is still a reasonably good documentation of the potential threats. But mitigating these threats (recommendations) has not been addressed in the planning. The four alternatives don't necessarily address head-on conservation issues. Instead possible outcomes on a continuum of bad to worse are given. Specific requirements under the Endangered Species Act and associated laws are not addressed.

Following are specific comments relating to bowhead whales, eiders, and polar bears.

[76.020] Bowhead whale (sections 3.3.8.1 and 4.7.7.10-a): There is documentation of serious effects on whales (serious injuries and likely deaths) due to increase in ship traffic and undersea explorations other than just "avoidance behavior" and this evidence has not been incorporated in the analysis. Also, even the assumed minimal impact of "mere avoidance" results in

displacement of whales from migrating corridors and feeding sites through out the BCB range, and this can have potentially drastic impacts on the population which is still recovering.

[76.021] Spectacled and Steller's eiders (sections 3.3.8.2, 3.3.8.3 and 4.7.7.10-b): Even though the seismic surveys and exploration drilling activities would occur during the winter months when eiders are not present, these activities may still result in habitat degradation and habitat loss and increased vulnerability to predation. Therefore they may have direct impacts on the species. **[76.022]** In addition, given that a significant area proposed for development is being used by eiders, any displacement from feeding or nesting sites, either permanent or even temporary, will obviously have negative impacts on the long-term population viability of the two species. **[76.023]** The eiders breed along the northwest coast, in the proposed sites of oil exploration. The assumption made in the analysis of impacts that 40 miles is a safe distance between eider colonies and point of oil and gas exploration has not been substantiated with any evidence.

Polar bear (from section 3.3.8.4 and 4.7.7.10-c): This is a very habitat specific species, and the pregnant females and cubs are especially sensitive to anthropogenic disturbance. The species has a high site-fidelity in denning areas and there are important denning sites located across area proposed for oil and gas development. This may have severe consequences on breeding and cub survival and therefore this poses additional threats to a species that is already vulnerable due to impacts of global warming, and is under consideration to be put on the endangered species list. Meanwhile, the World Conservation Union (IUCN) has already declared polar bear to be an endangered species.

VII. Subsistence

Jill Maynard

The material provided in the Subsistence section focused largely on impacts to bowhead whale and caribou populations and harvesting. Predominant attention is given to these subsistence species, causing disproportionate attention to other potentially significant species, such as birds, fish and smaller fur-bearers.

[76.024] In Section 4.7.7.12.2, the document addresses the potential for there to be a decrease in certain subsistence species, such as bowhead whales, which will create a corresponding increase in the harvest of other species, such as land mammals and fish. It suggests that this could result in "major negative effects to subsistence uses," but there is not supporting information looking at the synergistic impacts to actual species loss, impacts to subsistence harvest and socio-cultural losses from declines in specific subsistence species.

Other parts of the Subsistence section address a series of potential impacts to subsistence species and individuals ability to harvest them, such as dispersal of herds and increased travel distances for hunters. **[76.025]** However, it failed to identify and address certain thresholds, such as those related to the ability of herds to keep their same range, and hunter's capacity to continue hunting in the face of increased travel distances and infrastructure barriers. We suggest that the document identify thresholds that address the ability of subsistence species and hunters to maintain, and vulnerability to losing the capacity to maintain, resilience.

VIII. Sociocultural Systems

Chanda Meek

The analysis of sociocultural systems (sections 4.3.13, 4.4.13, 4.5.13,

4.6.13, 4.8.13, 4.9.13, and 4.10.13) uses a historical timeline of development and its subsequent impacts upon the persistence of Iñupiat subsistence practices, social networks, and institutions as a proxy for sociocultural system resilience or general well-being. **[76.026]** Social drivers of change affect the ability of individuals to interact in society, subsist, share, and sustain institutions. These drivers and how they are affected by oil and gas development should be examined in greater depth. The Alaska OCS Social Indicators System suggests the measurement of the following categories of indicators: 1) cultural continuity, 2) the extent to which individuals and families are able to function well in society, 3) command over goods and services, and 4) social opportunities and participation.

The sociocultural analysis in the BLM Supplemental IAP/EIS is largely descriptive and qualitative, and as such does not include measurable indicators that would allow BLM or other agencies to systematically assess community wellness, social resilience and vulnerability through time. As such, the reader cannot examine oil and gas development as a unique driver of social change and may be inadequately informed for making present-day and future decisions about mitigating strategies.

Dr. Jack Kruse at the University of Alaska Anchorage has written a guide, "Indicators of Social, Economic, and Cultural Cumulative Effects Resulting from Petroleum Development in Alaska: a Review" for the Joint Review Panel of the Mackenzie Gas Project in Canada that would be helpful in structuring scientific social impact assessment analyses in the future.

IX. Environmental Justice

Nathan Coutsubos and Karen Hibbard-Rode

The analysis of cumulative impacts with regards to environmental justice (section 4.7.7.14, pgs 4-823 to 4-827) is a welcome addition to the document. The section provides a wide-ranging, but skeletal, qualitative description of the issues. This section and the management alternatives (4.3.14, 4.4.14, 4.5.14, 4.6.14) explicitly recognize that there will be environmental justice impacts (environmental injustice) to a greater or lesser degree with reference to North Slope Iñupiat. Still, there are a number of ways in which this section should be deepened.

[76.027] First, environmental justice issues are scattered throughout the analysis in sections relating to Subsistence (4.7.7.12), Sociocultural Systems (4.7.7.13), Environmental Justice (4.7.7.14), Economy (4.7.7.18), and Public Health (4.7.7.19), among others. The Environmental Justice section itself contains essentially no unique information. The section should be significantly strengthened by developing and making explicit the connections between these sections within the environmental justice section itself, rather than somewhat obliquely referring the reader to the other sections as it does now.

[76.028] Second, environmental justice impacts do not have quantitative assessments anywhere in the analysis. The analysis should be significantly strengthened by replacing qualitative descriptors with numerical estimates based on statistically rigorous best-available science.

[76.029] Third, guidelines and thresholds for possible future environmental justice impacts are not included in the analysis. The analysis should be significantly strengthened by making explicit what levels of environmental justice impacts are acceptable and unacceptable.

[76.030] Fourth, the analysis assumes that only an indirect connection exists between development and environmental justice impacts: development may negatively affect subsistence, and negative impacts on subsistence may then create negative environmental

justice issues. Instead, the section should directly assess possible impacts of development on environmental justice, as the Public Health and other sections do.

[76.031] Fifth, this section does not address legacy impacts on environmental justice beyond the production life of possible new infrastructure. It should address how long environmental justice impacts to subsistence, public health, and the rest, are expected to persist after oil production ends in NE NPRA.

[Response to 76.001]

NEPA analyses use the best available data to determine the environmental consequences of a proposed action. If data existed regarding resiliency thresholds among the Iñupiat, this information would be utilized within the NEPA analysis. The information that does exist regarding resiliency is located within the Future Effects and Their Accumulation under Cumulative Impacts: Sociocultural Systems in Chapter 4.

[Response to 76.002]

Given the dearth of information regarding the identification of value-based thresholds regarding the amount of oil and gas development on the North Slope by both the residents of the NPR-A and the nation, this topic was not considered within the SEIS. The statement that you refer to in your comment by no means suggests that elders are expendable or only have value as repositories of information. The purpose of a NEPA analysis is to identify potential impacts as a result of proposed or reasonably foreseeable actions. The statement that you refer to is the identification of negative consequences that could result to the Iñupiat sociocultural system due to environmental pollution, and affirms the great respect for elders as per the Iñupiat Ilitqusiatic.

[Response to 76.003]

The Supplemental IAP/EIS relies on the best available data to identify the environmental consequences. The BLM has not developed its analysis based on very speculative impacts. Thresholds have not been identified because of the great predictive uncertainties associated with complex ecological and sociological factors and because, even if environmental and social systems were less complex, there is great uncertainty surrounding which potential development may occur and in what matter.

[Response to 76.004]

Given that the location of oil in the planning area is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown, that there is a lack of precise surface resource and use information for many resources and uses, and that a relatively small amount of total cumulative impacts are likely to be attributable to the alternatives considered in this Supplemental IAP/EIS, development of complex modeling techniques would be of relatively little value for decision making.

[Response to 76.005]

The qualifier "so called greenhouse gases" is not intended to express a "skeptical outlook on the soundness of climate change science." It is simply a recognition that describing how certain atmospheric constituents preferentially transmit or block different wavelengths of light does not represent how heat accumulates in a greenhouse. Put simply, greenhouses warm because they reduce convective heat loss by impeding the wind, not because the "glass" preferentially transmits short wavelength light while blocking longer wavelengths.

[Response to 76.006]

Environmental and economic impacts of greenhouse gas emissions from oil and gas consumption are not effects of the Northeast NPR-A planning decision as defined by the Council on Environmental Quality, and thus are not required to be analyzed under NEPA. Greenhouse gas emissions from consumption of NPR-A oil and gas are not direct effects under NEPA because they do not occur at the same time and place as the action. They are also not indirect effects because NPR-A oil and gas leasing and production would not be a proximate cause of greenhouse gas emissions resulting from consumption. Also, because the impacts of

consumption are not direct or indirect effects of the proposed action, a cumulative impact analysis would not reveal an incremental effect attributable to the proposed Northeast NPR-A leasing decision.

There is no reliable methodology to assess the relation between leasing in NPR-A and changes in nationwide or worldwide oil and gas consumption levels. Leasing and future development of NPR-A will not measurably increase consumption, nor would a decision to forego leasing measurably reduce consumption. Consumption of oil and gas is driven by a variety of complex interacting factors including energy costs, energy efficiency, availability of other energy sources, economics, demography, and weather or climate. If the proposed leasing and anticipated development were not to occur in the Northeast NPR-A, consumption levels of oil and gas would essentially be unaffected with the potential production from NPR-A replaced by a combination of imports, fuel switching, and other domestic production. While on a national basis lower levels of domestic oil and gas production could occur and may trigger some modest conservation measures having some benefits in terms of reduced greenhouse gas emissions, no single leasing decision would be expected to result in any discernable responsive conservation measures. This is particularly true with regard to NPR-A where the actual productive capacity is currently an unknown. Furthermore, it is not known whether or to what extent NPR-A oil and gas would be refined into plastics or other products that will not be burned, what mix of vehicles or power plants might utilize the product, or what mitigation measures would offset any such consumption.

