U.S. Department of the Interior
Bureau of Land Management

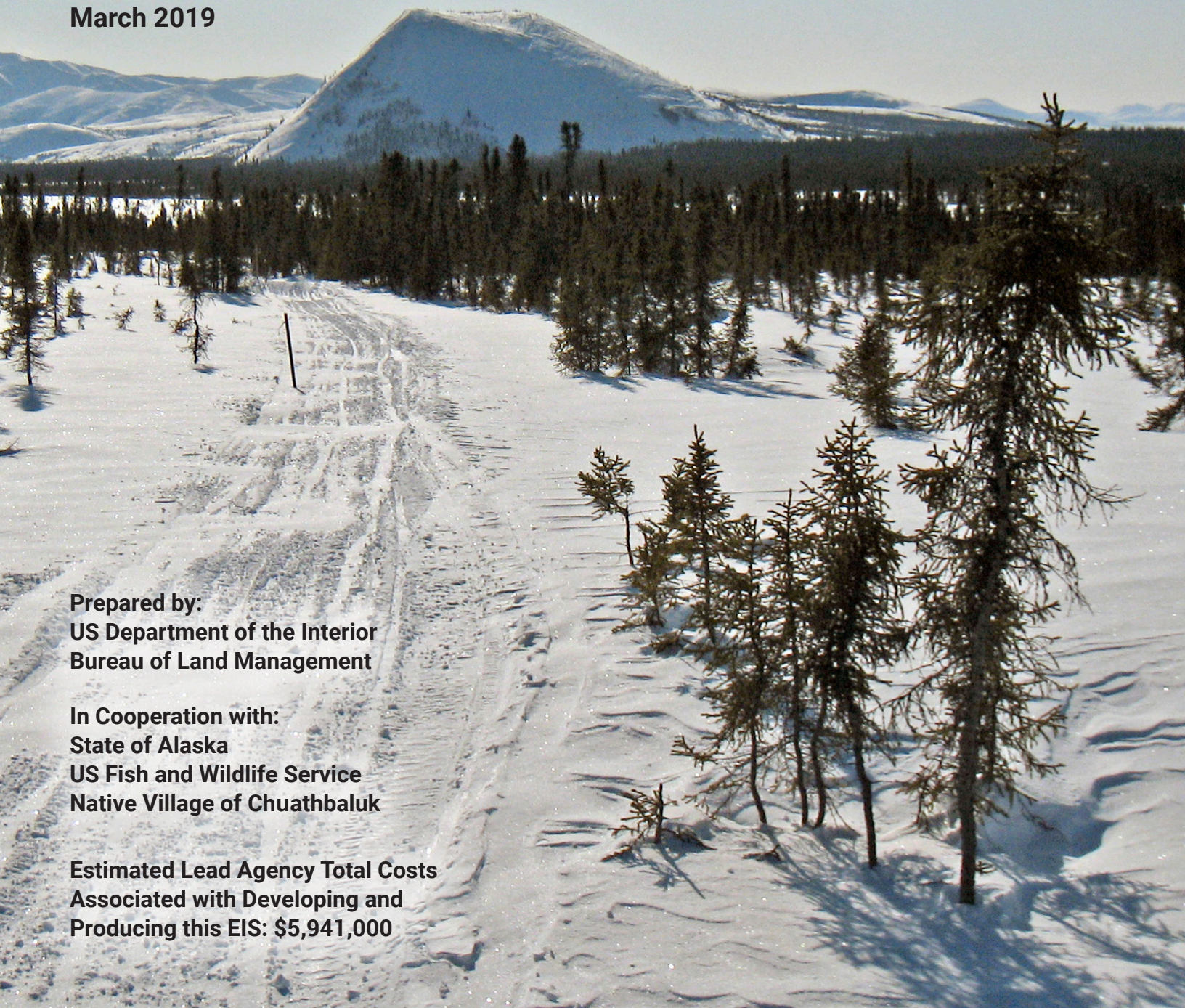
Bering Sea - Western Interior

Resource Management Plan and Environmental Impact Statement

DRAFT

Volume 1: Executive Summary, Chapters 1 – 3, Appendices A – L

March 2019



Prepared by:
US Department of the Interior
Bureau of Land Management

In Cooperation with:
State of Alaska
US Fish and Wildlife Service
Native Village of Chuathbaluk

Estimated Lead Agency Total Costs Associated with Developing and Producing this EIS: $5,941,000

Mission

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

Cover Photo: Old Woman Mountain, located on the Iditarod National Historic Trail between the Yukon River and the Bering Sea. Photo by Kevin Keeler (BLM).

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Bering Sea-Western Interior

Draft Resource Management Plan and Environmental Impact Statement

Volume 1: Executive Summary, Chapters 1-3, and Appendices A-L

Prepared by:

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

In cooperation with:

State of Alaska
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Total Costs Associated with Developing and Producing this EIS: $5,941,000

Bering Sea-Western Interior Draft Resource Management Plan and Draft Environmental Impact Statement

Responsible Agency: United States Department of the Interior, Bureau of Land Management

Document Status: Draft (X) Final ( )

Abstract: This Draft Resource Management Plan (RMP) and associated Environmental Impact Statement (EIS) for the Bering Sea-Western Interior (BSWI) planning area has been prepared by the United States Department of the Interior, Bureau of Land Management (BLM) Anchorage Field Office. The planning area extends south from the Central Yukon watershed through the Kuskokwim River watershed, including all lands west of Denali National Park and Preserve to the Bering Sea, and covers 13.5 million acres managed by the BLM within the broader 62.3 million-acre planning area. This RMP replaces the 1981 Southwest Management Framework Plan and a small portion of the 1986 Central Yukon RMP, including amendments.

The purpose of this RMP is to make decisions that guide future land management actions and site-specific implementation decisions. The decisions will address goals and objectives for resource management (desired outcomes) and establish land uses (allocations) that are allowable, restricted, or prohibited to achieve the goals and objectives. The need for this RMP is to provide guidance that will address the significant alterations in resources, circumstances, laws, policies, and regulations in the planning area since 1981.

This Draft RMP/EIS evaluated four alternatives for managing the planning area. Alternative A, the no action alternative, represents existing management described by current land use plans and provides the benchmark against which to compare the other alternatives. Alternative B emphasizes reducing the potential for competition between recreational or developmental uses and subsistence resources by identifying key areas for additional management actions. Alternative C, which is identified as the preferred alternative, emphasizes adaptive management at the planning level to maintain the long-term sustainability of resources while providing for multiple resource uses. Alternative D provides additional flexibility at the project-specific implementation level and fewer management restrictions at the planning level. Alternatives B, C, and D were developed using input from the public, stakeholders, and cooperating agencies. Major planning issues addressed include subsistence resources, including water resources, fisheries, and wildlife; forestry; minerals and mining; recreation; travel management and access; and areas of critical environmental concern.

Review Period: Comments on the BSWI Draft RMP/EIS will be accepted for 90 days following publication of the United States Environmental Protection Agency's Notice of Availability in the *Federal Register*.

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In Reply Refer To:
1610 (AKA010)

FEB 19 2019

Dear Reader:

Enclosed is the Draft Resource Management Plan (RMP) and Draft Environmental Impact Statement (EIS) for the Bering Sea-Western Interior (BSWI) planning area (planning area). The Bureau of Land Management (BLM) prepared the Draft RMP/EIS in consultation with cooperating agencies and in accordance with the National Environmental Policy Act of 1969, as amended; the Federal Land Policy and Management Act of 1976, as amended; implementing regulations; the BLM's Land Use Planning Handbook (H-1601-1); and other applicable law and policy. The Draft RMP provides a framework for the future management direction and appropriate use of the planning area.

The planning area consists of about 62.3 million acres of land, which includes about 13.5 million acres of public lands managed by the Anchorage Field Office. When approved, this RMP will replace the 1981 Southwest Management Framework Plan and a small portion of the 1986 Central Yukon RMP, including amendments, and will guide the management of public lands administered by the Anchorage Field Office into the future.

The BLM encourages the public to review and provide comments on the Draft RMP/EIS. The BLM is particularly seeking constructive feedback regarding the adequacy of the alternatives considered, the analysis of its respective management decisions, and any new information that would help the BLM produce the Proposed RMP/Final EIS (which is the next phase of the planning process). In developing the Proposed RMP/Final EIS, the decision-maker may select management decisions from each of the alternatives analyzed in the Draft RMP/EIS for the purpose of creating a management strategy that best meets the needs of the resources and values in this area under the BLM multiple use and sustained yield mandate.

Comments will be accepted for ninety (90) calendar days following publication of the United States Environmental Protection Agency's Notice of Availability in the *Federal Register*. The BLM can best utilize your comments and resource information submissions if received within the review period.

The Draft RMP/EIS is available for review online on the project website at www.blm.gov/alaska/BSWI. Paper copies are also available for public review at the following locations.

- BLM Alaska Public Information Center (Public Room), James M. Fitzgerald U.S. Courthouse & Federal Building, 222 West 7th Avenue, Anchorage, Alaska

- BLM Anchorage Field Office at 4700 BLM Road, Anchorage, Alaska
- Alaska Resources Library & Information Services (ARLIS) Library Building, Suite 111, 3211 Providence Drive, Anchorage, Alaska
- Yukon Delta National Wildlife Refuge Office, 807 Eddie Hoffman Highway, Bethel, Alaska

Comments may be submitted electronically, by mail, or in person. To facilitate analysis of comments and information submitted, the BLM encourages you to submit comments in an electronic format.

Mail comments to: BLM Anchorage Field Office, Attention—BSWI RMP
4700 BLM Road
Anchorage, AK 99507

Fax comments to: 907-267-1267

Comment online at: www.blm.gov/alaska/BSWI

Email comments to: BSWI_RMP_COMMENT@blm.gov

Hand-deliver comments to: BLM Anchorage Field Office
4700 BLM Road, Anchorage, AK 99507
Normal Business Hours: 7:30 a.m. – 4:00 p.m.

Your review and comments on the content of this document are critical to the success of this planning effort. If you wish to submit comments on the Draft RMP/EIS, we request that you make your comments as specific as possible. Comments will be most helpful if they include suggested changes, sources, or methodologies, and reference to a section or page number. Comments containing only opinion or preferences will be considered and included as part of the decision-making process, although they will not receive a formal response from the BLM.

Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Public meetings will be held at various locations around the planning area to provide the public with opportunities to submit comments and seek additional information. The locations, dates, and times of these meetings will be announced at least fifteen (15) days prior to the first meeting via a press release and on the project website.

Thank you for your continued interest in the BSWI RMP/EIS. We appreciate the information and suggestions you contribute to the planning process.

Sincerely,

Ted A. Murphy
Acting State Director

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Volume 3

Maps

Executive Summary

Introduction

The United States (U.S.) Department of the Interior, Bureau of Land Management (BLM) Anchorage Field Office, has prepared this draft resource management plan (RMP) and associated environmental impact statement (EIS) for the Bering Sea-Western Interior (BSWI) planning area (planning area). The planning area extends south from the Central Yukon watershed through the Kuskokwim River watershed, including all lands west of Denali National Park and Preserve to the Bering Sea and covers 13.5 million acres managed by the BLM within the broader area of 62.3 million acres. The BSWI RMP/EIS does not apply to non-BLM lands, including lands conveyed through the Alaska Native Claims Settlement Act or Alaska Statehood Act; federal lands administered by the U.S. Fish and Wildlife Service; private lands; or Native allotments (including townsite lots).

This RMP replaces the 1981 Southwest Management Framework Plan (SWMFP; BLM 1981) and a small portion of the 1986 Central Yukon Resource Management Plan (CYRMP; BLM 1986a), including amendments. It provides:

- Consolidated direction to address land and resource use and development on BLM-managed lands within the planning area and under one RMP, and
- Analysis of the environmental effects that could result from the implementation of the alternatives proposed in the RMP/EIS.

Purpose and Need

The purpose of this RMP is to make decisions that guide future land management actions and subsequent site-specific implementation decisions. The decisions will establish goals and objectives for resource management (desired outcomes) and the identified uses (allocations) that are allowable, restricted, or prohibited to achieve the goals and objectives. Management actions are also identified where they could help to achieve desired outcomes and include measures or criteria that could guide day-to-day as well as long-term management.

The need for this RMP is to provide guidance that will address the substantial alterations in resources, circumstances, laws, policies, and regulations in the planning area since 1981. The 1981 SWMFP and the 1986 CYRMP lack guidance garnered from professionals in the environmental, natural, and social science fields, BLM staff, and the public, including Alaska Natives and subsistence resource users. These current land use plans do not take into consideration current management policy; current issues of environmental and social concern; the need to prevent unnecessary or undue degradation of the land, resources, and the environment; or the influence of modern land and resource management tools and techniques.

Alternatives

The four alternatives, one no action alternative and three action alternatives, carried forward for detailed analysis in this Draft RMP/EIS were developed in response to issues and concerns identified through internal agency scoping, public scoping, the Areas of Critical Environmental Concern (ACEC) comment and nomination period, and the preliminary alternatives outreach period. The identified alternatives address current management needs and propose adaptive management strategies to best manage for

known and anticipated resource trends. All the alternatives share common goals and objectives; however, they address these goals and objectives to varying degrees with the potential for different long-range outcomes and conditions. The alternative themes or strategies that came out of this refinement process included the following:

Alternative A (No Action): This alternative represents existing management mandated by current land use plans for the planning area. Alternative A meets the National Environmental Policy Act (NEPA) requirement in 40 Code of Federal Regulations 1502.14(d), which instructs the BLM to include the alternative of No Action. This alternative provides the benchmark for what would happen to the environment if present management direction and practices were continued. Direction contained in existing laws, regulations, policies, and standards would also continue to be implemented, sometimes superseding provisions of the 1981 SWMFP (BLM 1981) and the 1986 CYRMP (BLM 1986a) and subsequent amendments. The current levels, methods, and mix of multiple use management of BLM-managed lands in the planning area would continue, and resource values would continue to receive attention at present levels.

Alternative B: This alternative emphasizes reducing the potential for competition between recreational or developmental uses and subsistence resources by identifying key areas for additional management actions, which focuses on maintaining long-term resource values within the planning area. These areas include identified high-value watersheds (HVWs), connectivity corridors, Visual Resource Management (VRM) Class I areas, lands managed for wilderness characteristics, ACECs, and Iditarod National Historic Trail (INHT) segments located on BLM-managed public lands and associated sites (e.g., Rohn Site, Kaltag Portage, Farewell Burn). This alternative seeks to support subsistence uses through sustainable management of the resources on which subsistence depends, but also by attempting to reduce competition for those resources in key areas surrounding rural communities. Alternative B provides clear guidance on the requirements for subsequent site-specific management and projects, which ensures consistency, but limits flexibility at the site-specific implementation level.

Alternative C: This alternative emphasizes adaptive management at the planning level to avoid and minimize impacts to the long-term sustainability of resources while providing for multiple resource uses. It provides for planning-level management that would avoid and minimize impacts on key areas, such as the portions of the INHT on BLM-managed lands, while allowing for flexibility in resource use in those areas depending on the monitoring of resource impacts. It emphasizes collaboration with and education of permit applicants to address potential competition for use of existing resources. This alternative is meant to provide flexibility at the planning level while still providing enough direction to make processing of site-specific projects easier and more consistent.

Alternative D: This alternative provides the fewest management restrictions at the planning level and the most flexibility at the project-specific implementation level. Alternative D relies on existing federal laws and implementation-level NEPA to a greater extent than Alternative B or C to determine how to best manage multiple uses of sensitive resources while preserving long-term sustainability.

Environmental Consequences

Table ES-1 provides a summarized comparison of the environmental consequences for the resources, resources uses, and special designations that could be affected by implementation of the alternatives being evaluated in this Draft RMP/EIS.

Table ES-1: Summary of Effects

Resource/ Resource Use/ Special Designation	Impact Summary
Air Quality	Adverse impacts to air quality would result from activities that emit criteria pollutants (including particulates), hazardous air pollutants, and greenhouse gases (GHGs). All alternatives could impact air quality by allowing activities such as motorized vehicle and equipment used to support BLM management activities or BLM-approved activities in the planning area, commercial woodland harvest, and mineral development. Air quality could also be affected by wildland fire and permafrost thaw, which could be influenced by the different alternatives. Under all action alternatives, temporary adverse effects on air quality from wildland fires and prescribed burns would not change; however, efforts to minimize adverse effects of planned fire management actions within Class I and Class II areas could have a beneficial effect to ensure maintenance of air quality (including visibility) for recreation and subsistence use. Alternative B would have the least potential for adverse air emissions compared to Alternatives A, C and D. Although Alternative C and D would in many cases open more areas up to emissions-producing activities, they would have more best management practices (BMPs) and standard operating procedures (SOPs) than Alternative A to temper those effects.
Climate	Adverse impacts to climate would result from commercial woodland harvest, off-highway vehicle (OHV) use, and locatable mineral development. Climate change due to GHG emissions would increase for all action alternatives; however, management actions would provide some reductions in the potential for GHG emissions. Alternative B would have the least potential for adverse impacts to climate compared to Alternatives A, C, and D. Although Alternative C and D would some cases open more areas up to emissions-producing activities, they would have more BMPs and SOPs than Alternative A to temper those effects.
Soils	Adverse impacts to soils would result from soil-disturbing activities that could result in erosion, permafrost alteration (e.g., destabilization and thermokarst processes), and instream sedimentation. Soil disturbance could occur from OHV travel, certain realty actions, mineral extraction, and climate change. Alternative B would result in the lowest magnitude and extent of adverse impacts on soils since it would open the smallest acreage up to surface-disturbing activities and would close many sensitive areas to those types of activities. Alternative D would have a slightly lesser potential to impact soils than Alternative A, but more than Alternatives B and C.
Water Resources	Adverse impacts to water resources would result from surface disturbances near streams or waterbodies from commercial woodland harvest, mineral development, and stream crossings by roads, trails, and utility corridors. Alternative B would result in the lowest magnitude and extent of adverse impacts on water resources from surface-disturbing activities that could cause erosion, sedimentation, variations in temperature and stream flows, and potential discharges of pollutants to streams, rivers, and groundwater. Alternative A would result in greater impacts associated with right-of-way (ROW) development and OHV travel than Alternatives C and D but would have fewer impacts from mineral development and commercial woodland harvest. However, BMPs, SOPs, and detailed reclamation requirements that would temper impacts from Alternative C and D would not be included under Alternative A.
Fisheries	Adverse impacts to fish and aquatic resources would result from surface disturbances near streams or waterbodies from commercial woodland harvest, mineral development, and stream crossings by roads, trails, and utility corridors. Alternative B would result in the lowest magnitude and extent of adverse impacts on fish and aquatic habitat from surface-disturbing activities that could alter stream channels, remove or damage riparian vegetation, or result in soil erosion and increased sedimentation. Alternative A would result in greater impacts associated with ROW development and OHV travel than Alternatives C and D but would have fewer impacts from mineral development and commercial woodland harvest. However, BMPs, SOPs, and detailed reclamation requirements that would temper impacts from Alternative C and D would not be included under Alternative A.
Vegetation	Adverse impacts to vegetation and special status species (SSS) flora would result from actions that temporarily or permanently remove or damage individual plants or plant communities. Removal of vegetation could occur with any surface-disturbing action, such as commercial woodland harvest, certain fire or fuels treatments, mineral development, or high-intensity reindeer grazing. If SSS flora occur in these areas, these species could also be removed or damaged. Under all action alternatives, existing vegetation would be retained as much as possible when implementing proposed actions and disturbed or burned areas would be restored or reclaimed as closely as possible to previous conditions. Alternative B would have the least potential for adverse impacts to vegetation and SSS flora. Alternative C would provide the next highest degree of restrictions for surface-disturbing actions (therefore, the second least amount of potential impacts), followed by Alternative D, then Alternative A.
Wildlife	Adverse impacts to wildlife and SSS would result from disturbance, displacement, mortality, or injury of individuals; alteration, elimination, or fragmentation of habitat; reduction in availability of food and water; interference with breeding; reduction in reproductive success; and increased susceptibility to predation, among other possible impact mechanisms. Activities that would cause impacts to wildlife include harvest of forest and woodland products, OHV use, ROW development, mineral development, livestock grazing, and other actions that involve surface disturbance, alteration of vegetation, noise, or human activity. All action alternatives would include management considerations that focus on Endangered Species Act-listed species, BLM sensitive species, caribou, moose, muskox, Dall sheep, mountain goats, migratory birds, raptors, bats, wood bison, and pollinators. Additionally, the BLM would use adaptive management that considers climate change and shifts in habitat or timing of crucial portions of species' life cycles. Alternative B would result in the lowest magnitude and extent of impacts to wildlife and SSS, including impacts to important wildlife habitats. Impacts to wildlife under Alternative C would be greater than Alternative B but lower than under Alternatives A and D. In some locations and for some species (e.g., forest and woodland species), the extent and magnitude of impacts under Alternatives C and D would be similar to or greater than those for Alternative A; however, BMPs and SOPs that would temper impacts from Alternatives C and D would not be included under Alternative A.

Resource/ Resource Use/ Special Designation	Impact Summary
Non-native Invasive Species	Adverse impacts associated with nonnative invasive species (NNIS) would include potential increases in colonization and spread of nonnative invasive plants and animals. Transportation of NNIS is generally associated with increases in human movement and surface-disturbing activities that result in vegetation removal or soil disturbance where propagules of NNIS species are present. Potential establishment and spread of nonnative invasive plants would be minimized under the action alternatives as compared to Alternative A. Alternative B would result in the lowest magnitude and extent of adverse impacts from spread of NNIS. Although Alternatives C and D would in many cases open more areas to surface-disturbing activities than Alternative A, they would they would have more BMPs and SOPs to temper those effects than Alternative A.
Wildland Fire	Adverse impacts to wildland fire include reduction of lands available for fuels treatments and increases in the extent and severity of wildland fires. Wildland fire is ignited predominantly by lightning; however, human-caused fires could be ignited by campfires, burning debris, vehicles, equipment, and other ignition sources. Management of natural fuels (vegetation and woody debris) and human activity could affect the extent and severity of wildland fires. Fire risk is expected to increase under all three action alternatives compared to Alternative A, which generally has fewer management restrictions and therefore lower potential for wildland fire. Management actions to avoid and minimize impacts to resources could also increase fire suppression times, resulting in increased fire size and/or severity for all action alternatives. Overall, Alternative B would impact wildfire occurrence to the greatest extent, as fewer acres would be available for fuels treatments, resulting in increased potential for wildland fire occurrence compared with the other action alternatives. However, this impact potential is offset by decreased potential for fine fuel loading and fire severity because of greater commercial woodland harvest restrictions and decreased potential for human-caused ignition because of more restrictions on human activities. Management impacting the extent and severity of wildland fires under Alternative C would be comparable to Alternative B, but more land would be available for fuels treatments. Alternative D also opens more land to fuels treatments than Alternative B but has the fewest limitations on human activities, resulting in a higher potential for human-caused ignition.
Cultural Resources	Adverse impacts to cultural resources could result from any surface-disturbing activity that damages, destroys, or displaces artifacts; the construction of modern facilities that are out of character with historic settings; or decisions that directly alter any of the aspects of integrity that are determined essential in conveying the resource's significance. Collectively, Alternative B would have fewer impacts than all other alternatives due to less areas open to surface-disturbing activity as well as more stringent management actions for the INHT. Alternatives C and D would open more areas to certain types of surface-disturbing activity that could affect cultural resources, such as locatable mineral development and commercial woodland harvest, but would have more SOPs and BMPs to minimize those effects compared to Alternative A.
Paleontological Resources	Adverse impacts to paleontological resources could result from surface-disturbing activities that would destroy or permanently damage paleontological resources. Alternative B generally allows these potentially impactful activities in fewer acres throughout the planning area and therefore would have effects of lesser magnitude and geographic extent than Alternatives C and D. Alternative A provides the least clarity in terms of acres open or closed for certain uses or BMPs/SOPs to minimize impacts.
Visual Resources	Adverse impacts to visual resources would result from any management action that could modify existing landscape character by altering form, line, color, or texture of the landscape. Removal of vegetation through commercial, casual, or subsistence woodland product harvesting, allowance or restriction of new ROWs, and mineral development could modify form, line, color, and texture of the landscape by reducing the amount and type of vegetation in the landscape. Alternative B would have the least adverse impacts compared with all alternatives for visual values by managing more than half of the planning area as VRM Class I or II and all VRI Class I lands as VRM Class I or II. Overall, the alternatives would rank as follows from least magnitude and extent of adverse impacts to the greatest: B, C, D, and A.
Lands with Wilderness Characteristics	Adverse impacts to wilderness characteristics would result from actions that would allow new development and access, cause increased noise levels, introduce visual change to the existing landscape, and increase the potential for human interaction, as these could affect naturalness, solitude, and opportunities for primitive recreation. Management actions such as woodland harvest, OHV use, mineral development, ROW authorizations, and construction of structures in the planning area could result in these types of impacts. Of the alternatives, Alternative B would have the least impact on wilderness characteristics and is the only alternative that would manage a portion of the planning area for wilderness characteristics as a priority. Alternative C would have greater potential impacts to naturalness and opportunities for solitude and primitive recreation than Alternative B but less than Alternatives A and D. Alternative D would have the most impact to wilderness characteristics, as this alternative opens the largest acreage of lands with wilderness characteristics to new development and does not provide management of wilderness characteristics within the entire planning area. Impacts to naturalness and opportunities for solitude and primitive recreation from noise, human presence, soil compaction, and vegetation trampling would likely be greater under Alternative D, compared to Alternatives B and C.
Forestry and Woodland Products	Adverse impacts to forestry and woodland products (including both subsistence and commercial harvest) would result from management actions that would change accessibility to products and place limitations on accessible areas. All action alternatives would impact accessibility to forestry and woodland products, with the level of impact commensurate with the number of acres restricted. Under Alternative A, the entire planning area would be available for subsistence and casual uses on a case-by-case basis and there would be no specific limits on OHV use, allowing for continued access for house log and fuel wood harvesting. Of the action alternatives, Alternative D would result in the lowest magnitude and extent of adverse impacts to forestry and woodland products. Under Alternative B, management actions would limit the availability and accessibility of forestry and woodland products to a greater degree than Alternatives A, C, and D, resulting in greater impacts on accessibility to forestry products. Alternative C's limits on the availability of forestry and woodland products are less extensive than Alternative A and B but generally more extensive than under Alternative D.