Moreover, BLM does not regulate fuel consumption or carbon emissions at any level; nor does BLM dictate the destination of the oil and gas produced from a federal lease or the products to be refined from it, which would determine the emissions produced. Even if it were possible to causally connect greenhouse gas emissions from consumption to leasing in Northeast NPR-A, the effects from consumption are not only speculative but beyond the scope of agency authority or control. While the Energy Information Administration has reported emissions from a variety of petroleum products (e.g., aviation gasoline, motor gasoline, etc.), natural gas and other gaseous fuels (e.g., methane, landfill gas, etc.), electricity, coal, and renewable sources, an attempt to translate this information into emissions from the ultimate consumption of the oil and gas produced from Northeast NPR-A would be a highly speculative exercise unnecessary for the land management decisions for which BLM is responsible.

[Response to 76.007]

The cumulative impact analysis provides a legally sufficient analysis of potential impacts. Synergistic and countervailing impacts have not been identified in detail because of the great predictive uncertainties associated with complex ecological factors and because, even if environmental systems were less complex, there is great uncertainty surrounding which potential development may occur and in what manner.

[Response to 76.008]

The cumulative impact analysis provides a legally sufficient analysis of potential impacts. Quantitative estimates of impacts have not been identified for all resources and uses because of the great predictive uncertainties associated with complex ecological factors and because, even if environmental systems were less complex, there is great uncertainty surrounding which potential development may occur and in what manner. Note that in 2003 the National Research Council stated, "It is impossible to characterize future development infrastructure and activity in areas that have not been fully explored. Until exploration has occurred, the amount, distribution, and exact nature of any extractable hydrocarbon deposits remain unknown. But the amount, distribution, and type of hydrocarbon deposits profoundly influence the nature and

extent of development infrastructure, thus how many roads and pipelines will be needed, and how much activity will occur and when it will occur." (NRC, 2003, p.116)

[Response to 76.009]

Your comment has been incorporated into section 4.8.8 of the Supplemental IAP/EIS.

[Response to 76.010]

Given that the location of oil in the planning area and in much of the North Slope is unknown, that the type of development that would be proposed to extract any oil that might be found is also unknown (NRC 2003), that there is a lack of precise surface resource and use information for many resources and uses, and that perhaps a relatively small amount of total cumulative impacts may be attributable to the alternatives considered in this Supplemental IAP/EIS, the additional methods of evaluating cumulative effects suggested in the comment would add little or no value to the impact analysis. The BLM considers its approach to cumulative impact analysis appropriate for this IAP/EIS.

[Response to 76.011]

The ADFG, NSB and BLM are concerned about the length of time since the last photocensus of the TLH and CAH. Weather and aircraft availability have conspired against photocensus success for several years now. The suggestion of stability is based on other demographic data (e.g. parturition rate and yearling survival) and estimated harvest. The DSEIS does not suggest that the PCH is stable, but points to a 3.5% annual decline since 1989.

[Response to 76.012]

The need for long-term monitoring is addressed in section 2.6 of the Draft and Final IAP/EIS and in section 4.2.3 of the Final IAP/EIS.

[Response to 76.013]

The BLM agrees with this comment and will not assume such understanding during any monitoring efforts.

[Response to 76.014]

It remains the BLM's assumption in this analysis that hunting and trapping will not have adverse population level impacts on wildlife. Those activities are managed by the Federal Subsistence Board and the Alaska Board of Game with the intent of avoiding such impacts. If population levels decline, harvest regulations are expected to follow suit.

[Response to 76.015]

The cumulative effects section acknowledges the potential for population level effects, although not including effects from hunting. That section has been revised to make this potential more clear.

[Response to 76.016]

The discussion of caribou does emphasize that some areas of the NPR-A are evidently more important to caribou in certain seasons than are other areas, and that use of different areas can have consequences on calving success. The text of the cumulative effects section for mammals has been revised to more clearly acknowledge that both calving locations and vegetation patterns may change with climate change. It now also states that depending on how these factors interact with one another and with the location of future development, the potential exists for synergistic impacts resulting in adverse population level responses by caribou. The issue of foxes and other predators on ground nesting birds has been addressed in the bird

sections of the DSEIS.

[Response to 76.017]

The text of the cumulative effects section for mammals has been revised.

[Response to 76.018]

The impacts of oil spills, noise, traffic and other activities associated with oil and gas development and other activities in the planning area and the zone considered for the Cumulative Impacts Analysis are discussed in the analysis of the impacts of individual alternatives and in the Cumulative Effects section of Chapter 4. Where species specific information is sparse or lacking, inferences are drawn from information on other species as appropriate. Nowhere in the IAP/EIS does BLM suggest that its analysis of eider colonies is limited to an area within 40 miles.

[Response to 76.019]

The BLM disagrees. The ROPs and Stipulations (only Stipulations in Alternative A) directly or indirectly provide for avoidance and minimization of effects to listed and proposed species.

The comment does not make clear which "specific requirements" of the ESA and associated laws have not been addressed. The BLM maintains that it is addressing all its legal requirements under the ESA and other laws. BLM is currently in consultation/conference with the USFWS and NOAA-Fisheries and will complete our responsibilities under section 7 of the Endangered Species Act prior to signing the Record of Decision.

[Response to 76.020]

The comment is correct that ship traffic has caused death and injury to multiple species of whales. The analysis of the potential effects of increased ship and barge traffic was not carried through to the Cumulative Effects analysis at the same level of detail as was provided in the direct and indirect impact analysis. The final IAP/EIS includes greater detail in the Cumulative Effects section.

The direct, indirect, and cumulative impact analyses recognize that, although the overt reaction to disturbance is avoidance, the actual effects are unknown and may affect fitness. However, given that the population of Bowhead whales has increased steadily and is currently at historic levels (Angliss and Outlaw 2005, Zeh and Punt 2005), there is no evidence that those effects (if they occur) are severe enough to cause a population-level effect.

[Response to 76.021]

The direct, indirect, and cumulative impacts analyses (4.7.7.10-b) recognize that seismic exploration and exploration drilling can result in changes to vegetation and soils that may impact those areas' ability to provide habitat for eiders. However, the available evidence shows that the majority of those impacts are relatively short-lived and affect only a small area.

Although there is evidence to suggest that predators (primarily foxes) increased in the Prudhoe Bay area as a result of development, current management approaches appear to be successful in limiting attraction to below a detectable level if it occurs. Exploration activities are typically widely spaced between years and do not regularly occur in the same area, although some exploration drilling may occasionally. The only predator of eiders present during exploration activities are foxes. It is unlikely that they would be attracted to exploration, and that sufficient anthropogenic food would be available to increase fox numbers and density, therefore it is unlikely that winter exploration increases vulnerability to predation.

[Response to 76.022]

As noted in the Cumulative Effects assessment (4.7.7.10.b), the maximum habitat impacted due to past, present, and reasonably foreseeable development amounts to 0.46% of the area encompassed by the Eider Breeding Survey. This is a conservative estimate as all that area is not used and does not provide habitat for eiders.

Although the information is limited, what is available does not show that nesting spectacled eiders are displaced by disturbance events or avoid foraging in areas near development (e.g. Johnson et al 2006, Warnock and Troy 1992). Some displacement is possible and as noted, individuals may be adversely affected. However, the effects would have to be larger than observed, or predicted to result in a population decline that would result in detectable reductions in the viability of the population.

[Response to 76.023]

Nowhere in the IAP/EIS does BLM claim that "40 miles is a safe distance." The direct and indirect impacts analysis as well as the cumulative effects analysis cite references that show that disturbance effects decrease with distance for most waterfowl (e.g. Johnson et al 2003) or that on-pad activities and aircraft traffic do not result in changes in distribution or nest success of spectacled eiders (Johnson et al 2006).

Further exploration activities are conducted in winter when neither species of eider is present. The residual effects of exploration are minimal and the majority do not persist through time.

[Response to 76.024]

At this time, the author is unaware of any research or data regarding the synergistic impacts of species loss, subsistence harvest levels, and socio-cultural losses that would allow us to address this issue with the level of detail that you are asking for. As is stated in section 4.7.7.13.2 the closest historical antecedent is the decimation of the bowhead whale stocks (and other marine mammals) at the turn of the past century.

[Response to 76.025]

The Supplemental IAP/EIS relies on the best available data to identify the environmental consequences. Thresholds have not been identified because of the great predictive uncertainties associated with complex ecological and social factors and because, even if these systems were less complex, there is great uncertainty surrounding which potential development may occur and in what manner.

[Response to 76.026]

The review written by Dr. Jack Kruse that you refer to in the is comment is an excellent evaluation of the attempts at predicting and monitoring cumulative social, economic, and cultural changes in Alaska, which he makes perfectly clear has not been done very effectively to date. As is stated within the statement of purpose "the report focuses on the design and implementation of research intended to predict or monitor cumulative social, economic, and cultural changes associated with petroleum development in Alaska." A NEPA analysis is not research, but relies on the best available research and data in order to assess the environmental consequences of proposed actions.

[Response to 76.027]

CEQ guidance with regard to environmental justice states: Where a potential environmental justice issue has been identified by an agency, the agency should state clearly in the EIS or EA

whether, in light of all of the facts and circumstances, a disproportionately high and adverse human health or environmental impact on minority populations, low-income populations, or Indian tribe is likely to result from the proposed action and any alternatives. This statement should be supported by sufficient information for the public to understand the rationale for the conclusion. The underlying analysis should be presented as concisely as possible, using language that is understandable to the public and that minimizes use of acronyms or jargon. The BLM has done this, and refers the reader to additional, detailed supporting information in other sections of the SEIS.

[Response to 76.028]

The use of quantitative as opposed to qualitative information as part of the impact identification under Environmental Justice is not a requirement of the CEQ. The BLM believes that a best-case scenario would be the use of both; unfortunately, there is a dearth of quantitative statistically rigorous best-available science.