Resource/ Resource Use/ Special Designation	Impact Summary
Grazing	Adverse impacts to grazing would occur when all or part of an existing grazing range or potentially suitable grazing habitat is temporarily or permanently made unavailable to livestock grazing through management practices. Vegetation treatments could increase or decrease lichen production and forage available for grazing, and surface-disturbing activity could impact forage availability. Wildland fire management could also affect grazing by either preserving or increasing available forage for livestock. Alternative C would result in the lowest magnitude and extent of adverse impacts to grazing because it would permanently close only a small portion of the planning area to grazing but include standards to prevent deterioration to grazing habitat. Alternative D would have the second-fewest impacts to grazing, followed by Alternative A and then Alternative B. Alternative B would have the greatest impacts to grazing because it would close the entire planning area to grazing.
Locatable & Salable Minerals	Adverse impacts to locatable and salable mineral development would result from withdrawal or closing an area to mining development because it removes the possibility of mineral resources in that area being accessed and extracted. Alternatives C and D would essentially have the same level of impacts, which would be lower than Alternative A and B because they would open more areas to locatable mineral development, particularly in areas with medium or high locatable mineral potential. Alternative B, with the highest number of acres to be withdrawn or closed (including areas of medium and high locatable potential), would have the highest impact of the three action alternatives.
Leasable Minerals	Adverse impacts on leasable minerals would result from the closure of an area to exploration and development of coal, gas, oil, phosphate, sodium, and geothermal resources due to management actions for other resource and resource use programs. Areas closed to leasing include areas where it has been determined that impacts to other land uses or resource values cannot be adequately minimized, and appropriate minimization of impacts could only be ensured by closing the land to leasing through either statutory or administrative requirements. Such closures would remove these areas from leasing and would represent an impact on the potential discovery, development, and use of these resources by decreasing their potential availability. Alternative D would result in the lowest magnitude and extent of adverse impacts to leasable minerals because it would open the most acreage to leasable mineral development with standard stipulations than any other alternative. Alternative A would open more acres to leasing with standard stipulations than Alternative C but would overall open fewer acres than Alternative C. Alternative B would have the greatest impacts because it would close more acres to leasing and open fewer acres with standard stipulations than any other alternative. Because leasable mineral potential in the planning area has been defined as low and the potential for development of the resources is low due to the remoteness of the area and lack of infrastructure, impacts to leasable minerals would be small under all alternatives.
Lands & Realty	Adverse impacts to lands and realty would result from management actions that identify parcels for acquisition, retention, or disposal, as they would change the number of acres directly owned or managed by the BLM. Other changes in the lands and realty program occur when parcels are withdrawn. The creation of new withdrawals, maintenance of existing withdrawals, or revocation of existing withdrawals would have implications on land use and resource protections, such as changing land status and limiting BLM's ability to accommodate future resource extraction. For ROWs, Alternative A would have the least impacts on BLM's ability to accommodate demand for new land use authorizations. In general, Alternative B would have more restrictions on land use and development than Alternatives C and D. Overall, the alternatives would rank as follows from least magnitude and extent of impacts to the greatest: D, C, A, and B.
Recreation & Visitor Services	Adverse impacts to recreation and visitor services include changes in the type of administrative protection to the INHT Special Recreation Management Area (SRMA), which could impact semi-primitive motorized recreation opportunities, experiences, and outcomes; changes in management actions that limit uses that could affect recreation opportunities; and changes in the level of conflict between subsistence hunters and casual users. Alternative B would generally result in the least level of conflict between recreation uses and community interests because Alternative B would have the largest Community Focus Zone area around rural communities, which would restrict special recreation permits for hunting guide/outfitters. The magnitude and geographic extent of impacts to recreation under Alternative D would be greater compared to Alternatives B and C due to the increased area open to ROW location. Alternative D could result in direct impacts to the Extensive Recreation Management Area (ERMA) by permitting surface disturbance and development that could alter the natural character of the landscape and therefore decrease the quality of recreation settings within the ERMA.
Travel & Transportation	Adverse impacts to travel and transportation management are related to accessibility of the planning area, including changes to travel mode, changing access at certain times of the year, and restricting access to certain areas, and the magnitude, extent, and duration of those changes. Alternative A is the least restrictive, with no route designation and very few limitations on new route locations or travel modes. Of the action alternatives, Alternative D would have the lowest magnitude and extent of adverse impacts on existing access for both casual and subsistence use and would only limit OHV use to existing routes in one area (INHT National Trails Management Corridor [NTMC] Travel Management Area), providing opportunities for network expansion. Alternative B would have the most restrictions on vehicular access because of management actions to minimize impacts to vegetation and wildlife and the highest acreage designated as ACECs. For casual OHV use throughout the entire planning area, Alternative B would either be closed to casual OHV use or limited to existing trails. Alternative B also provides the most benefit related to reducing social trails and limiting growth of the route network. Fewer acres would be prohibited for casual use under Alternative C than Alternative B; however, the entire planning area would still be either closed to OHV use or limited to existing trails for casual use. Alternative C provides fewer restrictions on OHV travel for subsistence use than Alternative B.

Resource/ Resource Use/ Special Designation	Impact Summary
Renewable Energy	Adverse impacts on renewable energy could occur because of management actions that limit the location, type, or extent of renewable energy development. The planning area is thought to have limited renewable energy resource potential because of its remote location, low population, and lack of infrastructure. Any renewable energy resource projects would likely be developed in the immediate vicinity of local communities. Alternative A would continue the existing management in the planning area and result in no new impacts to renewable energy resources. Under all action alternatives, travel and transportation network limitations and seasonal closures could hinder accessibility or transportation of renewable energy resources and result in fewer opportunities for renewable energy development projects as compared to Alternative A. Alternative D would result in the lowest magnitude and extent of adverse impacts on renewable energy development as compared to Alternatives B and C because it would provide the most flexibility for land use and the least restricted acreage for development. Alternative B would be the most restrictive to renewable energy development as compared to Alternatives A, C, and D. Limitations to renewable energy development under Alternative C would be less restrictive than Alternative B and generally more restrictive than Alternative A and D.
ACECs	Adverse impacts to ACECs would result from activities that could degrade the relevant and important values (R&Is) for which the ACEC was designated or is being considered for designation, such as surface-disturbing activities including commercial woodland harvest, grazing, mineral development, OHV use, and ROW development. Under Alternative A, the 11 existing ACECs would remain (1,884,376 acres), which were designated for fish, cultural, wildlife, or ecological R&Is. Under all alternatives, R&Is for fish or cultural resources would continue to receive some level of management through State and federal laws and regulations. Alternative B would designate 12 ACECs, which would entail reconfiguring or eliminating some existing ACECs and designating new ones. ACECs would comprise 3,912,698 acres under Alternative B. Designation includes specific provisions designed to avoid and minimize impacts to R&Is. Management under Alternative B would minimize impacts to fish and cultural resources in the ACECs to the greatest degree, as the geographic extent of ACEC-designated lands would be largest and would be managed to limit surface-disturbing activities. No ACECs would be designated under Alternative C or D, although Alternative C would include some management actions that would protect identified R&Is. Therefore, Alternative D would have the fewest management provisions for minimizing impacts to R&Is from surface disturbance.
National Trails	Adverse impacts to national trails include surface-disturbing activities such as commercial woodland harvest, grazing, mineral development, OHV use, and ROW development. The BLM manages approximately 77 miles of the INHT within the planning area. All action alternatives would designate lands for the INHT NTMC, which is designed to support the nature and purpose of the INHT. Alternative B would result in the lowest magnitude and extent of adverse impacts to the INHT because it would open fewer acres in the INHT to surface-disturbing activities as described above and would designate a larger area as the INHT where such activities would be limited. Overall, the alternatives would rank as follows from least magnitude and extent of adverse impacts to the greatest: B, C, D, A.
Wild and Scenic Rivers	Adverse impacts to WSRs include management actions that would affect the free-flowing condition of the river and identified Outstanding Remarkable Values (ORVs). The planning area contains one designated Wild and Scenic River (WSR), the Unalakleet, and 18 rivers determined eligible for inclusion in the National WSR System. The Unalakleet would continue to be managed as part of the National WSR System under all alternatives. Under Alternative A, eligible rivers would continue to be managed per BLM Manual 6400 (BLM 2012c). Alternative B would be the most restrictive of the magnitude and extent of surface-disturbing activities permitted near designated and suitable WSRs, and so would be most protective of ORVs, water quality, and free-flowing condition, and wild attributes of these waterways. Alternative C would have greater beneficial impacts to WSR values than Alternative A, although less than Alternative B. Although the 18 currently eligible rivers would not be recommended as suitable under Alternatives C or D and would no longer be considered for inclusion in the National WSR System, the majority of the acreage suitable for WSR acreage under Alternative B would be managed as HVW under Alternatives C and D. Alternative D would be least protective of WSR ORVs and wild attributes.
Support for BSWI Communities	Adverse impacts to BSWI communities include changes in land use designation (HVWs, WSR corridors, ACECs, lands with wilderness characteristics) that could restrict availability and use and increase competition for resources; changes in the acreage of lands available for ROW authorization, woodland harvest, and mineral development, which could restrict the use of marketable resources; and management of special recreation permits, which could affect competition for subsistence resources and influence opportunities for jobs and labor income. Management actions that could affect social and economic conditions in BSWI communities include changes to subsistence resource availability and distribution, cost of accessing subsistence resources, level of coordination and collaboration with communities, and to a limited degree, the number of jobs and amount of labor income in communities in the planning area. None of the alternatives are expected to result in substantial or immediate changes to social and economic conditions in planning area communities, but they differ in their approaches to addressing current and future issues. Alternative A would not provide any additional measures to avoid or minimize impacts to subsistence resources, in contrast to the other alternatives, which presume that some additional level of management is necessary to address possible threats to resources over the next 20 years. Therefore, Alternative A is not responsive to community demands for ensured, sustainable protection of subsistence resources or for increased collaboration in management and creates an adverse environmental justice impact. The three action alternatives contain a variety of measures to protect subsistence uses of BLM-managed lands and address community demands for protection of and increased participation in management of resources and opportunities. These and other actions would reduce potential impacts to subsistence resources. Alternative B would reduce the potential for competition between recreational and subsistence uses by designating key areas for additional management of long-term resource values within the planning area. Alternative C emphasizes adaptive management at the planning level to manage the long-term sustainability of resources while providing for multiple resource uses and market opportunities. Alternative C designates more protective areas than Alternative D but fewer than Alternative B. Alternative D does not rely on designated areas to manage subsistence resources, instead relying on increased coordination with communities to address issues as they arise on a case-by-case basis. Alternative D also poses the fewest restrictions on potential development opportunities.

Resource/ Resource Use/ Special Designation	Impact Summary
Subsistence	Adverse impacts to subsistence are those that could result in reductions in abundance, access, or availability of subsistence resources from habitat loss, mortality, disturbance, and alteration of habitat use or migration patterns. Management actions most likely to adversely affect subsistence include OHV restrictions which could limit access to subsistence resources, mineral development which could impact availability of resources, and ROW which could affect both availability of resources and access. Alternative B would have more impacts to access due to more acres closed to subsistence OHV use than other Alternatives but would have fewer impacts from ROW and mineral development.
Hazardous Materials and Health and Human Safety	Adverse impacts related to hazardous materials and human health and safety would result from management actions exposing individuals to potentially harmful materials and conditions such as wildland fire, mineral development, and ROW development. Actions that control the use of public areas and keep users and development out of dangerous areas are more likely to decrease risk of release and exposure to hazardous materials. Controlling access on public lands could also benefit health and human safety by managing sections of land that could present dangers and by concentrating use in areas that are better suited for the activity. Some actions, such as fuel management, are benefited by having access to land, so controlling access or the ability for certain groups to operate on the land could increase the risk to human health and safety. Alternative A would generally minimize impacts to health and human safety to a lesser extent than the action alternatives. Of the action alternatives, Alternative B would result in the lowest magnitude and extent of adverse impacts to hazardous materials and health and human safety by restricting surface-disturbing activities and potential use conflicts. Management under Alternative C would minimize impacts to hazardous materials and health and human safety to a lesser extent than under Alternative B but to a greater extent than under Alternatives A and D. Alternative D would minimize impacts to hazardous materials and health and human safety to a lesser extent than under Alternatives B and C but to a greater extent than under Alternative A.

Chapter 1. Introduction

The United States (U.S.)[1] Department of the Interior (DOI), Bureau of Land Management (BLM) Anchorage Field Office has prepared this draft resource management plan (RMP) and associated environmental impact statement (EIS).[2] The Draft RMP/EIS has been developed in coordination with federal, State, and local governments, Alaska Native tribes, and interested members of the public, and it provides:

- Consolidated direction to address land and resource use and development on BLM-managed lands within the Bering Sea-Western Interior (BSWI) Planning Area (planning area); and
- Analysis of the environmental effects that could result from the implementation of the alternatives proposed in the RMP.

The RMP will replace the 1981 Southwest Management Framework Plan (SWMFP; BLM 1981)[3] and a small portion of the 1986 Central Yukon RMP (CYRMP [BLM 1986a]), including amendments. This Draft RMP/EIS provides planning-level guidance for the management of resources and designation of uses on all BLM-managed public lands within the planning area and any BLM-managed subsurface estate, including the subsurface beneath private surface estate if the subsurface estate was reserved to the BLM. Nothing in this plan will impact Alaska Native Claims Settlement Act (ANCSA) or Alaska Statehood Act land conveyances. Lands covered by the RMP include the following:

- **BLM-unencumbered:** These are lands that will most likely be retained in long-term federal ownership. These lands, which constitute approximately 17.2 percent of the planning area, are not selected by the State of Alaska or by Native corporations or villages.
- **BLM State-selected:** These are formerly unappropriated and unreserved public lands that were selected by the State of Alaska as part of the Alaska Statehood Act of 1958 and the Alaska National Interest Lands Conservation Act (ANILCA). BLM State-selected lands comprise approximately 4 percent of the planning area.
- **BLM ANCSA Native corporation-selected:** ANCSA gave Alaska Natives an entitlement of 44 million acres to be selected from a pool of public lands specifically defined and withdrawn by the Act for that purpose. Native-selected lands constitute approximately 0.2 percent of the planning area.
- **Dual-selected:** These are lands that have been selected by both the State and Native corporations and represent overlap in the State-selected and ANCSA Native corporation-selected lands.
- **Mineral estate:** The BLM administers mining claims that existed prior to ANILCA and manages oil and gas leases under the mineral leasing laws that are compatible with the purposes of the U.S. Fish and Wildlife Service (USFWS)-managed National Wildlife Refuges (NWRs).
- **Military lands:** These lands are under withdrawal to the military. If released and returned to BLM management during the life of the plan, direction contained in this Draft RMP/EIS would apply. Military lands constitute less than 0.1 percent of the planning area.

Management of subsurface estate within USFWS lands is administered by the BLM under the Mineral Leasing Act of 1920. ANILCA Section 304(c) is addressed in the *Mineral Occurrence and Development Potential Report for Leasable Minerals within the Bering Sea – Western Interior Planning Area* (BLM

[1] See Appendix A for a list of acronyms and other abbreviations used in this document. A glossary of commonly used terms is presented in Appendix B.
[2] See Appendix C for a list of Draft RMP/EIS preparers.
[3] See Appendix D for a complete list of references cited in this document.

2015a) and will be addressed on a case-by-case basis and not subject to this plan. Similarly, any prior existing mining claims administered by the BLM within USFWS or U.S. National Park Service (NPS) lands will be addressed on a case-by-case basis and are not covered by the RMP.

Other lands within the planning area not covered by the RMP include the following:

- **State of Alaska lands:** These are lands that have already been conveyed to the State of Alaska. These lands constitute approximately 29 percent of the planning area.
- **ANCSA Native-corporation lands:** These are lands already conveyed to village and regional Native corporations. These lands constitute approximately 16 percent of the planning area.
- **NPS lands:** These are lands within the Lake Clark National Park and Preserve. These lands constitute approximately 1.0 percent of the planning area.
- **USFWS lands:** These are lands managed by the USFWS within the Yukon Delta and Innoko NWRs. These lands constitute approximately 30 percent of the planning area.
- **Private lands:** These lands are privately owned, aside from Native corporations or villages. These lands constitute less than 0.1 percent of the planning area.
- **Native allotment:** These are lands acquired by Alaska Natives under the Alaska Native Allotment Act of 1906 and the Native Townsite Act of 1926. These lands are held in trust by the federal government and are trust responsibility of the Bureau of Indian Affairs. These lands constitute approximately 1 percent of the planning area.
- **Navigable Waters:** Navigable waters are not subject to BLM management actions up to the ordinary high water mark (OHWM).

1.1 Purpose and Need for the Resource Management Plan

Because the SWMFP did not follow the current land use process for development of RMPs, the BLM chose not to revise the 1981 plan, but to replace it with the RMP. The BLM is also revising the 1986 CYRMP for the portions of that planning area that changed under a district boundary realignment and are now in the current planning area. See Map 1-1.[4]

The purpose of this Draft RMP/EIS is to document decisions that guide future land management actions and subsequent site-specific implementation decisions. The decisions will establish goals and objectives for resource management (desired outcomes) and the identified uses (allocations) that are allowable, restricted, or prohibited in order to achieve the goals and objectives. Management actions are also identified where they could help to achieve desired outcomes and include measures or criteria that may guide both day-to-day and long-term management. All decisions are pursuant to the multiple-use and sustained-yield mandate of the Federal Land Policy and Management Act of 1976 (FLPMA). In addition, the purposes of this plan include the following:

- Reevaluate, with public involvement, existing conditions, resources, and uses, and reconsider the mix of new resource allocations and management decisions designed to balance use and the protection of resources pursuant to FLPMA and applicable law.
- Resolve multiple-use conflicts or issues between resource values and resource uses. The RMP will establish consolidated guidance and updated goals, objectives, and management actions for BLM public lands in the planning area. The RMP will be comprehensive in nature and address issues that have been identified through agency, interagency, and public scoping efforts.

[4] Volume 3 includes all maps referenced in this Draft RMP/EIS and written descriptions of all maps referenced in this Draft RMP/EIS.

- Disclose and assess the direct, indirect, and cumulative impacts of the reasonably foreseeable future actions resulting from the management decisions in this Draft RMP/EIS and draft alternatives pursuant to the requirements of the National Environmental Policy Act of 1969 (NEPA), its implementing regulations, and other applicable laws.
- Integrate landscape findings and model outputs from relevant rapid ecoregional assessments into management alternatives, impact assessments, and cumulative impacts, as appropriate.
- Review the SWMFP and its amendments and determine which management decisions should be retained in the revised RMP.

The need for the RMP is to provide guidance that will address the substantial alterations in resources, circumstances, laws, policies, and regulations in the planning area since 1981. The 1981 SWMFP and the 1986 CYRMP do not incorporate current management policy considerations and lack:

- guidance garnered from the counsel of professionals in the environmental, natural, and social sciences, BLM staff, and the public, including Alaska Natives and subsistence resource users;
- consideration of environmental and social concern issues;
- a need to prevent unnecessary or undue degradation of the land, resources, and the environment; and
- the influence of modern land and resource management tools and techniques.

This Draft RMP/EIS is relevant to the current and future issues of BLM-managed lands within the planning area and allocates resources under the multiple use and sustained yield mandate.

1.2 Description of the Planning Area

1.2.1 Overview

The planning area extends south from the Northwest Alaska and Lower Yukon watersheds (Hydrologic Unit Code [HUC] 4) to the northern portion of the Southwest Alaska watershed (HUC 4), including all lands west of Denali National Park and Preserve to the Bering Sea and covers 13.5 million acres managed by the BLM within the broader area of 62.3 million. There are very few roads in the planning area; the longest is a 43-mile gravel road that connects Takotna on the Kuskokwim River with the historic mining community of Ophir on the Innoko River. Map 1-2 provides a general overview of the planning area.

The planning area includes BLM-managed lands selected by the State of Alaska or Alaska Native corporations that have not been conveyed; USFWS-managed NWRs that fall partially (Yukon Delta NWR) or wholly (Innoko Unit of the Innoko NWR) within the planning area; and Lake Clark National Park and Wood-Tikchik State Park, which reach into the southeastern portion of the planning area. Management direction in the plan only applies to BLM lands within the planning area.

Sixty-five rural communities are found within the planning area. Based on 2010 data from the U.S. Census Bureau for these communities, the population of the planning area is approximately 25,000 (U.S. Census 2010a). The largest population center is Bethel, located in the southwest portion of the planning area, with a population of 6,080 (U.S. Census 2010b).

The State of Alaska's primary administrative divisions are referred to as boroughs. There are small portions of four organized boroughs in the planning area: Denali Borough, Lake and Peninsula Borough, Matanuska-Susitna Borough, and Kenai Peninsula Borough. Collectively, 942,292 acres (1.5 percent) of the planning area is within one of these organized boroughs; the remainder is within the Unorganized Borough.

1.2.2 Land Uses

The planning area is characterized by large tracts of undisturbed ecosystems that support a variety of native wildlife and fish species. Subsistence use is the most prevalent land use in the planning area. Wildlife and fish resources are a key to subsistence use supporting rural communities, particularly Alaska Native villages. Subsistence hunting can be geographically described according to the State's Game Management Units (GMUs) and the Wildlife Management Units identified by the Federal Subsistence Management Program. The planning area contains large portions of GMU 18 in the west, GMU 19 in the east, GMU 21 in the north central region, and GMU 22 in the northwest, and includes a small portion of GMU 20 in the northeast.

The undeveloped nature of the planning area, the existence of unique historical features such as the Iditarod National Historic Trail (INHT), and the presence of surrounding NWRs provide unique outdoor recreational opportunities and events, including guided hunting, fishing, and eco-tourism. The medium and high potential for locatable minerals in certain parts of the planning area supports both small- and large-scale placer and hard rock mining. Levels of oil, gas, geothermal (leasable), and coal (leasable) development in the planning area are currently very low, due to relatively low potential or lack of knowledge regarding potential (Map 1-3). Forest resources within the planning area have historically provided materials for sheltering and heating. Firewood is a staple of the subsistence lifestyle for heating and, in some instances, cooking. BLM forests could play a role in the long-term supply of wood; in particular, those BLM lands near rivers could assist in wood transport.

1.2.3 Land Tenure/Land Ownership

Within the planning area, roughly 13.5 million acres are managed by the BLM, including BLM unencumbered lands (approximately 10.7 million acres) and lands that are selected but not yet conveyed under the Alaska Statehood Act and ANCSA, as amended (called encumbered lands). These lands are referred to as State-selected and ANCSA Native corporation-selected lands and comprise approximately 2.6 million acres and 144,300 acres, respectively (Map 1-2). The land status percentages are shown graphically below in Figure 1-1. Acreages are based on land status as of August 2016.

1.2.4 Ecoregions

The planning area consists of eight ecoregions that provide the resources for all planning area land uses (see Map 1-4). The RMP is committed to the concept of landscape-level ecosystem management as the most effective tool to maintain the long-term sustainability of these uses by conserving major ecological services. Accordingly, these ecoregions form the basis for developing the landscape-level adaptive management in the range of RMP alternatives. The eight ecoregions are Yukon-Kuskokwim Delta, Nulato Hills, Yukon River Lowlands, Kuskokwim Mountains, Tanana-Kuskokwim Lowlands, Lime Hills, Alaska Range, and the Ahklun Mountains ecoregions.

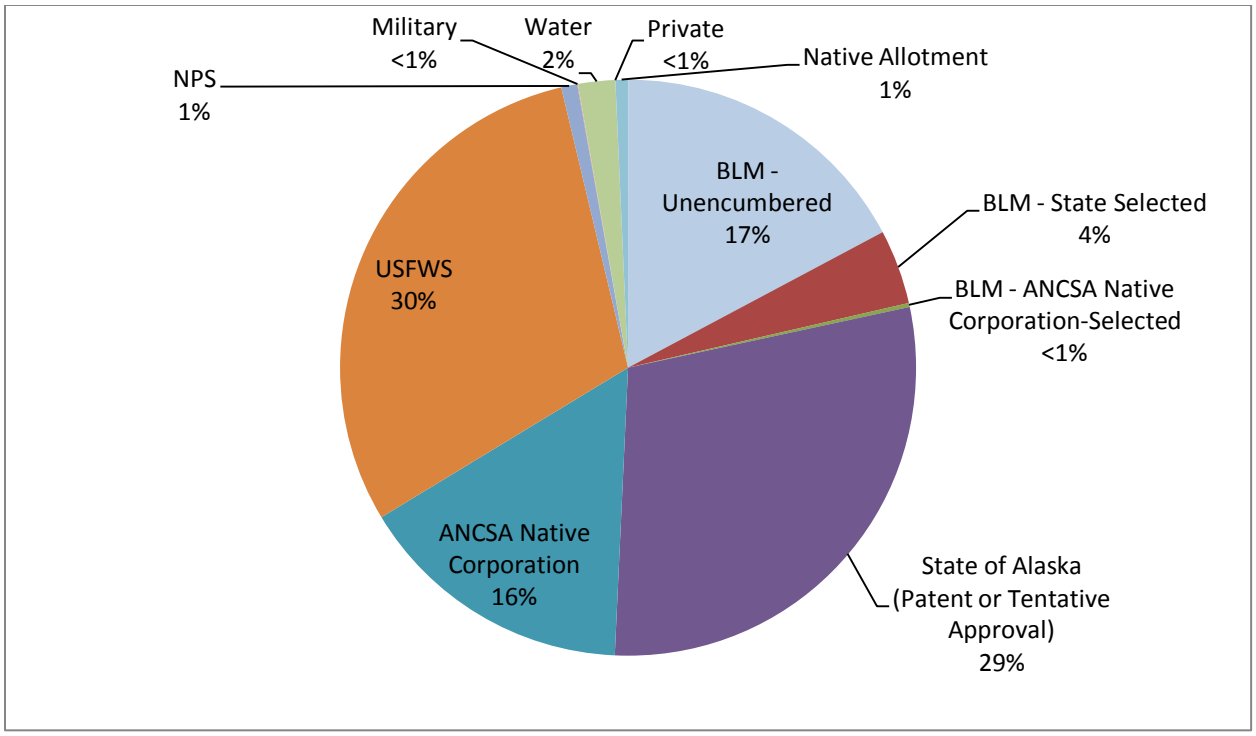

Figure 1-1: Land Status within the Planning Area

1.3 Scoping and Planning Issues

The *Federal Register* (FR) published BLM's Notice of Intent to develop this Draft RMP/EIS on July 18, 2013 (78 FR 42970). The scoping period was open for 180 days.

1.3.1 Scoping Process

A summary of the public and agency involvement for this Draft RMP/EIS is described below in Section 1.7, Consultation and Coordination.

1.3.2 Issue Identification

The BLM received 49 comment letters and 60 form letters from agencies, tribal members, industry organizations, interest groups, and individuals during the scoping process (BLM 2014a). Additionally, nearly 900 comments were received during preliminary alternatives development in 2015 (BLM 2015b). Based on scoping, 27 planning issues were identified (Table 1-1). See the BSWI Summary Scoping Report (BLM 2014a) for the list of commenters and summary of the comments and additional issues not expressed during the scoping period. The BLM used the planning issues to help guide the development of a reasonable range of alternative management strategies (see Chapter 2) and to assist in determining the scope of impact analysis for this Draft RMP/EIS (see Chapter 3).

Table 1-1: Resource Issues Identified During Scoping

Non-Native Invasive Species Threats (including plant, terrestrial, and aquatic species)	Forestry and Woodland Products
Vegetative Communities	Livestock Grazing
Soil, Water, Air	Renewable Energy
Climate / Climate Change	Lands and Realty
Fish and Aquatic Species	Recreation, Visitor Services, and Recreation Authorization Permits
Wildlife	Trails and Travel Management including Off-Highway Vehicles (OHVs)
Special Status Species	Areas of Critical Environmental Concern
Wildland Fire Ecology and Management	Wild and Scenic Rivers
Cultural Resources	National Trails
Paleontological Resources	Interpretation and Environmental Education
Visual Resources	Subsistence
Lands with Wilderness Characteristics	Social, Economic (Non-market Values), and Environmental Justice
Mineral Management: Leasable Fluid and Solid Minerals	Public Safety and Hazardous Materials
Mineral Management: Locatable and Salable Minerals	

1.3.3 Issues Considered but Not Further Analyzed

Comments addressing issues outside of the scope of the RMP include those pertaining to reservation of 17(b) easements and issues that dealt with State of Alaska jurisdiction, including hunting regulations, law enforcement, and predator control. These issues are beyond the scope of the RMP because they involve decisions the BLM does not have authority to make at the planning level or the issues are not appropriate planning decisions. These issues are discussed in more detail in the BSWI Scoping Summary Report (BLM 2014a).

1.4 Planning Criteria

The BLM develops planning criteria to establish standards, rules, and other factors to guide the planning process. Planning criteria assist the BLM in defining the scope of work and estimating the extent of data collection and analysis and help guide the final plan selection and provide a basis for judging the responsiveness of the planning options. Prior to the public scoping process, the BLM internally developed 19 preliminary planning criteria as described on page 36 of the Scoping Summary Report (BLM 2014a). These criteria focus the BSWI planning effort and guide decision-making identified in the Notice of Intent (78 FR 42970).