[Response to 76.029]

The role of environmental justice, just like the role of a NEPA EIS and the ANILCA 810 evaluation, is to provide decisionmakers and the public with a complete and objective evaluation of significant environmental impacts, both beneficial and adverse, resulting from a proposed action and all reasonable alternatives. The Supplemental IAP/EIS relies on the best available data to identify possible future environmental justice impacts. Thresholds have not been identified because of the great predictive uncertainties associated with complex ecological and social factors and because, even if these systems were less complex, there is great uncertainty surrounding which potential development may occur and in what manner.

[Response to 76.030]

Environmental Justice (EJ) is the identification of a disproportionately high and adverse human health or environmental effect on a low-income population, minority population, or Indian tribe. Negative effects to subsistence resources are adverse environmental effects, thus the importance of subsistence to EJ. Likewise, the SEIS contains a stand-alone section on Human Health. These, as well as social and economic impacts, are the factors that the CEQ requires agencies to identify under EJ. They are the direct connection to EJ.

[Response to 76.031]

As is stated in the beginning of the cumulative effects section, the analysis period covered by this section of the Supplemental IAP/EIS begins in approximately 1900 and continues to about 2100, based on the assumption that oil and gas fields will be discovered and developed in the planning area over approximately the next half-century, and that production and abandonment activities could last for approximately 50 more years.

COMMUNICATION NUMBER 77
From John DelTognoArmanasco

To whom it may concern:

The Teshekpuk Lake area is one of the most important wetlands in the Arctic. The lake and its surrounding area contain vital habitat for wildlife and is critically important to maintaining the subsistence-based culture of the Alaska Natives.

I am writing to comment on the Draft Supplemental Integrated Activity Plan/Environmental Impact Statement for the northeast portion of the National Petroleum Reserve-Alaska, which poses a threat to the currently protected and biologically important Teshekpuk Lake region.

[77.001] If this really needs to be done, then I suggest the following as a workable solution.

1. Oil taken from this region can only be used in the US and cannot be used to reduce the amount of oil sent by the companies working in this area to the US from other areas.

[77.001 cont'd] 2. The companies each put up a \$1 billion dollar bond to cover their impact in this area.

I urge the Bureau of Land Management not to take any action that will remove current protections for this incredibly important area. I urge BLM to adopt Alternative A, the "No Action," alternative. Furthermore, I urge the agency to increase protections by making additional areas of the Teshekpuk Lake Special Area that are important to wildlife and subsistence off limits to any oil and gas development.

At a time when our nation is deciding how to combat global warming and overcome our addiction to oil, it makes no sense to damage this biologically valuable habitat with oil and gas activities that will compound greenhouse gas pollution.

I thank you for considering my comments and urge BLM to maintain the current protections for vitally important habitat in the Teshekpuk Lake region. BLM should expand the existing protections to include additional areas.

Sincerely,

John DelTognoArmanasco

6950 E Williams Field Rd
Mesa, AZ 85212

[Response to 77.001]

Federal regulations at 43 CFR 3134 describe the bonding required by lessees in NPR-A. In addition, regulations at 43 CFR 3160 govern responsibilities of lessees for reclamation at the of abandonment of a development. The alternatives themselves also impose requirements on lessees relevant to abandonment. For more discussion on this matter, see the subsection entitled "Abandonment" in the "Basic Assumptions for Environmental Consequences Assessment" portion of Chapter 4.

COMMUNICATION NUMBER 78

From Meredith Long

[78.001] In looking at the map of the brant colonies near Teshekpuk Lake, it is apparent that there are large colonies (greater than 11 pairs) within areas further than 6 miles from the Lake, especially on the north and east and also on the west. Alternatives B, C, and D allow additional land for oil and gas leasing from within the area north and west of the lake. There is also removal of the No Occupancy Zone south of the lake. Even if there is a 14 mile zone around deep lakes where these development activities are prohibited, the birds use many more acres around the lake for their breeding. Regardless of the ROPs, these exploratory and development activities will have an effect on the noise levels, pollution levels and land surface disruption of the breeding grounds for these birds. **[78.002]** The caribou herd calving area will likewise be disrupted south of the lake. Studying the herds movements for 3 years (stipulation K5) will not change this fact of disruption if activities are allowed south of the lake.

Exploration and development of any of the area in NPRA, despite ROPs, will have an impact on the brants and caribou. It must be prohibited. We can not drill our way to energy independence and we will only destroy the pristine environment and its inhabitants by allowing such activities in NPRA.

[Response to 78.001]

The Supplemental IAP/EIS provides for protection of nesting and brood-rearing brant by requiring compliance to Stipulations and Required Operating Procedures that were designed to protect brant from the effects of exploration and development activities. Lease Stipulation K-4 specifically addresses the issue of minimizing disturbance to geese within the goose molting area.

[Response to 78.002]

The DSEIS acknowledges the impacts of roads and human activity to calving cow caribou. Lease Stipulation K-10 is meant to reduce those impacts to calving cow caribou in the area immediately south of Teshekpuk Lake.

COMMUNICATION NUMBER 79
From Pamela Miller

Pamela A. Miller
P.O. Box 82803
Fairbanks, AK 99708
(907) 441-2407
pammiller@alaska.com

Dear Jim Ducker:
C/o Northeast NPRA SEIS IAP/ EIS Comments
ENSR Project Office
1835 South Bragaw Street, Suite 490
Anchorage, AK 99508

Re: Draft SEIS on Northeast NPRA IAP/EIS

Dear Mr. Ducker:

I support Alternative A, no action, and urge that you support protecting the full Teshekpuk Lake Surface Protection Area, as well as recommend permanent protection for this area. In addition, sensitive habitats for caribou and birds need to be added to this area.

I urge you to take a harder look at the cumulative impacts from climate change to the Teshekpuk Lake Surface Protection Area, as well as the Special Areas and critical habitats and unique subsistence resources throughout the NPRA. The potential combination of effects from onshore and offshore oil and gas development is much more serious than has been characterized in this document.

One time I traveled in a zodiac out from the sinuous channels of the bird-filled Colville River delta north far out into the Beaufort Sea and then over to Fish Creek within the NPRA. The ocean was flat calm, with thousands of eiders, scoters, long-tailed ducks and other birds. It was eerily still, and we were so far from shore in order to get past the river delta's silty outflow that you could not see the shore but you could feel how interconnected were the land and the sea. One aerial view which makes the coastal times of the Teshekpuk Lake are clear is the attached presentation made by Dr. William Bowen, (see Arctic Coastal Plain, Cape Halkett, http://130.166.124.2/alaska_panorama_atlas/page4/files/page4-1006-full.html; the Lonely staging area - Pitt Point, http://130.166.124.2/alaska_panorama_atlas/page4/files/page4-1013-full.html; and showing the vulnerable caribou migration area east of Teshekpuk Lake - Teshekpuk Lake II, http://130.166.124.2/alaska_panorama_atlas/page4/files/page4-1020-full.html).

I have experienced the joy of the Pacific Brant population at many places throughout their annual migration, and seen first-hand that the species is threatened by industrial activity and other habitat loss throughout its range. From the remarkable safe place where they drop their flight feathers gathering in large lakes at Teshekpuk, to Alaska's breeding sites dotted along the arctic coast, to wintering areas in Washington state, Oregon, and even the Mexican coast of the Baja Peninsula, this species has been in view on many of my journeys. What happens to Teshekpuk Lake, therefore affects millions of Americans and others across the west coast of North America.

Similarly, I have seen that the spectacled eider is threatened by activities sponsored by the Interior Department - such as the NPRA leasing program in key nesting habitats, offshore OCS leasing in the Beaufort Sea across feeding and migratory areas, and critical habitat at Ledyard Bay which could be harmed by increasing noise and spills from seismic, barging, and other shipping traffic in support of OCS offshore exploration and drilling in the Chukchi Sea and the Beaufort Sea. These numerous activities need to be looked at together, not in an isolated way, on the species, and on habitats.

In particular, the interdisciplinary implications of the sea ice loss and changing conditions throughout the years to the marine and shoreline habitats for wildlife and communities as well as changes in weather and snow, vulnerability to tundra vegetation, lack water and fish habitat, need to be considered. Along the immediate coastal areas, such as in the TLSPA, as well as throughout the Reserve, there will be major changes caused by climate change affecting the integrity of oil field infrastructure, such as docks, pipeline landfalls, legacy abandoned exploratory wells, airports, dumps, and other facilities, new exploratory and production facilities (the J.W. Dalton exploratory well emergency cleanup effort is one example, but there are many sites still out there not cleaned up and at risk of further cause of habitat degradation and safety concern - even within the Teshekpuk Lake Special Area). For example, there have been concerns about the Lonely landfill contamination and poor practices by Alaska Department of Environmental Conservation as far back as 1970's.

Yet [79.001] BLM has given little consideration to such sitting concerns in a time of rapid warming and unprecedented loss of sea ice that further justify caution with respect to opening new areas that are currently protected from leasing, and rational for preserving the TLSPA - and even a broader area - under existing 1998 ROD standards. [79.002] Furthermore, in light of climate change, even stricter stipulations may be warranted with respect to facilities in hazard zones, including the coast line. Better use of the tools of the Coastal Zone Management Act should also be used to ensure that these vulnerable areas get the kind of attention that it deserves and not incremental habitat loss like we have seen across so much of the lower 48 coasts.

[79.003] BLM failed to take into account the cumulative impacts from the massive loss of sea ice in the arctic Ocean and how this may greatly increase arctic shipping in the Northern Sea route and in the Norwest Passage, and increase pressure to open very far offshore areas for oil and gas development, thereby posing new risks from spills, noise, communities, public health, ect. that were not assessed here (see the information sources available from the Arctic Council, especially the PAME [Protection of the Arctic Marine Environment] working group [see <http://arcticportal.org/en/pame/>] and the Emergency Prevention, Preparedness and Response working group [<http://eppr.arctic-council.org/>]).

[79.004] I am especially concerned about the lack of analysis of the potential pipeline corridor from Chukchi Sea OCS oil across the NPRA, or from oil within the Reserve to connect all the way west to the Chukchi Sea coast. If this is to connect to Pump Station #1, would it connect in with the existing Alpine facilities and the current Alpine common carrier pipeline? Would this add more support activity in the Colville River delta, or the Colville River Special Area and watershed? Also, [79.005] BLM did not consider cumulative effects of such a pipeline on the Western Arctic Caribou Herd, nor combine with potential port expansion at the Red Dog Mine (Delong Mountain terminal), or roads, ports, and activity associated with the BHP Billiton coal mine exploration located west of the NPRA and near Chukchi Sea coast, and with any coal bed methane development that might take place in the arctic (Wainwright, ect.).

Finally, I urge you to closely consider the negative effects of piecemeal development activities which add up - this is cumulative impacts. [79.006] The use of the "Alpine" type hypothetical model, which you have now expanded to having five satellite pads around the initial two with an airstrip, still fails to adequately model the full network of roads that could be allowed under the plan, and throughout virtually the entire Northeast planning area if alts, B,C, or D are chosen. Even when the original Alpine project was permitted, many who have studied the incremental sprawl of the oil fields as they expand across the North Slope noted that this project was likely to be much smaller than originally described, in fact, National Marine Fisheries Service rightly pointed out that it would be "gateway" to the NPRA, and therefore deserved a more thorough EIS analysis at that time. [79.007] Because of the BLM's reliance on optimistic characterization of the effects from the original Alpine, and its incomplete development of a full hypothetical development scenario, the cumulative impacts analysis is based on incomplete and underestimated sources of impact. Therefore I refer you to the Arctic Ocean and North Slope Map Atlas, 3rd Edition, found at www.northern.org, and incorporate these maps into this testimony.

Because of the constraints due to confidentiality with BLM's release of information from oil companies regarding exact locations and size of their finds, and the element of secrecy and withholding of such information, in order to provide the "maximum" protection for the known, valuable surface resources, by necessity the agency needs to use the best scientifically-designed conservation tools at its disposal.

Therefore, I support continuation of Secretary Babbitt's Teshekpuk Lake Surface Protection Area, and Alternative A. I believe that the stronger stipulations attached to the leases (not the rolled back stipulations and ROP's for Alt. B, C, and D) are necessary for the agency to uphold the best management for this area, and in fact, new ones may be needed to adequately protect vulnerable places exposed to new or increasing effects of global climate change (e.g. coast lines, diminishing lake habitats, etc.).

Thank you for this opportunity to comment.

Sincerely,

Pamela A. Miller

[Response to 79.001]

The BLM considers its analysis of the potential interaction between climate change and potential future development to be sufficient. Concerns with siting of oil and gas facilities and their potential vulnerability to climate change-induced phenomenon would appropriately be dealt with in detail when a proposal is submitted for a site-specific development.

[Response to 79.002]

The BLM considers its analysis of the potential interaction between climate change and potential future development and the stipulations and ROPs to be sufficient. Particular attention is provided to coastal areas under Alternatives B through D (the Preferred Alternative) with Stipulation K-6's 3/4-mile restricted surface occupancy provision. During consideration of a specific development proposal, the BLM may introduce additional measures to protect the environment and the integrity of facilities.

[Response to 79.003]

The IAP/EIS's discussion of the potential impacts associated with anticipated off shore drilling activities and marine shipments relevant to NPR-A is sufficient. The Chukchi Sea lease sale that is analyzed as part of the cumulative impacts extends more than 200 miles offshore. The IAP/EIS discusses the potential effects of increased shipping in the Arctic Ocean on marine mammals, even though the Office of Naval Research (2001) states: "The timeline for a significantly navigable Arctic may extend decades into the future."

[Response to 79.004]

The potential pipeline from the Chukchi or Northwestern NPRA would connect to the existing infrastructure at Alpine, and utilize existing lines over to Pump Station #1. Additional support activity would be necessary for any level of development. Examples included, pipeline route surveys, pipeline construction, and pipeline inspections or monitoring. For transportation support, see Section 3 Logistics, under 4.2.1.2.

[Response to 79.005]

The cumulative effects section for mammals has been revised to account for these potential impacts.

[Response to 79.006]

Section 4.2.1.2 (Oil and Gas Exploration and Development Activities) provides a general description of the activities typically associated with oil and gas operations on the North Slope of Alaska. The petroleum-related activities described in this section are applicable in a general sense because the timing and location of future commercial-sized discoveries cannot be accurately predicted until exploration of those reserves occurs. Consequently, the actual locations of drilling production sites and new pipelines in the planning area would depend on the location and sequence of those commercial-sized discoveries.

Recognizing the uncertainty of the timing and location of future oil and gas activities, Figure 4-1 of the DSEIS depicts a hypothetical layout for a central processing facility (CPF) with five satellite pads and reasonably models the compliment of gravel roads associated with projected development and production in the planning area. The layout model is based on the best and most current geology and engineering information, past and current activities on the North Slope and current technology.

[Response to 79.007]

BLM disagrees, the scenario presented in 4.2.1.2 describes in detail how exploration, development, and production would occur using reasonable assumptions based on its knowledge of the largely undiscovered oil endowment of the planning area, on current industry practice, and on professional judgment.

The maps used in the Powerpoint presentation on the notated website only portray one among many potential development scenarios and, to the extent that they purport to represent potential development in NPR-A are, with only a couple exceptions, not based on any known oil and gas discoveries or development proposals. In the Supplement, the petroleum-related activities described in 4.2.1.2 are applicable in a general sense because the timing and location of future commercial-sized discoveries cannot be accurately predicted until exploration of those reserves occurs. Consequently, the actual locations of drilling production sites and new pipelines in the planning area would depend on the location and sequence of those commercial-sized discoveries. More specific discussions on the locations of future development would be misleading.

COMMUNICATION NUMBER 80
From Steffen Oppel et. al
Dept. of Biology and Wildlife, UAF

Taking Space Seriously:

A constructive comment on the map section of the Northeast National Petroleum Reserve—Alaska DRAFT Supplement Integrated Activity Plan / Environmental Impact Statement.

This comment is from the authors below that are associated with the EWHALE lab*

(authorship in reversed alphabetical order)

Audrey Taylor

Nate Pamperin

Steffen Oppel

Falk Huettmann

Nathan Coutsubos

Travis Booms

* EWHALE lab, 419 Irving I, Institute of Arctic Biology, Biology and Wildlife Department, University of Alaska-Fairbanks, Fairbanks, AK 99775.

The authors listed above are solely responsible for the contents of this document. This review does not necessarily represent the opinions of our Department, Institute, the University of Alaska, or any of our funding agencies. As practicing scientists specializing in advanced spatial methods for management of Arctic wildlife and habitat worldwide, we hope to provide expert, constructive feedback on how to improve the NE NPR-A IAP/EIS. In the end, we wish to assure that land use decisions in NE NPR-A are made with the best, most rigorous, comprehensive, and accessible scientific knowledge.

We thank you for the careful consideration of these comments.

INTRODUCTION

The compilation of maps in this volume, Northeast National Petroleum Reserve—Alaska DRAFT Supplement Integrated Activity Plan / Environmental Impact Statement, Volume 4: Maps, reflects the long-term effort BLM put into collating data from Northeast NPR-A. Maps play a vital role in the (spatial) decision-making process, as they are often more easily comprehended and therefore preferred by non-professional readers (who include political stakeholders and decision makers). It is therefore vital that data presented in maps are clear, meaningful, and unambiguous. The structure and arrangement of maps such as these tend to have an enormous effect on how decisions are made, especially when optimal spatial decisions must be made on the ground.

The quality and content of these maps should be a vehicle for the BLM to demonstrate their skills and best professional practices, and the institutional and national desire to most effectively integrate scientific knowledge into public lands planning. The strength of our best

professional practices should set the trend on how to derive the best, most sustainable land use decisions world-wide.

Unfortunately, we find these maps to be lacking relevant information. The maps as produced are not helpful aids for political stakeholders and those with the power to make policy decisions. There are a number of concerns and errors with the individual maps themselves and how they were generated, to which we turn attention below.

Additionally, [80.001] this volume also lacks a single, complete, summary map, showing the cumulative value of biodiversity and cultural resources. These areas may be particularly vulnerable to habitat alteration or loss. Without this synthesis, it seems highly unlikely that decision-makers will have the time or expertise to assimilate the information of some 40 maps to make a rational best decision on how to develop oil resources with minimum impact on wildlife and plant resources. Assessing cumulative impacts does not only require the integration of factors acting on an ecosystem. It also requires an integration of the inherent values and components of an ecosystem. This is clearly lacking in the map volume.

In the text that follows, we begin by addressing general comments on the majority of the maps. As wildlife and habitat biologists, we focus on the animal distribution maps, Map 3-9 to Map 3-33, with special attention to the maps centered on birds: Maps 3-9 to 3-19, and Maps 3-32 and 3-33. Following the general comments are comments on specific issues of individual maps, again focusing on the wildlife maps but not limited to them. Finally we conclude with a summary and some concrete suggestions to improve the IAP/EIS.

GENERAL MAP COMMENTS

[80.002] The first general criticism of the animal distribution maps is a lack of transparency and appropriate references. While each map states a data source, this source is generally vague and uninformative, and does not provide a contact person. It is unclear when, how, and especially where data were collected. It is also unclear where the data are stored now, if they are publicly available, who produced each map, and what methods and software were employed to create the maps. Such items are usually documented in federal metadata standards, legally required, and promoted as best professional practices (e.g., Braun 2005). Data, and maps, are only useful when the accuracy and precision of both the original data and the compiled map can be objectively assessed by the reader.

Further, [80.003] for valid inference, the maps need to specify exactly when and how often the area was surveyed, and which methods were employed in surveying. It is imperative that maps produced from animal distribution data state whether such data were compiled from incidental observations (e.g. as a relative index of abundance), or whether they were collected according to a planned sampling regime where detectability is accounted for (absolute abundance). For many years now, relative abundance indices have been recognized as substandard measures relative to modern wildlife techniques. For best available science in this area see the free, online information on Distance Sampling (<http://www.ruwpa.st-and.ac.uk/distance/>; also Eberhardt 1967), and related information on research design in space and time (Buckland et al.2001, Seber 2002, Braun 2005). In maps using data from radio- or satellite-transmitter-equipped animals, the sample sizes for the number of animals tagged, the sampling fraction, and the number and spatial details of locations from each animal presented on the map must be reported. For any maps reporting 'sightings' of a particular species, the map title or legend should contain information about how the sightings data were collected. Were the surveys opportunistic or planned, randomly or systematically located, conducted by agency biologists or reported by local

community members? This is crucial information necessary to interpret these maps correctly (Monmonier and Blij 1996) and to generalize for decision-making.