1.5 Relationship to Other Policies, Plans, and Programs

1.5.1 Other Related Plans

According to BLM planning regulations found in 43 Code of Federal Regulations (CFR) 1610, BLM RMPs and amendments must be consistent, to the extent practical, with officially approved or adopted resource-related plans of state and local governments, other federal agencies, and tribal governments. State agency and other federal agency plans for neighboring areas or cross jurisdictional purposes include the USFWS, NPS, BLM, and State of Alaska. The BSWI RMP will strive to be consistent with other BLM-administered plans pertaining to lands included in and surrounding the planning area: *Iditarod National Historic Trail Comprehensive Management Plan* (BLM 1986b); *Unalakleet National Wild River Management Plan* (BLM 1983); *Alaska Statewide Land Health Standards* (BLM n.d.); *Decision Record*

for the Land Use Plan Amendment for Wildland Fire and Fuels Management for Alaska Environmental Assessment (BLM 2005a); and *Alaska Interagency Wildland Fire Management Plan* (Alaska Wildland Fire Coordinating Group 2016). Appendix E provides a listing of the management regulations used to develop the RMP.

1.5.2 Policy and Legislation

The Alaska Statehood Act, ANILCA, and ANCSA, as well as other policies and legislation, could influence decisions, constrain alternatives, or affect implementation of the Approved RMP. Appendix E provides a listing of the policy and program guidance used for developing the RMP. The list is not intended to be comprehensive, but rather provide an indication of the key laws and regulations that govern resource management in the planning area.

1.6 Implementation and Monitoring of the Resource Management Plan

The BLM will implement the RMP when the responsible BLM State Director signs the Record of Decision (ROD) for the Approved RMP. The availability of the Approved RMP/ROD will be announced in the FR and posted on the BSWI RMP website. The BLM will develop a schedule for systematically implementing the decisions in the Approved RMP contingent on BLM budget constraints and applicable federal laws, regulations, and policies.

The BLM will monitor implementation of the RMP and periodically evaluate the need for revisions or amendments every 5 years at a minimum per the BLM Handbook H-1601-1, *Land Use Planning* (BLM 2005b). RMP evaluations will also be completed prior to any plan revisions and for major RMP amendments. Revisions to the RMP will be required to comply with FLPMA planning guidelines, as well as the environmental review requirements in NEPA.

1.6.1 Compliance with NEPA

This Draft RMP includes proposed goals, objectives, and decisions subject to environmental analysis through the preparation of the Draft and Final EIS. The Approved RMP will include a final set of goals, objectives, and decisions that were the outcome of the environmental analysis performed in compliance with NEPA. Subsequent planning at the project or activity plan level would require additional analysis under NEPA or an amendment to the RMP.

1.6.2 Adaptive Management and Regional Mitigation Strategies

The RMP will be implemented using an adaptive management process. The DOI Office of Environmental Policy and Compliance Environmental Statement Memoranda 13-11 defines adaptive management as "… a system of management practices based on clearly identified outcomes, monitoring to determine if management actions are meeting outcomes, and, if not, facilitating management changes that will best ensure that outcomes are met or to re-evaluate the outcomes" (BLM 2005b). Under adaptive management, decisions, plans, and proposed activities are treated as working hypotheses rather than final solutions to management of resources and uses.

1.7 Consultation and Coordination

1.7.1 Introduction

The BLM conducts the decision-making process in accordance with the requirements of NEPA, Council on Environmental Quality (CEQ) regulations, and department policies and procedures. NEPA, and its associated regulatory and policy framework, requires that all federal agencies involve interested groups of the public, as well as state and local governments, other federal agencies, and interested tribes, in their decision-making process.

A variety of strategies have been implemented to foster a collaborative approach, improve communication, and develop understanding of the issues and the process in development of this Draft RMP/EIS. The BLM has conducted public consultation and coordination opportunities throughout the development of this Draft RMP/EIS. Opportunities included formal and informal consultation with agencies, federally recognized tribes, groups, and individuals. Public meetings, workshops, informational bulletins, a project website, correspondence, meetings with agencies and interest groups, and individual contacts were some of the ways for interested stakeholders to participate in the planning process.

1.7.2 Specific Consultation and Coordination Activities

During preparation of this Draft RMP/EIS, the BLM has conducted specific consultation and coordination efforts with cooperating agencies, tribal and ANCSA corporations, federal and State agencies, and interest groups. Consultation is ongoing throughout the planning process.

1.7.3 Public Involvement Opportunities

Scoping

The BLM initiated the scoping process with the publication of a Notice of Intent in the FR on July 18, 2013, and concluded it 180 days later on January 17, 2014. The BLM requested agencies, tribes, groups, and the public to identify issues and concerns within the planning area. Scoping comments collected at public meetings and by email, letters, and phone calls were used to identify issues and define the scope of analysis for management alternatives. Meetings were held in 10 communities with proximity to substantial blocks of BLM lands, the INHT, the Unalakleet Wild River Corridor, and major watersheds in the planning area (Kuskokwim and Yukon Rivers). Local and regional news releases advertised the times and locations of these meetings. Additional detail on the public outreach efforts related to the scoping process is included in the Scoping Report (BLM 2014a).

Preliminary Alternatives Outreach

During February and March 2015, the BLM held public meetings in 14 communities that focused on explaining the preliminary alternatives for this Draft RMP/EIS (2014a). The BLM released the Preliminary Alternatives Comment Summary Report in August 2015, which summarized input received on preliminary alternatives for this Draft RMP/EIS. The BLM used the comments, along with subsequently identified issues and planning criteria, to help formulate a reasonable range of alternatives for analysis in this Draft RMP/EIS.

Additional Public Outreach

The BLM provided additional public outreach when there were substantial project updates through its BSWI ePlanning website; mailing of postcards and flyers; six newsletter publications; eNews Blasts; and through press releases, newspaper advertisements, and radio public service announcements.

Public Comment on Draft RMP/EIS

The 90-day public comment period on the Draft RMP/EIS will begin when the U.S. Environmental Protection Agency (EPA) publishes a notice of the filing of the draft in the FR (43 CFR 1610.2(e)). A series of public meetings will be held to gather comments on the Draft RMP/EIS. Interested members of the public can check the BLM BSWI project website at www.blm.gov/alaska/BSWI, which provides a link to the ePlanning page with the current list of updates and scheduled meetings.

At the conclusion of the comment period, the BLM will revise the Draft RMP/EIS and publish the Proposed RMP/Final EIS. The BLM will announce availability of the proposed document in the FR. The 30-day public protest period will begin on the date the EPA notice appears in the FR. Upon resolution of any protests, the plan will be approved, and a ROD will be issued.

Continuing Opportunities for Public Participation

During implementation of the RMP, continuing opportunities for public participation could include, among other things, Resource Advisory Council recommendations relating to the management of the planning area; volunteer partnerships or assistance agreements with other agencies to complete assessments, establish baseline data, monitor, and recommend management actions as a result of these processes; working groups, agreements, and memorandums of understanding with State and tribal governments; and public involvement associated with subsequent NEPA compliance at the project or activity plan level.

Chapter 2. Alternatives

2.1 Introduction

This chapter describes proposed Alternatives A through D for the BSWI Draft RMP/EIS. It includes detailed descriptions of each alternative and accompanying references to maps identifying the geographic location and extent of proposed management actions. The proposed alternatives were developed in response to issues and concerns identified through internal agency scoping, public scoping, the Area of Critical Environmental Concern (ACEC) comment and nomination period, and the preliminary alternatives outreach period. The identified alternatives address current management needs and propose adaptive management strategies to best manage for known and anticipated resource trends.

2.2 Alternative Development Process for the BSWI RMP

The BSWI RMP Interdisciplinary (ID) Team used the BLM planning process according to BLM's Land Use Planning Handbook (BLM 2005b) to develop a range of reasonable alternatives for the RMP that would 1) meet multiple use and sustained yield mandates of the FLPMA; 2) address the planning issues compiled from the public, cooperating agencies, and the BLM ID Team; and 3) fulfill the purpose and need for the RMP (see Section 1.1) by addressing management needs and opportunities for the planning area.

The ID Team is composed of personnel from the BLM and cooperating agencies and tribes with jurisdictional authority or special expertise over resources affected by the RMP. These agencies and tribes include the USFWS, the State of Alaska, and the Native Village of Chuathbaluk. The steps in alternatives development involved frequent reexamination following periods of public and staff review.

2.3 Management Common to All Alternatives

Some allowable uses and management actions from the two existing RMPs remain valid and do not require revision in this RMP. All of the proposed action alternatives carry the following forward:

- Comply with State and federal laws, regulations, policies, and standards, including the FLPMA multiple use and sustained yield mandates.
- Implement actions originating from laws, regulations, and policies and conform to day-to-day management, monitoring, and administrative functions not specifically addressed.
- Preserve valid existing rights, which include any leases, claims, or other use authorizations established before a new or modified authorization, change in land designation, or new or modified regulation is approved. Existing fluid mineral leases are managed through Conditions of Approval (COAs) outlined in the RMP.
- Offer diverse recreational opportunities that foster outdoor-oriented lifestyles and enhance quality of life.
- Make every effort to avoid adverse effects if cultural or paleontological sites are found at project locations. Consult with the State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), its implementing regulations (36 CFR 800), the Protocol for Managing Cultural Resources on Lands Administered by the Bureau of Land Management in

Alaska agreement between the BLM and 22 Alaska State Historic Preservation Officer, dated February 5, 2014 (BLM 2014b), and the Paleontological Resources Preservation Act of 2009.

- Seek to enhance collaborative opportunities, partnerships, and communications with other agencies and interested parties to implement the RMP, including education and outreach and project-specific activities.

- Identify and apply mitigation measures and conservation actions to achieve land use plan goals and objectives. The sequence of mitigation action will be the mitigation hierarchy (avoid, minimize, rectify, reduce, or eliminate over time), as identified by the CEQ (40 CFR 1508.20) and the BLM's Manual Section 1794, *Regional Mitigation* (BLM 2016a).

2.3.1 Alaska National Interest Lands Conservation Act (ANILCA) Access – Implementing Sections 811 and 1110(a) of ANILCA

This section provides guidance on implementing Sections 811 and 1110(a) of ANILCA. ANILCA provides specific guidance on access for:

- The use of snowmobiles, motorboats and other means of surface transportation traditionally used for subsistence purposes by residents on all federal public lands (Section 811). See ANILCA Section 102(3) for the definition of "public lands."
- The use of snowmobiles, motor boats, airplanes and non-motorized surface transportation methods for traditional activities and travel to and from homesites on conservation system units, national recreation areas, and national conservation areas (Section 1110).

Pursuant to ANILCA Sections 811 and 1110, such uses are subject to reasonable regulation. The NPS and USFWS have developed regulations to implement Section 811 of ANILCA. While the BLM has not developed similar regulations, a process similar to that promulgated by NPS and USFWS will be followed.

The BLM will ensure that rural residents engaged in subsistence uses shall have reasonable access to subsistence resources (ANILCA Section 811(a)) and will implement restrictions and closures to the use of snowmobiles, motorboats, and other means of surface transportation traditionally employed for subsistence purposes by local rural residents (ANILCA Section 811(b)) only if the Authorized Officer (AO) determines that such use is causing or is likely to cause an adverse impact on public health and safety, resource protection, protection of historic or scientific values, subsistence uses, conservation of endangered or threatened species, or other purposes, values, and uses for which the lands are being managed under FLPMA or designated by ANILCA[5] (e.g., Wild and Scenic River [WSR], National Recreation Area, National Conservation Area, if applicable).

The BLM will follow the regulations implementing Section 1110 of ANILCA, as found in 43 CFR Part 36. The BLM will implement restrictions and closures to use of snowmobiles, motorboats, aircraft, and non-motorized surface transportation methods (e.g., domestic dogs, horses, and other pack or saddle animals) for traditional activities only if the AO makes a finding, pursuant to 43 CFR 36.11(h), that such use would be detrimental to the resource values of the area.

[5] Closure criteria pursuant to National Park Service regulations at 36 CFR 13.460(b) and U.S. Fish and Wildlife regulations at 50 CFR 36.12(b).

To meet the requirements of ANILCA, decisions in this Draft RMP/EIS that are covered by Sections 811 and 1110 of ANILCA will be listed as "Proposed" Supplemental Rules in the ROD. Where transportation and travel management planning is deferred, interim rules will be identified. After the RMP/EIS RODs and travel management decision record are signed, the BLM will undertake the following process for both interim and final decisions:

- Publish and provide notice of proposed Supplemental Rules in the FR and other formats and locations reasonably calculated to inform residents in the affected vicinity.
- Allow a minimum of 60 days for the public comment period on the proposed Supplemental Rules.
- Hold public hearings in the affected vicinity and other locations as deemed appropriate by the BLM.
- Respond to comments and publish the final Supplemental Rules in the FR.
- Make the final Supplemental Rules known by the following methods (at a minimum):
    - Supplemental Rules and maps with relevant information will be available for public inspection at the BLM office and at other places convenient to the public, and locations and formats reasonably calculated to inform residents in the affected vicinity.
    - Signs will be posted at appropriate sites.
    - BLM brochures and websites will list Supplemental Rules and show relevant maps.

The Supplemental Rule process described above will be followed to address any travel management plan decisions that are covered by Sections 811 and 1110 of ANILCA. Additional ANILCA provisions are summarized in Appendix E.

2.3.2 Mitigation

Under all alternatives, the BLM will apply mitigation measures to BLM-authorized activities within the planning area to achieve land use plan goals and objectives while continuing to honor the BLM multiple-use mission. The BLM is directed to implement mitigation measures as per BLM Instruction Memorandum (IM) 2019-018, *Compensatory Mitigation* (BLM 2018a).

The BSWI RMP/EIS alternatives include the following proposed mitigation management actions:

- The BSWI RMP/EIS has preliminarily mapped low-functioning, previously mined stream systems with abandoned claims on public lands. In some areas, current withdrawals or other designations offer some protection against future development or the degradation of contemporary reclamation efforts.
- Adaptive management, including options for shifts in mitigation strategy and intensity based on monitoring results.
- Consideration of alternatives for bonding for locatable mineral development to better ensure that adequate reclamation of mine sites is completed.
- Proactive prioritization of survey and monitoring of resources/resource areas that could be evolving due to climate change and implementation of mitigation to address those impacts.
- Increased collaboration with other agencies and landowners to provide for landscape-level management and coordinated monitoring and mitigation efforts at an appropriate scale for impacts.
- Management to maintain or improve subsistence access.