[80.004] Another important omission common to many of the maps is information on where surveys for a given species actually occurred. Several maps show that, over large areas of NE NPR-A, the species of interest was 'not observed', suggesting a confirmed absence of that species in that area. However, species may be 'not observed' due to actual absence of the species, or due to absence of survey effort in that area. Such maps as currently composed are completely misleading and every map needs to be altered to reflect where surveys did and did not occur. Areas that were searched, and no animals were found, must be clearly distinguishable from areas that were not searched appropriately.

Without such information, there is currently no way for the reader to judge accuracy, and this defeats the utility of the maps as meaningful, objective, aids in the decision-making process. It seems that it would be straightforward to collate the additional facts mentioned above in an appendix to the map volume. The appendix could contain a concise table with the basic information necessary for readers to assess map quality.

Additionally, **[80.005]** we are troubled by the lack of quantitative information on these maps. In a series of striking examples, the bird distribution maps follow a uniform color scheme, referring to bird densities as high, medium, or low with specific shades of green. If the maps contained a true quantitative scale and threshold, this graphic approach could present a useful display of data that facilitates quick and easy comprehension of the main message. However, the maps in question lack important quantitative details. Virtually none of the maps specify the density (in animals/km², or nesting birds/km²) in the legend, and the reader is left to wonder what 'high', 'medium', and 'low' actually mean. As the same color scheme is used in several maps, this lack of quantitative information conveys the fallacious idea that densities of different species are directly comparable (e.g., that 'high' means exactly the same density for Yellow-billed Loons as it does for Large Shorebirds). It is crucial for each map that a numerical value is shown for each color gradient in the legend.

[80.006] Since the density scaling high-medium-low is relative to NPR-A, it would be informative to include nesting densities from other parts of the Arctic for comparison. If all of NPR-A is important for a particular bird species, even areas shown as having 'low' density might host more birds than other tundra areas in the Arctic. It is, for example, quite possible that areas with 'low' densities of Yellow-billed Loons or Spectacled Eiders in the NPRA still have a higher nesting density of those species than other parts of the circumpolar Arctic. By scaling the density to a relative scale within NPR-A the crucial information on how valuable NPR-A is to a certain species across its range is lost. Such a situation is misleading and can easily lead to erroneous policy decisions.

It has been well understood for many years in the fields of ecology, wildlife biology, etc., that the use of abundance by itself may be misleading when it comes to population viability decisions in time and space (e.g., van Horne 1983). Without information on reproductive success and stress, maps such as these do not give an accurate picture of true habitat quality, and thus do not provide a basis for rational, sustainable land use decisions (Braun 2005). The current maps need to be revised and incorporate information beyond simple distribution estimates. We realize that this will require substantial effort, and that for some species such data are not available. However, for species where data are available 'best available science' mandates that these data be used to optimize land-use decisions.

[80.007] Animals and habitats represent dynamic systems in space and time. While it is difficult to present these dynamics on a printed map, it is important that the IAP/EIS maps include specific dates for survey effort and map creation so that accuracy can be assessed given the progression of time. In addition, **[80.008]** the IAP/EIS should contain maps showing the potential for rapid ecological change across the NE NPR-A landscape. Global change research shows that Alaska's tree line is advancing northward, lakes are drying, and that invasive species are expanding their distribution. The impact of economic development reaches beyond planned facilities, and causes habitat fragmentation, air pollution, noise disturbance and modified view-sheds. From an ecosystem perspective, the connectivity between habitats, on land and at sea, for both the biotic and abiotic elements (e.g., water quality) are important properties that are potentially affected by industrial development. None of the above are included in the map volume.

Finally, **[80.009]** it is also unclear why, among North Slope birds, only a certain subset of species merit a map in the IAP/EIS. Maps showing Snowy Owls, shorebirds besides 'Large Shorebirds,' passerines, juvenile Golden Eagles, or ptarmigan are lacking. The North Slope contains many other (bird) species which are both of socio-cultural significance and of conservation concern. The lack of attention they receive in the IAP/EIS map section suggests that their fates will not be taken into consideration in the decision-making process. This represents a serious failing of the IAP/EIS since these species are a part of the affected environment, and thus effects of the proposed leasing activity on their abundance and distributions need to be addressed **[80.010]** . The IAP/EIS should also include maps of rare plants, insect diversity, current and expected ranges of invasive species, benthic invertebrate density and diversity, and marine plankton and benthos diversity. Without additional information, the map section of the IAP/EIS largely underestimates the true biological value of the area.

SPECIFIC MAP COMMENTS

To highlight some of the general comments above we now consider selected maps and discuss our concerns with each.

[80.011] Map 1-3, Special Areas within the National Petroleum Reserve-Alaska.

The label "Colville River Special Area" is used to label both the red and the orange areas on the map. Please provide the correct name for the red area, which is not the Colville River.

[80.012] Map 3-14, Average Occurance (sic) of all Adult and Juvenile Geese on Goose Molting Lakes in the Northeast National Petroleum Reserve-Alaska.

The legend shows that light green colored lakes have an average of 0-100 geese, which implies that even small groups have been accounted for. The map gives the impression that geese molt only north and east of Teshekpuk Lake. From personal experience of members of this group (SO: 3 years fieldwork south of Teshekpuk Lake), we know that Greater White-fronted Geese also molt south of Teshekpuk Lake, sometimes in congregations of well over 100 birds. This map needs to highlight the area that was actually surveyed, as the current version fallaciously indicates that there are either no molting lakes elsewhere in NE NPR-A, or these would have an average occurrence of less than 0-100 geese (which is mathematically impossible).

Also, the word 'occurrence' is misspelled twice on the map.

[80.013] Map 3-17, Onshore Density, Nearshore and Offshore Beaufort Sea Distribution and Selected Locations of Satellite Transmitter Equipped King Eiders in the Northeast National Petroleum Reserve-Alaska.

The offshore distribution of individuals in 2000, presumably estimated by aerial surveys, seems to be confined to Harrison Bay. Again, this survey effort is spatially limited, and this needs to be highlighted on the map to avoid the misleading conclusion that King Eiders do not occur elsewhere. This is especially confusing on this map, as satellite telemetry data clearly show that King Eiders occur throughout the Beaufort Sea (Phillips et al. 2007).

The satellite telemetry data in turn create a misleading impression of spatial distribution of King Eiders on land. From the data displayed on the map an outside observer has to wonder why King Eiders are clumped in a single area on the south side of Teshekpuk Lake. This clumped area is in fact the subjectively chosen location of a research camp where the birds were captured and equipped with transmitters. This either has to be described in the legend, or the on-shore satellite transmitter locations should be removed from the map with a statement to that effect. The onshore satellite transmitter locations of King Eiders as presented do not allow for rational spatial decision-making because the map only shows a subjectively chosen subsample of the overall population in the study area.

[80.014] Map 3-18, Onshore Density of Large Shorebirds in the Northeast National Petroleum Reserve-Alaska.

The map does not state what species are included in the term 'large shorebirds.' Also, it gives no reason why small and medium shorebirds are excluded from consideration. From the personal experience (NC, SO, AT) of spending (collectively) 11 summer field seasons on the North Slope including some time in Northeast NPR-A, it seems very unlikely to us that vast areas of Northeast NPR-A are void of all large shorebirds, as this map implies. The legend should contain an additional color for areas not surveyed.

[80.015] Map 3-20, Teshekpuk Lake Caribou Herd Seasonal Ranges in Northern Alaska (1990-2005 Satellite Telemetry Data).

The winter and annual ranges for the Teshekpuk Lake Caribou Herd appear to cover exactly the same area on the map. It would be helpful if the legend stated how each seasonal range was delineated (i.e., number of locations per individual, how polygons of use were constructed, what level of confidence in these home ranges can be expected), and explained why the winter and annual ranges are depicted as identical.

[80.016] Map 3-21, Central Arctic Caribou Herd Seasonal Ranges in Northern Alaska.

Map 3-22, Western Arctic Caribou Herd Seasonal Ranges in Northern Alaska.

The same comments hold for these two maps as for Map 3-20, although the winter and annual ranges are not as similar in this map.

[80.017] Map 3-26, Moose, Muskox, and Wolverine Sightings and Habitat in and near the National Petroleum Reserve-Alaska.

Map 3-27, Ringed Seal Sightings Offshore of the Northeast National Petroleum Reserve-Alaska (1979-1999).

Map 3-28, Bearded Seal Sightings Offshore of the Northeast National Petroleum Reserve-Alaska (1979-1999).

Map 3-29, Polar Bear Den Sites and Sightings in and near the Northeast National Petroleum Reserve-Alaska.

Map 3-30, Beluga Whale Sightings Offshore of the Northeast National Petroleum Reserve-Alaska (1987-1999).

These five maps further illustrate our concerns with map transparency and map referencing. No information is provided as to the time of year these observations of each species were recorded, who observed it, what kind of survey (if any) it was, which areas were surveyed and which were not, etc. Without this context, the sightings are relatively useless for determining which areas of NE NPR-A are important for each species.

[80.018] Map 3-32, Onshore Density and Locations of Spectacled Eiders in the Northeast National Petroleum Reserve-Alaska; and Nearshore and Offshore Beaufort Sea Distributions.

This map reports sightings from surveys in 2000, 2005 and 2006, without indicating the date of the survey, the survey route, and the method employed. It is extremely unlikely that in 2006 only 4 individuals (!) were seen in NPR-A, and only 12 in 2005. A single circle in Harrison Bay boasts 100 individuals in 2000. These presented sightings are useless without additional facts that allow the reader to judge whether the suggested rarity is due to measurement 'error' (or just lack of measurement in general) or because some areas are uniquely important to Spectacled Eiders. Given that the map implies widespread data coverage with reported high densities of Spectacled Eiders, the utility of single (random?) sightings of 1-3 birds seems questionable and misleading.

[80.019] Map 3-33, Onshore Sightings of Steller's Eiders in the Northeast National Petroleum Reserve-Alaska.

The map legend should state whether the dots represent a sighting of a single eider within each time period or whether multiple sightings in one geographic area are lumped together (within or across years). Without this information it is impossible to gauge the relative importance of various areas for Steller's Eiders.

[80.020] Map 3-34, Cultural Resources in the Northeast National Petroleum Reserve-Alaska.

The IAP/EIS itself (Volume 3, p. 3-87) goes into considerable detail regarding existing cultural sites of various age and content, yet the map shows all cultural resource sites as being the same size and type. To aid in assessing the effect of development alternatives on cultural resources, the map should differentiate between sites of varying age and tradition. We should be able to determine from the map where specific types of sites are located, and whether they are clustered together, in order to assess whether resources of some traditions are at greater risk of demolition or disturbance than others.

CONCLUDING REMARKS

In addition to our comments presented above, **[80.021]** we contend that the maps presented with the IAP/EIS lack relevant scientific review. As a matter of fact, we are not aware of any input from university-affiliated researchers into these maps, which would have helped to avoid the errors outlined. The list of contributors (IAP/EIS ch. 5, sections 5.4.1 and 5.4.2)—mostly government personnel and industrial contractors but no university researchers, landscape

ecologists or geographers—also supports this conclusion. It reflects poorly on the authors of the IAP/EIS that in-state expertise contained within a renowned Land, Sea and Space Grant university was ignored during preparation of this document.

The smoothing algorithms employed in the IAP/EIS map creation process have to be judged as a naïve use of GIS and computing tools. Animal abundance patterns do not smooth out in an arithmetic, symmetrical fashion around areas of higher survey effort, as these maps suggest. Instead of showing selected raw data minimally analyzed, yet smoothed to create the impression of a well-informed probability distribution, we suggest with strongest enthusiasm that BLM staff create maps with generalizable animal distribution, habitat preferences, and viability surfaces that contain biological realism and rigorous statistical confidence. To our knowledge, this can only be achieved with predictive spatial modeling, which is widely used in the professional literature (e.g. Braun 2005). The term ‘best available science’ does not mean only presenting the best available raw data; instead modern, standard analytical techniques must be applied to the data to give a clearer, more robust picture of the true conditions on the ground (Elith et al. 2006).

[80.022] We also encourage the application of relevant computing tools. For example, the programs MARXAN or ALCEs are used widely elsewhere across the world, and combined with more efficient use of GIS and FRAGSTATS can be used to derive robust scenarios to inform rational, sustainable land use decisions. Either of the first two programs would be able to compile all the underlying information contained within the existing IAP/EIS maps into an optimized, readily digestible summary product to support wise decision-making. We envision, for example, a map of NE NPR-A and surrounding areas color-coded by level of biodiversity, including all taxa, and a companion map illustrating the range of biological vulnerabilities of NE N-PRA and surrounding areas to human disturbance, invasive species, and landscape transformation. Summarizing such data presents a true challenge, and the issues outlined in this review can help to resolve the current dilemma.

By now, the development issues surrounding NPR-A have reached global relevance and are discussed worldwide. The debate is on the same level as that over Australia’s Great Barrier Reef, the Serengeti, Antarctica, Yellowstone National Park, and old growth forest in the Pacific Northwest, to name a few similar cases. Current management and planning practices, and even more than 6 years of effort, as exemplified in the IAP/EIS discussed here, are not up to expectations. Likewise, neither does the current situation demonstrate leadership and a global role model in environmental planning for all of us to be proud of. The current failure to take these things seriously by producing a scientifically rigorous planning document sets us up to place further barriers between current management practices and the paradigm of informed decision-making that will provide a sustainable future for our land, resources, and ourselves.

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[Response to 80.001]

The maps provide managers and the public sufficient information to consider the resources of the planning area, and allow all readers to focus on those resources of particular interest to them.

[Response to 80.002]

The BLM maintains that its map notation is sufficient for the IAP/EIS. Additional information regarding the metadata for animal distribution maps is available upon request.

[Response to 80.003]

The maps of wildlife distribution depict the best available data from sources such as the U.S. Fish and Wildlife Service and the Alaska Department of Fish and Game. The methodologies and consequent reliability of the data are taken into account in the analysis provided in the IAP/EIS.

[Response to 80.004]

Maps have been revised to address these concerns.

[Response to 80.005]

The bird maps has been revised to show estimated relative density values.

[Response to 80.006]

The density scaling information is derived from survey methods specific to the Arctic Coastal Plain (ACP). Comparing densities of pre-breeding birds obtained from these surveys with densities obtained in other areas and other methods would be inappropriate and misleading. Contrary to the comments assertions, the maps are not used to make suggestions about species population viability or habitat quality. The text notes that a substantial majority of yellow-billed loons that nest in Alaska are found within NPR-A, and that the majority of the ACP population of pre-breeding spectacled eiders occurs in Northwest NPR-A and that the ACP pre-breeding population is larger than the current Yukon Kuskokwim population.

While maps and figures are an intergral component of the IAP/EIS they are not the only, or dominant component of the analysis and should not be interpreted in isolation.

[Response to 80.007]

The BLM maintains that the data collected by such leaders in the field as the U.S. Fish and Wildlife Service and the Alaska Department of Fish and Game, provide reliable information. The timing and consequent reliability of the data depicted on the maps are known to the BLM and are taken into account in the analysis provided in the IAP/EIS.

[Response to 80.008]

BLM believes that this sort of impact analysis is captured in the text. Please see section 4.7.7, Cumulative Impacts, for analysis of potential impacts of future development and other activities in the context of predicted climate change.

[Response to 80.009]

The species that have mapped distributions are those for which data has been collected over a large portion of the planning area. Avian distributions that are not mapped are those species for which there are not broad scale datasets (passerines) or are species whose distribution and abundance changes greatly year to year (snowy owl). The general distribution of species that are not mapped is stated in the section 3.3.6 description of that species.

[Response to 80.010]

The BLM considers the analysis provided in the Final Supplemental IAP/EIS, including that in the text as well as the maps, provides an appropriate level of analysis of the important issues and diverse resources of the planning area and the potential impacts to them.

[Response to 80.011]

The red area has been re-labeled to correctly identify it as the Kasegaluk Lagoon Special Area.

[Response to 80.012]

Map 3-14 has been edited to clearly show the reader which lakes were surveyed to obtain the data that is illustrated by this map.

[Response to 80.013]

Map 3-17 has been edited to reflect your comments.

[Response to 80.014]

The data for this map comes from an aerial survey of the ACP which is conducted primarily to count waterfowl. Shorebirds are very difficult to detect and identify from the air so species are lumped into crude size classifications in order to capture any broad scale data at all. The legend of this map has been edited to list those species that would fall into the "large shorebird" category. The area of the map that was not surveyed is colored white and the legend has been edited to clearly show that boundary. Section 3.3.6.4 of the Supplemental IAP/EIS contains more detail information from ground based research regarding the distribution and abundance of specific species of shorebirds.

[Response to 80.015]

Although they are similar, a close inspection will reveal some minor differences between the winter and annual ranges depicted in Map 3-20. The reason for the similarity is that the combined winter range over 15 years is very broad and covers almost all of the area in which caribou are found during the remaining parts of each year.

The intent of the map is to display for the public the general area used by the TLH, thus a detailed description of the analyses performed to derive the map were not necessary and

inappropriate for most readers of this document. The BLM has, however, added text to the map legend to state that a fixed kernel probability analysis was used and that the ranges depicted in Map 3-20 are the 99% utilization distribution.

[Response to 80.016]

As for Map 3-20, the intent of Maps 3-21 and 3-22 is to display for the public the general area used by the CAH and WAH, thus detailed descriptions of the analyses performed to derive the maps were not necessary and inappropriate for most readers of this document. These two maps were obtained from ADF&G who used a variety of data sources including telemetry, observations during aerial surveys, and discussions with local residents, to draw the general ranges depicted. With one exception (Central Arctic Herd calving range) they were not intended to represent quantitative analyses (e.g. fixed kernel analysis of utilization distributions) of caribou location data. Text has been added to the map caption to better explain how ranges were derived.

[Response to 80.017]

BLM considers the maps an integral component of the larger analysis contained within the IAP/EIS. The IAP/EIS recognizes that for many species limited spatial information is available and that spatial distribution of habitat and use information are sometimes lacking. In those instances inferences drawn from existing information are included in the text to assist the decision maker and the public in evaluating potential effects of the action.

[Response to 80.018]

Map 3-32 has been edited to the extent possible to clarify the understanding of the data presented.

[Response to 80.019]

Map 3-33 has been edited to address your comment.

[Response to 80.020]

Map 3-34, "Cultural Resources in the Northeast National Petroleum Reserve – Alaska," in the DSEIS, will be removed from the final document. Cultural resource site location information is considered sensitive/confidential and is protected under provisions of both the Archaeological Resources Protection Act of 1979 as amended and the National Historic Protection Act of 1966 as amended to the extent that disclosure of such information is exempt from requests through Federal and state freedom of information laws.

[Response to 80.021]

The authors who contributed to the drafting the Amended IAP/EIS and this Supplemental IAP/EIS, along with the scientists and other experts provided by the North Slope Borough to help draft the public health section and review all sections of the document are highly trained in their respective fields and bring to this project many years of directly relevant experience. The BLM welcomes comments from all members of the public, including academia, and has considered their input in drafting the Final Supplemental IAP/EIS.

[Response to 80.022]

The BLM considers the analysis provided in the Final Supplemental IAP/EIS provides an appropriate level of analysis of the diverse resources of the planning area and the potential impacts to them.

COMMUNICATION NUMBER 81
From James Pepper

To Whom It May Concern,

Thank you for the opportunity to comment on the draft Supplemental Environmental Impact Statement for the Teshekpuk Lake area of the National Petroleum Area - Alaska.