2.3.3 Land Disposals

The BLM develops most RMPs to guide management of land over 20 or more years. The Secretary's policy is, generally, not to dispose of public lands. However, situations may arise over the life of an RMP, especially in areas where public land tracts are isolated and difficult to manage, where BLM may find it useful to have identified tracts as suitable for leaving public ownership. Therefore, most RMPs include identification of specific tracts of public land that meet the disposal criteria listed in Section 203 of FLPMA. This RMP step is just an identification of tracts meeting the criteria, not a decision to dispose of land. Any decision regarding whether or not to dispose of a particular parcel under any particular authority, whether by sale under Section 203 of FLPMA; exchange under Section 206 of FLPMA; or patent under the Recreation and Public Purposes Act of 1926, as amended, for instance, would require site-specific consideration and analysis, including, but not limited to, considerations of access, popular recreational uses, the existence of cultural resources or habitat for species, and whether such a parcel, isolated from the rest of the public lands, could be better suited for private ownership.

Section 203 of FLPMA specifies that BLM may only sell a tract of public land under Section 203 if the tract is identified through the land use planning process, pursuant to Section 202 of FLPMA, as meeting one or more of the disposal criteria listed in Section 203. The RMP determination that a particular tract meets one or more of the criteria for disposal through sale does not necessarily mean the BLM will sell or dispose of the land by another means. Rather, the process for disposing of public lands under FLPMA Section 203 (Sales) or Section 206 (Exchanges) or any other authority is a lengthy multi-decisional process requiring comprehensive site-specific analysis, and cadastral, cultural, and other resource surveys, when necessary, prior to the sale or disposition of a tract of public land. BLM bases the determination whether a tract meets one or more of the Section 203 disposal criteria on its ongoing inventory of all public lands and their resources conducted pursuant to Section 201 of FLPMA. The requirement under Section 203 that this determination be made through land use planning is consistent with the Section 202 requirement to manage public lands under land use plans, where these represent a broader scope, longer-term approach to management of public lands in an entire planning area that considers a wide variety of possible uses of the public lands.

In preparation for this land use planning initiative, the BLM conducted an inventory of the public land in the planning area to determine whether there are any tracts that meet one or more of the FLPMA Section 203 criteria for disposal out of Federal ownership:

(1) Such tract because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands, and is not suitable for management by another Federal department or agency; or

(2) Such tract was acquired for a specific purpose and the tract is no longer required for that or any other Federal purpose; or

(3) Disposal of such tract will serve important public objectives including, but not limited to, expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land and which outweigh other public objectives and values including, but not limited to, recreation and scenic values, which would be served by maintaining such tract in Federal ownership.

The above criteria were used to identify tracts available for exchange or disposal. Appendix F provides a list of tracts in the planning area identified as meeting one or more of these criteria, with an explanation for the basis for the BLM's determination.

2.4 Description of Alternatives

Four alternatives (three action alternatives and one no action alternative) from the alternatives development process were carried forward for analysis. All the alternatives share common goals and objectives; however, they address these goals and objectives to varying degrees with the potential for different long-range outcomes and conditions. Maps in Volume 3 show the different proposed management scenarios for the alternatives.

Alternative A (No Action): This alternative represents existing management mandated by current land use plans for the planning area and provides the benchmark against which to compare the other alternatives.

Alternative B: This alternative emphasizes reducing the potential for competition between recreational or developmental uses and subsistence resources by identifying key areas for additional management actions, which focuses on maintaining long-term resource values within the planning area.

Alternative C: This alternative emphasizes adaptive management at the planning level to maintain the long-term sustainability of resources while providing for multiple resource uses.

Alternative D: This alternative provides additional flexibility at the project-specific implementation level and fewer management restrictions at the planning level.

Table 2-1 compares the meaningful and quantifiable differences in management actions across the four alternatives. Resources, resource uses, and special designations with no meaningful, quantifiable differences between alternatives are excluded from the table. For Alternative A, geographic information system (GIS) data were not available for some management decisions. In those cases, acreages were approximated if possible or a brief text description was included to provide some context for comparison with the action alternatives.

Table 2-1: Comparative Summary of Alternatives (Tables 2-1a, 2-1b, and 2-1c)

Table 2-1a: Comparative Summary of Alternatives – Resources

Resource	Alternative A	Alternative B	Alternative C	Alternative D
Water Resources and Fisheries	*Water Resources and Fisheries for Alternative A*	*Water Resources and Fisheries for Alternative B*	*Water Resources and Fisheries for Alternative C*	*Water Resources and Fisheries for Alternative D*
High Value Watersheds (River Miles [RM])	0 RM	21,382 RM	14,888 RM	12,982 RM
Wildlife	*Wildlife for Alternative A*	*Wildlife for Alternative B*	*Wildlife for Alternative C*	*Wildlife for Alternative D*
Connectivity Corridors	0 acres	845,670 acres	576,038 acres	0 acres
Visual Resources Management (VRM)	*Visual Resources Management for Alternative A*	*Visual Resources Management for Alternative B*	*Visual Resources Management for Alternative C*	*Visual Resources Management for Alternative D*
VRM Class I	46,953 acres	1,335,771 acres	46,953 acres	46,953 acres
VRM Class II	0 acres	6,490,087 acres	2,766,229 acres	679,553 acres
VRM Class III	0 acres	3,516,066 acres	6,095,778 acres	6,140,235 acres
VRM Class IV	0 acres	2,123,971 acres	4,556,934 acres	6,599,152 acres
Undesignated	13,418,941 acres	0 acres	0 acres	0 acres
TOTAL	13,465,894 acres	13,465,894 acres	13,465,894 acres	13,465,894 acres
Lands with Wilderness Characteristics	*Lands with Wilderness Characteristics for Alternative A*	*Lands with Wilderness Characteristics for Alternative B*	*Lands with Wilderness Characteristics for Alternative C*	*Lands with Wilderness Characteristics for Alternative D*
Managed to protect wilderness characteristics as a priority over other resources values and multiple uses	0 acres	277,489 acres	0 acres	0 acres
Managed to emphasize other resource values and multiple uses while applying management restrictions to reduce impacts on wilderness characteristics	0 acres	12,040,490 acres	8,105,979 acres	0 acres
Managed to emphasize other resource values and multiple uses as a priority over protecting wilderness characteristics	0 acres	1,148,024 acres	5,360,024 acres	13,466,003 acres
TOTAL	0 acres	13,466,003 acres	13,466,003 acres	13,466,003 acres

Table 2-1b: Comparative Summary of Alternatives – Resource Uses

Resource Uses	Alternative A	Alternative B	Alternative C	Alternative D
Forestry and Woodland Products	*Forestry and Woodland Products for Alternative A*	*Forestry and Woodland Products for Alternative B*	*Forestry and Woodland Products for Alternative C*	*Forestry and Woodland Products for Alternative D*
Commercial Woodland Harvest Permitted	1,644,588 acres	5,017,161 acres	9,811,727 acres	13,423,449 acres
Closed to Commercial Woodland Harvest	1,583,751 acres	8,418,904 acres	46,953 acres	0 acres
Permits for Commercial Woodland Harvest Granted on Case-by-Case Basis	10,237,555 acres	29,829 acres	3,607,214 acres	42,445 acres
Reindeer Grazing	*Reindeer Grazing for Alternative A*	*Reindeer Grazing for Alternative B*	*Reindeer Grazing for Alternative C*	*Reindeer Grazing for Alternative D*
Potentially Open to Grazing on a Case-by-Case Basis	13,304,555 acres	0 acres	7,742,975 acres	13,465,894 acres
Closed to Grazing	161,340 acres	13,465,894 acres	617,422 acres	0 acres
Closed Until Standards are Developed	0 acres	0 acres	5,105,497 acres	0 acres
Minerals (Locatable and Salable)	*Minerals (Locatable and Salable) for Alternative A*	*Minerals (Locatable and Salable) for Alternative B*	*Minerals (Locatable and Salable) for Alternative C*	*Minerals (Locatable and Salable) for Alternative D*
Withdrawn from Locatable	4,804,488 acres	9,842,497 acres	46,953 acres	46,953 acres
Open to Locatable Mineral Entry	8,661,406 acres	3,623,397 acres	13,418,941 acres	13,418,941 acres
Closed to Salable	4,804,488 acres	9,842,497 acres	283,509 acres	283,509 acres
Open to Salable on Case-by-Case Basis	0 acres	0 acres	6,536,635 acres	0 acres
Open to Salable	8,661,406 acres	3,623,397 acres	6,645,750 acres	13,182,385 acres
Minerals (Leasable)	*Minerals (Leasable) for Alternative A*	*Minerals (Leasable) for Alternative B*	*Minerals (Leasable) for Alternative C*	*Minerals (Leasable) for Alternative D*
NSO Leasable	17,521 acres Acreage includes 300 feet on either side of Rodo River, Kateel River, South Fork Huslia River, Tagagawik River, Ray River, 3 tributaries of Squaw Creek and Nulato River. Additionally, fisheries habitat is also NSO leasable.	1,597,599 acres	6,824,035 acres	236,556 acres
Open to Leasing Subject to Special Stipulations	INHT in the Village block, grizzly/brown bear denning areas, and raptor nesting areas.	0 acres	0 acres	0 acres
Open to Leasing Subject to Standard Stipulations	8,246,152 acres (approximate). Remaining portion of the planning area not identified as NSO Leasable, Open Subject to Special Stipulations, or Closed to Leasing.	2,517,414 acres	6,594,906 acres	13,182,385 acres

Resource Uses	Alternative A	Alternative B	Alternative C	Alternative D
Closed to Leasing	5,202,221 acres Acreage includes the Drainages of the Unalakleet ACEC, Peregrine falcon nesting areas, Anvik River ACEC, Kuskokwim River Raptor Nesting Habitat ACEC. Additionally, caribou winter grazing areas are also closed to mineral leasing.	9,350,881 acres	46,953 acres	46,953 acres
Lands and Realty	*Lands and Realty for Alternative A*	*Lands and Realty for Alternative B*	*Lands and Realty for Alternative C*	*Lands and Realty for Alternative D*
Proposed FLPMA Withdrawals[1]	0 acres	9,795,543acres	4,991acres	0 acres
Retained ANCSA 17(d)(1) Withdrawals[1]	13,461,531 acres	8,530,066 acres	0 acres	0 acres
Revoked ANCSA 17(d)(1) Withdrawals[1]	0 acres	4,931,465 acres	13,461,531 acres	13,461,531 acres
Right-of-way (ROW) Exclusion Areas	0 acres	1,464,069 acres	0 acres	0 acres
ROW Avoidance Areas	0 acres	8,824,848 acres	7,069,494 acres	5,130,927 acres
ROW Avoidance Areas for Linear Realty Actions	0 acres	0 acres	576,038 acres	0 acres
ROW Permitted on a Case-by-Case Basis	13,465,894 acres	0 acres	0 acres	100,644 acres
Open to ROW Location	0 acres	3,176,977 acres	5,820,362acres	8,234,323 acres
Available for Exchange Only	0 acres	342,360 acres	356,942 acres	0 acres
Available for Disposal or Exchange	0 acres	0 acres	0 acres	451,173 acres
Recreation and Visitor Services	*Recreation and Visitor Services for Alternative A*	*Recreation and Visitor Services for Alternative B*	*Recreation and Visitor Services for Alternative C*	*Recreation and Visitor Services for Alternative D*
INHT SRMA	N/A	355,799 acres	340,574 acres	340,574 acres
BSWI ERMA	N/A	13,110,096 acres	13,125,320 acres	13,125,320 acres
Community Focus Zones	N/A	818,395 acres	95,307 acres	0 acres
Travel and Transportation Management	*Travel and Transportation Management for Alternative A*	*Travel and Transportation Management for Alternative B*	*Travel and Transportation Management for Alternative C*	*Travel and Transportation Management for Alternative D*
INHT Travel Management Area (TMA)	N/A	288,466 acres	273,242 acres	273,242 acres
Lands with Wilderness Characteristics TMA	N/A	277,489 acres	0 acres	0 acres
Summer Casual OHV Access Prohibited	46,953 acres	565,955 acres	225,925 acres	225,925 acres
Summer Subsistence OHV Access Prohibited	46,953 acres	241,512 acres	225,925 acres	0 acres
Summer Casual OHV Access Limited to Existing Trails	None designated	12,899,939 acres	13,239,969 acres	46,953 acres
Summer Subsistence OHV Access Limited to Existing Trails	None designated	324,443 acres	363 acres	225,925 acres
Winter Casual Use – snowmobiles only	None designated	13,465,894 acres	3,097,798 acres	225,925 acres
Winter Subsistence Use – snowmobiles only	None designated	4,243,914 acres	3,097,798 acres	225,925 acres

Note:
1) There is overlap of proposed, retained, and revoked withdrawal areas.

Table 2-1c: Comparative Summary of Alternatives – Special Designations

Special Designations	Alternative A	Alternative B	Alternative C	Alternative D
Areas of Critical Environmental Concern	*Areas of Critical Environmental Concern for Alternative A*	*Areas of Critical Environmental Concern for Alternative B*	*Areas of Critical Environmental Concern for Alternative C*	*Areas of Critical Environmental Concern for Alternative D*
Total Acres of ACECs	**Total** 1,884,376 acres	**Total** 3,912,698 acres	**Total** N/A	**Total** N/A
National Trails	*National Trails for Alternative A*	*National Trails for Alternative B*	*National Trails for Alternative C*	*National Trails for Alternative D*
INHT National Trail Management Corridor (NTMC)	NTMC not designated	288,466 acres	273,242 acres	273,242 acres
Wild and Scenic Rivers	Wild and Scenic Rivers for Alternative A	Wild and Scenic Rivers for Alternative B	Wild and Scenic Rivers for Alternative C	Wild and Scenic Rivers for Alternative D
Designated (Unalakleet Wild River Corridor)	46,953 acres	46,953 acres	46,953 acres	46,953 acres
Eligible	332,176 acres	0 acres	N/A	N/A
Recommended Suitable	0 acres	332,176 acres	N/A	N/A

2.5 Alternatives Eliminated from Detailed Analysis

The BLM considered the following when evaluating alternatives but eliminated them from further consideration for the reasons provided below.