The draft Supplemental EIS that considers oil and gas drilling in the Teshekpuk Lake area of the National Petroleum Reserve-Alaska, issued by the Bureau of Land Management (BLM), does not completely or adequately analyze the natural and wildlife values of the Teshekpuk nor properly analyze the impact of oil and gas development, together with associated transportation and storage and secondary development, upon these natural resource values.

The draft supplemental statement seems to be developed to provide the minimum legal basis to permit the opening of the Teshekpuk.

Instead, **[81.001]** BLM needs to develop a comprehensive analysis that fully takes into consideration the full scale of natural and wilderness values, an accurate analysis of the vulnerabilities of the wilderness values to the development proposals under review, consideration of the rapidly changing climatic conditions in NPR-A together with projections of the heightened sensitivities to development that can be expected due to change, and **[81.001 cont'd]** a more realistic assessment of the secondary impacts (such as the impact of the substantially greater requirements for obtaining the large gravel deposits for a development of this scale on the landscape and biotic resources where the gravel is to be mined).

[81.002] In the 1970's the National Park Service conducted a study of the Teshekpuk region and determined it to qualify as a National Natural Landmark and likely a suitable addition to the National Park System. This determination indicates that the Teshekpuk region is a nationally significant landmark for its arctic landscape features and wildlife habitat. The BLM analysis in the current draft supplement and its underlying EIS do not recognize the extent and value of the Teshekpuk region as demonstrated by the NNL park service study. This absence of analysis of the significance nationally significant and wilderness values of the Teshekpuk as the additional effect of depriving the analysis of the impact of development of any accuracy needed for a significant federal action of this scale and importance.

The draft needs to be withdrawn and comprehensively revised and reissued to reflect the complexity and significance of the distinctive resource values of the Teshekpuk. As written and available for public review, the draft supplemental cannot reasonably be the basis of a decision document for oil and gas, transportation infrastructure, gravel mining or the likelihood of further sprawling secondary development impacts.

Thank you for your consideration.

Sincerely,

James Pepper
45 Wall Street
Room 1914
New York, NY 10005

[Response to 81.001]

The IAP/EIS provides a legally sufficient analysis of the potential sources of gravel (see the "Gravel Requirements" subsection of the Basic Assumptions discussion at the beginning of Chapter 4) and the impacts of gravel mining (see the discussions of impacts discussed by resource in Chapter 4). More specific impact analysis will only be possible when specific proposals for development have been submitted, which will include the location of gravel to be used as well as the methods for extraction and use of the gravel.

[Response to 81.002]

Studies were conducted in the mid 1970s that described the Teshekpuk Lake area's geological and ecological values and a report was completed in 1979 that recommended its suitability as a National Natural Landmark. (Steven B. Young, "Proposed Natural Landmark Site Evaluation, Arctic Lowlands, Alaska: Teshekpuk Lake, National Petroleum Reserve-Alaska," 1979). It had by then already been designated a Special Area pursuant to provisions of the Naval Petroleum Reserves Production Act. The National Park Service never did a full evaluation of the site nor did it designate the site. The IAP/EIS describes at length the resource values of the Teshekpuk Lake area both in its resource and use descriptions in Chapter 3 and in the Special Areas subsection of Chapter 3.

COMMUNICATION NUMBER 82

**From Patricia Phillips
President, Pacific Fishing, Inc.**

The Alaskan Eskimo need the NE NPRA to meet and maintain its subsistence activities and cultural integrity. There has already been a demise of traditional cultural knowledge with the Iñupiat culture. The hemming in of traditional subsistence use areas by oil and gas development is disconcerting and highly visible. When an oil and gas development site is established, it brings with it, garbage, habitat destruction and human nuisance activities and competition for resources. Garbage draws in foxes and the foxes proliferate and prey on the numerous migratory bird species that nest in the area thus causing a disruption, displacement and depletion of migratory birds, animals and other natural resources near the oil and gas development sites. People, not residents of the area but transient workers, bring their western values that do not recognize Iñupiat traditional social and cultural values and the importance of subsistence activities as the core to Inupiat lifestyles. The management plan must be reinforced with the values of the Iñupiat people in order to reduce the cumulative effects of development on subsistence resources. Extensive scientific research needs Iñupiat involvement including building professional capacity within the people who reside in the North Slope Region. Mentoring and engaging local schools in the importance of scientific research that includes traditional indigenous knowledge. And the sharing the knowledge gained with the villages. Knowledge gained from scientific research builds a base or body of traditional knowledge and observations that young Iñupiat people can gain from being a part of sharing information learned in a way that is easily understandable. The North Slope Borough and Arctic Slope Region Corporation must be intricately involved in a composite network of organizations that look after and involve the north slope people in land management and development planning efforts. Open up job opportunities for the north slope residents to scientific research positions that provide stability to employment and healthy wage base, as well as build employment capacity within the region. Build a database that can be accessed from school facilities and students. Translate terminology into understandable terminology for Iñupiat people. Traditional Ecological Knowledge (TEK) is not just collecting data, TEK is intrinsic when connected to every day living and to the ways of the past with a connection to the land. Teach the communities to use and apply TEK and scientific research into land management and development decisions to rebuild, maintain healthy sustainable natural resources. **[82.001]** **Develop a North Slope superfund and oil spill clean up plan for the NE NPRA.** Negotiate economic activity into the villages, through telecommunication enhancements and field trip seminars for high school and Ilasagvik College. Consider the implications of development on the first people of the land. Be mindful of culture; listen to the Iñupiat people, the knowledge the Iñupiat have to share concerning the development of the land. Oil and gas development in the NE NPRA can deflect the migration of caribou from reaching the Teshekpuk Lake area. The lichen on the migration route is critical to caribou habitat and sustainable caribou populations. Migratory birds exhibit select forage activity and focus on the forage of high quality that promotes fast growth. The plants birds eat are directly linked to healthy bird populations. Any development should be away from these high quality plant biodiversity and ecosystems. Birds have grazing patterns that cover large areas of the habitat. Define these areas as controlled use areas limited to subsistence and cultural activities of the Iñupiat people.

[Response to 82.001]

The Oil Pollution Act of 1990 created the Oil Spill Liability Trust Fund. The following information was taken verbatim from <http://www.epa.gov/oilspill/oilfund.htm>.

"Under the Oil Pollution Act of 1990, the owner or operator of a facility from which oil is discharged (also known as the responsible Party) is liable for the costs associated with the containment or cleanup of the spill and any damages resulting from the spill. The EPA's first priority is to ensure that responsible parties pay to clean up their own oil releases. However, when the responsible party is unknown or refuses to pay, funds from the Oil Spill Liability Trust Fund can be used to cover removal costs or damages resulting from discharges of oil."

COMMUNICATION NUMBER 83

From Redacted #1

MY COMMUNITY DEPENDS ON WILDLIFE THAT GO FOR THE SUMMER NORTHEAST CORNER OF NPRA, THEREFORE, I STRONGLY URGE THE BLM SHOULD NOT LEASE ANY LAND NORTH OR EAST OF TESHEKPUK LAKE. [83.001] MANY OF BLM'S PROPOSED MITIGATION MEASURES IN THIS SUPPLEMENT ARE GREATLY IMPROVED; HOWEVER,IT IS STILL HIGHLY QUESTIONABLE WHETHER ALL OF MEASURES TAKEN TOGETHER, CAN PROVIDE ADEQUATE PROTECTION FOR VULNERABLE SUBSISTENCE RESOURCES AND USES. SO I STRONGLY OPPOSE ANY MEASURES THAT BLM IS DOING IN THE MOST IMPORTANT PART OF THE AREA FOR THE WILDLIFE THAT ALWAYS TREASURE THEIR HABITAT,JUST LIKE US IN A GOOD WAY, WE BOTH LEARN FROM EACH OTHER AND WE HAVE BEEN DOING THAT FOR 20,000 YEARS OR LONGER

[Response to 83.001]

The BLM considers protection of subsistence resources and uses an important part of its management and considers the performance-based provisions of its stipulations and ROPs as a means to adapt mitigations to best meet any potential short-comings.

COMMUNICATION NUMBER 84
From Redacted #2

[84.001] I believe more atmospheric monitoring stations are needed in this region. Data from the one air monitoring station shows an increase in ozone and sulfur dioxide. If this trend continues, as one would expect with further development, large areas may fall out of compliance with air quality standards. The Arctic is potentially vulnerable because pollutants are not oxidized in the atmosphere during times of low sunlight. Also there appears to be only one time point (1999) for most of the other hazardous air pollutants. More current measurements are necessary, and over the relevant regions of Alaska.

[84.002] Also, there is not enough research on how these activities will mobilize the organic carbon reservoirs in the near surface and their consequent feedback on atmospheric greenhouse gases. Warming or overturning tundra typically causes an increase in decomposition rates, which releases carbon dioxide and methane. This effect is nonlinear (at least for temperature), such that disrupting parts of the landscape can cause a disproportionate increase in the release of these gases. This needs to be quantified to properly assess the environmental impacts.

[Response to 84.001]

BLM looks forward to working with the ADEC and other interested agencies to address expanded air quality monitoring and regional planning on a cooperative basis. Also, a potential mitigation measure relevant to this concern is presented in Public Health subsections of Chapter 4.

[Response to 84.002]

BLM recognizes there are several areas of research regarding Global Climate Change, including those identified in your comment. We will strive to incorporate the most appropriate information and analysis in our future NEPA analyses as required under CEQ Regulations.

COMMUNICATION NUMBER 85
From Redacted #3

BLM Northeast NPR-A Supplemental IAP/EIS Comments ENSR Project Office 1835 South Bragaw Street, Suite 490 Anchorage, AK 99508 Dear BLM Project Leader, I urge the BLM to keep all of the lands to the north and east of Teshekpuk Lake in the National Petroleum Reserve-Alaska (also known as the Western Arctic Reserve) closed to oil and gas leasing. Eighty-seven percent of the reserve's Northeast Planning Area is already open for leasing and more than 1.3 million acres of it are already being actively explored. The unspoiled wildlife habitat surrounding Teshekpuk Lake must be kept off-limits to industrialization. While the Western Arctic Reserve has been widely explored for its oil and gas potential off and on for decades, a small part of the Northeast Planning Area around Teshekpuk Lake has long been protected because of its extraordinary importance to wildlife. Secretaries of the Interior -- from Cecil Andrus under President Carter to James Watt under President Reagan to Bruce Babbitt under President Clinton -- have recognized the necessity of balancing development and conservation in the Western Arctic and have prohibited oil and gas leasing in this most critical habitat. Oil and gas development near Teshekpuk Lake would disturb tens of thousands of vulnerable molting geese, pregnant caribou cows and newborn caribou calves. It could harm threatened spectacled and steller's eiders, as well as rare yellow-billed loons. In the face of a rapidly changing climate in the Arctic, the prudent approach is to protect the Teshekpuk Lake area and give wildlife the time and space it will surely need to adapt to changing conditions. Drilling in the Teshekpuk area will not solve America's energy problems and would only increase dangerous global warming pollution. Seven Alaskan native communities on the North Slope depend on the caribou and other fish and wildlife at Teshekpuk Lake for their subsistence way of life, and oil and gas development across the North Slope has resulted in documented human health impacts. [85.001] Manomet Center for Conservation Science has been studying this area during the past two summers and has definitive information on its importance and the numbers of birds and other wildlife that use the area. I strongly urge the BLM not to lease any land north and east of Teshekpuk Lake. Thank you for considering my comments. Sincerely,

[Response to 85.001]

The Manomet Center for Conservation Science has provided data concerning shorebirds in the Olak region of the Teshekpuk Lake Special area and those data were included in section 3.3.6.4 of the Supplemental IAP/EIS under the citation Liebezeit and Zack 2006.

COMMUNICATION NUMBER 86

Extract from B. Sachau

[86.001] ne_npr_a-supplement.html does not work - THERE IS NO WEBFORM THERE. I ALSO DO NOT UNDERSTAND WHY IF YOU REFER PEOPLE TO WRITE TO ENSR THAT AN E MAIL ADDRESS IS NOT GIVEN FOR THAT ORGANIZATION AS WELL. YOU MAKE IT VERY HARD FOR THE PUBLIC TO COMMENT PURPOSEFULLY. YOU DONT WANT TH EPUBLIC TO NOTICE WHAT YOU ARE DOING HERE. YOU WANT TO KILL THE ESKIMOS WITH THE HORROR YOU ARE BRINGING TO ALASKA.

RE NORTHEAST NATIONAL PETROLEUM RESERVE ALASKA DRAFT SIAP EIS VOLUME I CHAPTER 1-2 attention jim ducker - why the paucity of email addresses to write to

THE SCANDAL PLAGUED us dept of interior has presented this horrible overdrilling plan to destroy alaska. i oppose using 4.6 million acres as sites for drilling by oil and gas profiteers when americans should be instead moving toward using wind and solar power instead of this destructive drilling. this administration is setting america on teh wrong energy path and harming americans and their children's future.

es-1 this nation does not need more oil and gas. it needs to switch to solar and wind power. cheney's secret meetings on energy have set America on the wrong path, and the people dont even have the right to know what went on at that very secret meeting. what kind of democracy is that? I oppose making more lands available to be destroyed so all the company execs in the oil business can retire with \$400 million retirement packages. This damages people's homes, their livelihoods, their sources of food. It destroys animal and bird habitats for ugly venal greedy reasons.

es-3 ban oil and gas development north and east of teshepul lake.

es-5 impacts from oil and gas drilling is major. sloppy oil drilling profiteers have left thousands of sites destroyed with their pollutant and they are busily trying to get the right to destroy more land with their sloppy drilling. they should NEVER be allowed to lease any more land until they clean up the mess they have made. exxon for one needs to be banned from all work on american land. they still have not cleaned up their mess from 40 years ago. there are thousands of oil spills currently taking place in alaska every year. that is too much and shows far too much negligence on the part of these profiteers. that destruction will last up to 900 years in that climate. such destruction is major.

[86.002] the bibliography used is ancient. dont pay anybody who used such old references please. you cannot plan for 2050 by using information from 1950.

[Response to 86.001]

The BLM provided multiple means to make comments. Written comments could be submitted by hand, through the mail, by toll-free fax, and through the website. Verbal comments were received at eight public meetings in Alaska and one public meeting in Washington, D.C. Approximately 150,000 comments were received in total with over 40,000 comments received through the webform.

[Response to 86.002]

The bibliography represents current knowledge of relevant subject matter. A substantial portion of the sources were produced in the last 5 years.

COMMUNICATION NUMBER 87

**From Wildlife Research and Management
Audrey Magoun, CEO**

I am in favor of Alternative A; I do not believe that the preferred Alternative (D) will guarantee protections for wildlife resources in the planning area for the following reasons:

1) **[87.001]** the EIS states that No permanent oil and gas facilities will be permitted in the additional area that Alternative D includes; however, there is no mention of the timeframe in which oil and gas facilities will be present in these areas; the timeframe in which permanent or longterm affects on wildlife in the area created by oil and gas facilites may be far shorter than the timeframe for which the facilities will be present in the area and cumulative with other such facilities in other portions of the planning area

2) pipelines and publiclyfunded permanent roads will be allowed in Alternative D in the additional area allowed under this alternative vs. Alternative A; access to pipelines for maintenance and repair will require roads and increase the potential that publiclyfunded roads will be maintained in this area. Permanent roads provide yearround access to areas that have historically provided protection for wildlife resources (refugia) and are shown to adversely affect wildlife resources in many instances;in addition they are difficult to decommission once the public has become accustomed to using them, are difficult and expensive to monitor for violations of wildlife protection regulations, and create disturbance to wildlife that is cumulative but difficult to document.

3)Alternative D also allows for seismic exploration and exploratory drilling in the additional area allowed under this alternative which could substantially increase the amount of area that can be disturbed notwithstanding the efforts to decrease the footprint of oil and gas facilities.

4)caribou as a species historically make sudden, unpredictable changes in their movements and critical use areas, and there is no way to tell where and how much of the planning area will become important habitat in the future so I prefer to limit the amount of area developed in the planning area until we understand what the future holds for caribou in NPRA under the current global warming scenario.

Because Alternative A provides for development in 87 of the planning area, I believe there is sufficient potential for oil and gas development in the immediate future within the planning area under Alternative A, and that Alternative D (as well as B and C) are unnecessary at this time; selecting Alternative A will give us an opportunity to determine the effects of resource development on wildlife resources in the planning area within a timeframe more in line with our abilities to adapt and change our development and energy technologies. We can always move forward with additional oil and gas development in the future but it is much more difficult or impossible to reverse major changes in wildlife communities.

[Response to 87.001]

It is impossible to know how long infrastructure would be in place to extract oil that, in most cases, has not yet been discovered and that, in all cases, has not begun production or had the total technically recoverable reservoir determined. The IAP/EIS, however, does provide some rough estimates of how long it takes to discover oil, develop necessary oil infrastructure, produce oil, and ultimately abandon the field after production has stopped. See the discussion in Chapter 4 in the subsection entitled, "Oil and Gas Exploration and Development Activities," and particularly the table entitled "Development Timeframe for a Typical Oil Field."

COMMUNICATION NUMBER 88
From Elise Wolf and Whitney Lowe

We are writing to comment on the Draft Supplemental Integrated Activity Plan Environmental Impact Statement (SEIS) for Northeast portion of the National Petroleum Reserve Alaska (NPRA).

We believe the most scientifically balanced management plan for the area is Alternative A, no action. If anything this region needs more protection not less. This region should remain free of oil and gas development, as it has been for 30 years.

The Teshekpuk Lake region is a vital critical habitat for millions of birds, many endangered or threatened. There is simply no other biological zone such as this in the entire Arctic. This is a fact, documented by studies at the University of Alaska, Fairbanks. Yellowbilled loons, black brant and other threatened birds make this area a key breeding area. Risking these birds breeding habitat with oil and gas would be a gross error in management.

Also at risk are the 45,000 herd of caribou that utilize this coastal region for feeding in the summer months. The Teshekpuk Lake area offers this herd of caribou biologically important feeding areas for new calves and adults.

Climate change is already placing these coastal regions of our Arctic at serious risk. We need to be taking measures to preserve coastline and protect against saltwater incursion, not exposing the region to more assaults. The BLM does a poor job of fully discussing the cumulative impacts that will be created with climate change and oil and gas development. **[88.001]** Oil spills are also not dealt with in an unbiased fashion.

Plans are not sufficient for oil spills; there must be proven technologies that can be used to clean up oil in icy water conditions. Given that this region is a Lake and plastered with tundra ponds, being able to clean up oil in icy water should be a prerequisite to drilling in this setting. Instead the public is provided vague, unproven methodologies for cleanup and mitigation.

The oil industry has overwhelming advocacy and support by Federal Government agencies and the state of Alaska. This obvious prioritizing at that expense of conservation and protection and science itself, is a flagrant abuse of the public's interest. The BLM's proposal to open this biologically critical area is imprudent and offensive to the people of this nation. The proposal completely ignores the true risks of oil and gas development in such a sensitive area.

[88.002] The argument that this area will contribute significantly to the nation's oil needs cannot be substantiated. This oil will be refined and used primarily on the west coast not by the entire nation. Arguing otherwise is providing false information to the public. Until refined products are taken through the Panama Canal, this oil will be used mostly by the west coast. This fact is not dealt with honestly in the EIS. Conservation would do far more for the country than placing our most precious areas at risk.

Please stop catering to industry and listen to scientists.

Elise Wolf

Whitney Lowe

[Response to 88.001]

The BLM maintains that fulfilling the requirements of the relevant stipulations and ROPs (Stipulations 1, 7, 8, 9, 11, 12, and 13 for Alternative A and ROP A-3 for the other alternatives) and the requirements of Federal, state, and NSB regulations for spill prevention and response contingency plans will minimize the impacts from oil spills.

[Response to 88.002]

The BLM maintains that the production of roughly 3 to 4 billion barrels of oil will help meet the nation's need for oil, and, therefore, is consistent with the purpose of the IAP/EIS. The IAP/EIS does not suggest that all areas of the country will received this oil.