2.5.1 Lands with Wilderness Characteristics

Alternative B considers management of 277,489 acres of lands with wilderness characteristics to protect wilderness characteristics as a priority. A detailed analysis of lands managed to protect wilderness characteristics was not performed because of provisions of ANILCA Section 1326(b) which prohibit "studies of Federal lands in the State of Alaska for the single purpose of considering the establishment of a conservation system unit (CSU), national recreation area, national conservation areas or for related or similar purposes." A range of alternatives emphasizing other resource values and multiple uses while applying management to reduce impacts to wilderness characteristics is analyzed in detail.

2.5.2 Areas of Critical Environmental Concern

Twelve externally nominated ACECs were considered but not retained for detailed analysis as alternatives because they did not meet both the relevance and importance criteria required for consideration as an ACEC under 43 CFR 1610.7-2(a). The *BSWI Areas of Critical Environmental Concern: Report on the Application of the Relevance and Importance Criteria and Special Management Report* provides details on the nominated ACECs eliminated from detailed analysis (BLM 2018b).

2.6 Considerations in Selecting a Preferred Alternative

Consistent with the BLM planning regulations (43 CFR 1610.4-7) and as part of the BLM's commitment to an open and transparent planning process, the BLM is identifying Alternative C as its preferred alternative at the Draft RMP/EIS stage. In identifying the BLM preferred alternative, the BLM evaluated how well each of the alternatives in the Draft RMP/EIS would respond to the purpose and need for action as well as the effects of each of the alternatives relevant to the issues identified for detailed analysis. The BLM concluded that Alternative C would allow for continued multiple use of public lands, while sustaining the diverse and intact ecosystems that support traditional subsistence lifestyles and rural economies.

The identification of the preferred alternative does not constitute a commitment or decision. Nor does it mean that the BLM will necessarily present the preferred alternative as the Proposed RMP in the Proposed RMP/Final EIS. Instead, the BLM is simply identifying that Alternative C provides the most useful starting point from which to construct a Proposed RMP based on the analysis in this Draft RMP/EIS.

During public review of this Draft RMP/EIS, the BLM is seeking constructive input regarding the proposals for managing resources and resource uses. After considering these comments, the BLM will develop a Proposed RMP to be evaluated in the Final EIS, which could differ from the preferred alternative identified in this Draft RMP/EIS.

2.7 Resource Management by Alternative

This section describes the proposed management actions being evaluated under each of the alternatives. Goals and objectives are not included in this section because they are not being evaluated for potential impacts. Refer to Appendix G for the goals and objectives by resource, resource use, and special designation. Climate Change and Adaptive Management Standards and Mitigation Standards are included in Appendix H and Appendix I, respectively.

2.7.1 Air Quality and Air Quality-Related Values

Actions Common to All Action Alternatives for Air Quality and Air Quality-Related Values

All BLM-permitted actions with the potential for criteria-pollutant emissions, greenhouse gases (GHGs), air quality-related values (AQRVs), national emissions standards for hazardous air pollutants, or volatile organic compounds would use best management practices (BMPs) to meet the National Ambient Air Quality Standards (NAAQS) and reduce emissions to the extent possible. The need for detailed air quality analysis, such as dispersion modeling and mitigation to reduce emissions to a level that meets NAAQS and reduce GHG emissions to the extent possible, would be made on a case-by-case basis at the implementation level.

1. Where BLM-permitted activities have the potential to affect air quality in or near Class I and Class II areas, sensitive receptors, urban interface areas, National Landscape CSUs, and in or near areas that contains sensitive resources in the planning area, analysis and mitigation will be considered on a case-by-case basis.
2. Best management dust abatement procedures would be required to reduce particulate emissions related to permitted roads and road development. Dust abatement methods would be decided on a case-by-case basis and would include methods such as clearing minimal vegetation, mulching, construction of wind barriers, applying water to cleared areas, reducing vehicular speed limits and chemical dust suppressants to untrafficked areas.
3. Transportation ROWs near communities would be hardened or otherwise stabilized and would require design features or mitigation measures to minimize fugitive dust emissions from travel on unpaved surfaces.
4. Proposals that introduce new pollutant effects within the two CSUs, the INHT NTMC (see Section 2.7.20), and the Unalakleet Wild River Corridor (see Section 2.7.21), would be authorized only if they do not cause more than short-term, minimal adverse impacts on air quality.

5. All prescribed burning would be conducted in accordance with guidance and direction in the Alaska Enhanced Smoke Management Plan (ADEC 2015a), and any future updates.
6. The BLM would assist the Alaska Department of Environmental Conservation (ADEC) in the siting and operation of emergency air quality monitoring stations when necessary to assess smoke impacts from wildland fire (BLM Manual 7300, *Air Resources Management Program* [BLM 2009]). Measures would be taken to keep the public informed about health hazards related to smoke.
7. Permitted activities would adhere to the Noise Control Act of 1972 and the Quiet Communities Act of 1978.
8. BMPs would be applied to BLM-authorized activities to reduce emissions of GHGs and BLM would prioritize enhanced energy efficiency, use of lower GHG-emitting technologies or renewable energy, planning for carbon capture and sequestration, and the capture or beneficial use of fugitive methane emissions.
9. Monitoring of GHG emissions would occur, as deemed necessary by the AO, at the implementation/permitting level. Based on the results of this monitoring, subsequent adaptive management could be implemented to minimize these emissions to the extent possible. Additionally, monitoring of NAAQS criteria pollutants will be conducted as deemed necessary and pollutant control measures would be adjusted as necessary to continue to meet NAAQS for criteria pollutants, including particulates. An estimate of current and future downstream GHG emissions that are attributed to the project actions will be included in the air analysis.

Description of Air Quality and Air Quality-Related Values Actions by Alternative

There are no proposed air and AQRVs management actions specific to the action alternatives. For Alternative A, the BLM would continue to cooperate with other agencies in monitoring air quality to verify compliance with lease or permit requirements per the existing CYRMP.

2.7.2 Soils

Actions Common to All Action Alternatives for Soils

1. The BLM would monitor targeted sites observed to be at risk of degrading highly erodible soils using Assessment, Inventory, and Monitoring (AIM) terrestrial protocols for changes in condition associated with climate change. If that monitoring determines that soil properties are becoming impaired, timing and weight restrictions related to motorized travel, surface-disturbing development and the use of heavy equipment would be modified as necessary to meet the original intent of any soils-related management.

   The BLM would monitor the effects of permafrost thawing and would adjust requirements for surface-disturbing activities as necessary to prevent long-term erosion of associated soils and associated loss of soil function. This may include not authorizing activities in areas where the changing condition of the permafrost would not allow for the effective mitigation of erosion and soil function degradation (see Map 2-1).

2. General Performance Standards for All BLM Permitted Surface-Disturbing Activities

   - The surface-disturbing activity would be required to avoid unnecessary impacts and facilitate reclamation by following a reasonable and customary sequence of operations.
   - Surface-disturbing activities would be required to implement mitigation measures specified by the BLM to protect public lands.
   - Surface-disturbing activities would be required to initiate reclamation at the earliest practicable time on those portions of the disturbed area that the activity would not disturb further. Initial reclamation would stabilize soil, manage runoff, and otherwise prevent unnecessary and undue degradation.
   - Prior to surface-disturbing activities, remove, segregate, and preserve topsoil or other suitable growth medium for reclamation. The topsoil or growth medium will be applied after reshaping of the disturbed area has been completed and will be used to promote and sustain revegetation and, subsequently, to minimize erosion. Stockpiling activities must be implemented to preserve soil viability and promote concurrent reclamation. Where economically, technically, and logistically feasible, mining operations must directly transport topsoil from its original location to the point of reclamation without intermediate stockpiling.
   - After surface-disturbing activities have been completed, permittees must revegetate disturbed lands by establishing a stable and long-lasting vegetative cover that is self-sustaining and, considering successional stages, will eventually result in cover that is comparable in both diversity and density to pre-existing natural vegetation of the surrounding area. Reclamation and revegetation efforts must demonstrate they are trending toward comparable pre-existing natural conditions that will provide for the rehabilitation of wildlife habitat. The BLM may develop site-specific revegetation criteria based on site-specific analysis as part of the baseline condition measurements.

3. Specific Performance Standards for Mining, as per 43 CFR 3809.420

   - Mining Waste: The operator would be required to manage all tailings, rock dumps, deleterious material or substances, and other waste produced from operations to prevent impacts that would violate applicable federal or State laws.
   - Performance of Reclamation: Operators would be required to reclaim disturbed areas in accordance with the performance standards and their approved reclamation plans. This includes provisions for: isolation, control, or removal of acid-forming, toxic, or deleterious substances; regrading and reshaping with adjacent landforms, facilitating revegetation, controlling drainage, minimizing accelerated erosion and minimizing delivery of sediment to aquatic resource areas; rehabilitation of fisheries and wildlife habitat; placement of growth medium and establishment of self-sustaining revegetation; removal of buildings, structures, or other support facilities; plugging of drill holes and closure of underground workings; and providing for post-mining monitoring, maintenance, or treatments.

4. Rehabilitation and Reclamation

   - The BLM would prioritize rehabilitation of soils impacted by human use to prevent unacceptable loss of permafrost, where it is not thought to be able to recover from disturbance naturally.

- When applicable, the BLM would implement post-wildfire emergency stabilization and rehabilitation (ES&R) where soil degradation is unacceptable or to minimize threats to life or property and where soils are not thought to recover naturally.

5. Cumulative Management Decisions
   - A cumulative impacts analysis, using Rapid Ecoregional Assessment (REA) or other comparable data of all disturbances in the HUC 12 (6th level) watershed would be required during permitting for all proposed surface-disturbing activities.
   - Coordinate the sharing of inventory and monitoring information with USFWS to help discern causes of resource condition change (i.e., due to climate change or due to authorized activities).

Description of Soils Actions by Alternative

Table 2-2 describes proposed Soils actions by alternative. See Map 2-1, for additional information regarding permafrost distribution.

Table 2-2: Soils Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
ROW Decisions No current management direction exists. Management direction is determined on a case-by-case basis.	**ROW Decisions** See Section 2.7.16, Table 2-15, for ROW decisions for permafrost areas.	**ROW Decisions** See Section 2.7.16, Table 2-15, for ROW decisions for permafrost areas.	**ROW Decisions** See Section 2.7.16, Table 2-15, for ROW decisions for permafrost areas.
Soil Survey *SWMFP (BLM 1981)* The SWMFP lists soil surveys as a support need for recommendations: 3-3.1 (Calista mineral rights), M-1.1 (oil and gas leasing), M-1.2 (coal leasing), M-1.3, (geothermal leasing), F-1.1 (forestry management), RM-1.1 (livestock grazing), and WL-7.1 (riparian habitat protection). No specific threshold of activity triggers a requirement for a soil survey.	**Soil Survey** For all surface-disturbing BLM-permitted activities greater than 5 acres, a soils survey would be required. The extent and detail of survey would be determined on a case-by-case basis at the implementation level. The purpose of the soil survey would help to determine existing soil types on-site and therefore guide the selection of more appropriate reclamation measures and project site selection.	**Soil Survey** For all surface-disturbing BLM-permitted activities greater than 5 acres, a randomly selected basic soil nutrient assessment would be conducted. The need for additional, more comprehensive soil surveys would be determined at the site-specific level for BLM-permitted activities. The project proponent would provide global positioning system (GPS) coordinates, photographs, and soil samples from each soil profile to the BLM.	**Soil Survey** The need for soil surveys would be determined at the site-specific level for BLM-permitted activities. This determination would be based on the existing known soils information.
Floodplains and Springs *SWMFP (BLM 1981)* W-3.1: The BLM is mandated to protect floodplains by executive orders and must consider protection of floodplains wherever affected by BLM action. No specific restrictions are listed.	**Floodplains and Springs** Any BLM-permitted surface-disturbing activities within the 100-year floodplain would require detailed reclamation plans and use of overburden materials. No surface-disturbing activities would be allowed within 100 feet of a natural spring.	**Floodplains and Springs** Determination of BLM-permitted surface-disturbing activities in the vicinity of floodplains and natural springs would be authorized on a case-by-case basis.	**Floodplains and Springs** Same as Alternative C.

2.7.3 Water Resources and Fisheries

Actions Common to All Action Alternatives for Water Resources and Fisheries Habitat

1. Water Resources Actions Common to All Action Alternatives

   - Follow Total Maximum Daily Load recommendations on streams listed under Section 303(d) of the Clean Water Act.
   - To minimize watershed resource impacts, all mining activities will incorporate environmental BMPs, and techniques that ensure the prevention of Unnecessary or Undue Degradation and the attainment of the 43 CFR 3809.420 performance standards.
   - Technology and practices should be used such that, at the completion of reclamation, the affected stream segment should be, at minimum, geomorphically stable with adequate riparian floodplain vegetation to dissipate flood energy per the BLM Handbook H-3809-1, Surface Management (BLM 2012a). The stability would be evidenced by metrics such as lateral stability, bedform diversity, and floodplain connectivity within the functioning range and/or the range of reference conditions using AIM-National Aquatic Monitoring Framework (NAMF) datasets. At the completion of reclamation, riparian vegetation complexity measures should be minimally functioning with an upward trend. Reclamation of the channel and floodplain would be accomplished via natural channel design and incorporation of supporting elements or features, such as proper floodplain grading, vegetation mats or transplants, integrated rock and organic debris, seeding, etc. At the completion of reclamation, the channel and floodplain features should be able to withstand moderate flood discharge events (5- to 10-year flood event).
   - Implement specific recommendations regarding surface and subsurface pipeline crossings found in the U.S. Department of the Interior's *Hydraulic Considerations for Pipelines Crossing Stream Channels* guidance document (DOI 2007) to prevent breakage and subsequent contamination.
   - Subject to valid existing rights, for all surface-disturbing activity, the BLM would require compliance with general performance standards for all BLM permitted surface-disturbing activity requirements as described under Actions Common to all Action Alternatives for Soils (see Section 2.7.2).
   - Operators submitting new or modified plans will be required to submit a detailed Reclamation Cost Estimate (RCE) before their Notice is acknowledged or Plan approved if they are operating within the 100-year floodplain. In general, all operations which could disturb more than 1,500 feet of stream would require an RCE. If the RCE calculations show that the reclamation cost could exceed one-third of the available bond pool assets the operator may be required to provide an individual financial guarantee in accordance with the requirements of 43 CFR 3809 and within the provision of the Bond Pool Agreement between the Alaska Department of Natural Resources (ADNR) and BLM. All reclamation plans must be designed such that the affected stream segment will be geomorphically stable, riparian vegetation complexity measures should be minimally functioning with an upward trend, and floodplain conditions should be able to withstand moderate flood discharge events (5- to 10-year flood event).
   - BLM would coordinate with USFWS in the pursuance of instream flow reservation of water with the State of Alaska to maintain minimum instream flow for applicable rivers in high-value watersheds (HVWs) that flow to or may affect USFWS lands.
   - Instream flow reservation of water assessments of HVWs would be prioritized.

- Permanent structures and disturbance greater than 5 acres would be avoided within the 100-year floodplain areas of streams in accordance with Executive Order 11990 and 11988 (excluding operations conducted under the Mining Law of 1872, as amended). Given the difficulty of remotely mapping the 100-year floodplain and the desire to convey the intent of the various management alternatives to the reader, riparian buffer distances are used in this RMP as proxies for the 100-year floodplain. See Appendix B for the full definition.
- Locatable Mining
    - In accordance with BLM Surface Management Handbook (BLM 2012a) and CFR 3809.420 performance standards, all new and modified reclamation plans should address riparian and fish habitat rehabilitation for activities that include stream disturbance and should incorporate measures to rehabilitate wildlife habitat and reestablish vegetation in uplands and floodplain areas. Reclamation and Monitoring plans should include measurable criteria to effectively demonstrate reclamation stability and upward trending rehabilitation.
    - Operator is required to obtain a permit from the State of Alaska for any anadromous stream crossing
    - When reviewing a Plan or Notice, the BLM must ensure that the Plan or Notice provides for ongoing, concurrent reclamation. For example, the Plan or Notice may include provisions for direct hauling and application of stripped topsoil to previous disturbances, placement of waste rock at final grade with revegetation, backfilling of sequential mine pits, decommissioning and reclaiming heaps and dumps that have reached capacity, and other measure as applicable.

2. Fisheries and Aquatic Resources Actions Common to All Action Alternatives

- All actions would be compliant with Executive Orders 11998 and 11988.
- Any proposal to use or develop the lands, waters, or resources within the 100-year floodplain in a HVW must demonstrate to the satisfaction of the AO that such use or development:
    - Would not adversely alter the condition and ecological function of aquatic and riparian systems by affecting water quality, stream flow (quantity, timing, duration and velocity), groundwater hydrology, channel connectivity, channel form, material recruitment, substrate composition, energy (food) flow, and riparian function
    - Would not diminish the quality and diversity of habitats needed to sustain the production of fish and wildlife populations at their natural potential
- Priority Species
    - Table 2-3 lists the current priority aquatic species that occur within the planning area. This species list may change based on habitat shifts due to climate change or changes in the regulatory environment. The BLM would update the table accordingly.
    - Where priority species are present, manage habitat to support self-sustaining populations. Priority aquatic species include those species that meet one or more of the following criteria:
        - Utilized for subsistence

- Designated as BLM sensitive
- Federally listed under the Endangered Species Act (ESA)
- Recreationally important species

o The BLM would cooperate and coordinate with State agencies, federal agencies, Native organizations, and other groups to ensure efficient and effective program implementation toward conservation of native species.

Table 2-3: Priority Fish Species in the Planning Area

Common Name	Scientific Name	Priority Status
Alaska brook lamprey	*Lampetra laskense*	BLM sensitive
Arctic grayling	*Thymallus arcticus*	Subsistence, recreation
Broad whitefish	*Coregonus nasus*	Subsistence
Burbot	*Lota lota*	Subsistence, recreation
Chinook salmon (king)	*Oncorhynchus tshawytscha*	Subsistence, recreation
Chum salmon	*Oncorhynchus keta*	Subsistence, recreation
Coho salmon	*Oncorhynchus kisutch*	Subsistence, recreation
Humpback whitefish	*Coregonus pidschian*	Subsistence
Least cisco	*Coregonus sardinella*	Subsistence
Northern pike	*Esox lucius*	Subsistence, recreation
Round whitefish	*Prosopium cylindraceum*	Subsistence
Sheefish	*Stenodus leucichthys*	Subsistence, recreation
Whitefish (unidentified)	*Coregoninae*	Subsistence

3. Watershed Restoration Prioritization

- Watersheds prioritized for restoration would be those watersheds with Medium-High or High aquatic resource value and Low watershed condition.

4. Mineral Decisions in HVWs

- Cooperate with the State of Alaska to help determine appropriate management of suction dredge mining in applicable navigable waterways in HVWs. In accordance with 43 CFR 3809.201(a), the BLM may establish an agreement with the State to allow suction dredging on BLM-managed lands, which will provide maximum possible coordination with the State to avoid duplication and to ensure that operators prevent unnecessary or undue degradation of public lands. As directed by 43 CFR 3809.201(b), the agreement must require that the State notify the BLM within 15 days of application receipt to suction dredge so that the BLM may determine if federally proposed or listed threatened or endangered species or their proposed or designated critical habitat would be affected by the proposed action and to specify any necessary mitigation measures. The use of a suction dredge within the scope and allowances of

the agreement, State statute, BLM regulations, and all applicable laws need not to submit to the BLM a notice or plan of operations. Any existing or future agreements that apply regionally or statewide, that meet the requirements outlined above will be considered adequate to meet the conditions of the BSWI RMP.

- All reclamation must result in the rehabilitation of fisheries and wildlife habitats. The rehabilitation of fisheries habitat is defined as a geomorphically stable channel (such as functioning conditions for lateral stability, bedform diversity, and floodplain connectivity) and sufficient floodplain roughness and riparian vegetation to dissipate stream energy and minimize erosion.
- Baseline hydrological data that characterize seasonal flow quantity, timing, and discharge and riparian vegetation condition would be required from the operator to establish the baseline for rehabilitation purposes. The BLM would be available to advise operators on the exact type of baseline data and details needed to meet this requirement.

5. A cumulative impacts analysis, using REA or other comparable data, of all disturbances in the HUC 12 (6th level) watershed would be required during permitting for all proposed surface-disturbing activities except for notice-level mining activity. Coordinate the sharing of inventory and monitoring information with USFWS to help discern causes of resource condition change (i.e., due to climate change or due to authorized activities). Collaborate with USFWS to sustain and strengthen landscape-level ecosystem resiliency to human-caused change by managing for connectivity of neighboring NWRs.

Description of Water Resources and Fisheries Actions by Alternative

Table 2-4 describes proposed Water Resources and Fisheries actions by alternative. See Maps 2-2 through 2-4, for additional information.

Table 2-4: Water Resources and Fisheries Actions by Alternative (Table 2-4a and Table 2-4b)

Table 2-4a: Water Resources and Fisheries Actions by Alternative - Watershed Actions

Alternative A	Alternative B	Alternative C	Alternative D
HVW (HVW) Criteria Identification criteria are not specified in current plans. Identification criteria are determined on a case-by-case basis.	**HVW Criteria** Criteria for identifying HVWs include the following: • Aquatic resource value • Protecting area of sufficient size to ensure hydrologic connectivity and resiliency of the landscape • Watersheds with High, Medium-High, and Medium resource value	**HVW Criteria** Criteria for identifying HVWs include the following: • Aquatic resource value • Watersheds with High and Medium-High resource value	**HVW Criteria** Criteria for identifying HVWs include the following: • Aquatic resource value • Watersheds with High resource value

Alternative A	Alternative B	Alternative C	Alternative D
Proposed HVW s No current management direction identified. Management direction is determined on a case-by-case basis.	**Proposed HVWs Include**: High resource value – 12,982 RMs; 4,891,935 acres Medium-High resource value – 1,906 RM; 668,706 acres Medium resource value – 6,494 RM; 2,733,412 acres Total: 21,382 RM; 8,294,053 acres All management actions specific to HVWs described in this section would apply streams and corridors identified in the 100-year floodplain. See Appendix B for a detailed definition of HVWs and Map 2-2 for HVWs in Alternative B.	**Proposed HVWs Include:** High resource value – 12,982 RMs; 4,891,935 acres Medium-High resource value – 1,906 RMs; 668,706 acres Total: 14,888 RM; 5,560,642 acres All management actions specific to HVWs described in this section would apply to streams and corridors identified in the 100-year floodplain. See Appendix B for a detailed definition of HVWs and Map 2-3 for HVWs in Alternative C.	**Proposed HVWs Include:** High resource value – 12,982 RMs; 4,891,935 acres Total: 12,982 RMs; 4,891,935 acres All management actions specific to HVWs described in this section would apply to streams and corridors identified in the 100-year floodplain. See Appendix B for a detailed definition of HVWs and Map 2-4 for HVWs in Alternative D.
Locatable Mining *CYRMP (BLM 1986a)* 300-foot occupancy setbacks on the following river segments will provide additional buffering against any possibility of pollution to downstream subsistence fishery areas in the Tag, Lower Kateel, and Gisasa Rivers and tributaries to the Nulato and Ray Rivers and Squaw Creek.	**Locatable Mining** For mine site reclamation, the recovery of riparian vegetation and an upward trend would be realized within 5 years. Operator is required to submit a plan for preventing nonnative invasive species (NNIS) infestations as a result of their mining operation. All permitted mining operations would be required to implement 100% water recycle systems (zero discharge) and may be required to use a settling pond liner based on site specific conditions, where possible.	**Locatable Mining** For mine site reclamation, the recovery of riparian vegetation and an upward trend would be realized within 5 years. If NNIS are found then a comprehensive NNIS plan will be developed to address monitoring, prevention, and abatement. Operations would be required to obtain Individual Mixing Zone permits under the Alaska Pollutant Discharge Elimination System (APDES) if they anticipate discharges or if the site characteristics limit recycle capacity/potential.	**Locatable Mining** For Plans of Operations, development of the stream reclamation objectives would rely substantially upon the characterization of stream potential as determined from the baseline environmental information provided by the operator.

Table 2-4b: Water Resources and Fisheries Actions by Alternative - Fisheries Actions

Alternative A	Alternative B	Alternative C	Alternative D
Surface-Disturbing Activities *CYRMP (BLM 1986a)* Objective: Protect selected crucial salmon spawning beds from adverse environmental impacts by mineral location and development.	**Surface-Disturbing Activities** For entire planning area (with the exception of locatable mineral development and permitted activities by other agencies [Alaska Department of Fish and Game {ADF&G}]): For fish-bearing streams, the disturbance buffer would be the 100-year floodplain area. Subject to valid existing rights, no surface-disturbing activities or permanent structures would be allowed within these buffer areas. All management actions specific to HVWs described in this section would apply streams and corridors identified in the 100-year floodplain (21,382 RM).	**Surface-Disturbing Activities** Within HVWs (with the exception of locatable mineral development and permitted activities by other agencies [ADF&G] and subsistence users for permitted camps within HVWs): For fish-bearing streams, the disturbance buffer would be the 100-year floodplain area. Subject to valid existing rights, no surface-disturbing activities or permanent structures would be allowed within these buffer areas. All management actions specific to HVWs described in this section would apply streams and corridors identified in the 100-year floodplain (14,888 RM).	**Surface-Disturbing Activities** Surface-disturbing activities or permanent structures would be allowed within the 100-year floodplain of perennial and fish-bearing streams if permittees demonstrate that these activities would not substantively impact floodplain function. This would be determined on a case-by-case basis. All management actions specific to HVWs described in this section would apply streams and corridors identified in the 100-year floodplain (12,982 RM).

Alternative A	Alternative B	Alternative C	Alternative D
Forestry and Woodlands Decisions within HVWs No current management direction identified. Management direction is determined on a case-by-case basis.	**Forestry and Woodlands Decisions within HVWs** See Section 2.7.12, Table 2-11, for woodland harvest decisions in HVWs.	**Forestry and Woodlands Decisions within HVWs** See Section 2.7.12, Table 2-11, for woodland harvest decisions in HVWs.	**Forestry and Woodlands Decisions within HVWs** See Section 2.7.12, Table 2-11, for woodland harvest decisions in HVWs.
Mineral Decisions within HVWs *SWMFP (BLM 1981)* SWMFP directs the BLM to mitigate fisheries conflicts in fisheries-based ACECs by use of seasonal restrictions, area withdrawals, and other measures.	**Mineral Decisions within HVW** • Closed to salable mineral development • Closed to mineral leasing • Withdrawn from locatable mineral entry (Public Land Order [PLO] 5180, currently open to metalliferous) If the recommended locatable withdrawal is not approved for HVWs, locatable development would comply with all other management under this alternative and the following management would apply (subject to valid existing rights): • No suction dredging on the non-navigable waterways within HVWs.	**Mineral Decisions within HVWs** • Open to salable mineral development on a case-by-case basis • NSO leasable • Open to locatable entry (unless other restrictions apply for other resource protections) Locatable development would comply with all other management under this alternative and the following management would apply (subject to valid existing rights): • No suction dredging on the non-navigable waterways within HVWs.	**Mineral Decisions within HVWs** • Open to salable mineral development • Standard Stipulations leasable • Open to locatable entry (unless other restrictions apply for other resource protections) Locatable development would comply with all other management under this alternative and the following management would apply (subject to valid existing rights): • Suction dredging would be permitted on the non-navigable waterways within HVWs on a case-by-case basis.
Travel and Transportation Management Decisions within HVWs No current management direction was identified. Management direction is determined on a case-by-case basis.	**Travel and Transportation Management Decisions within HVWs** Travel and transportation management decisions in HVWs would be the same as those described under Alternative B for "All BSWI lands not designated as Conservation System Units, or Sensitive Resource Areas" in Section 2.7.18, Table 2-17.	**Travel and Transportation Management Decisions within HVWs** Travel and transportation management decisions in HVWs would be the same as those described under Alternative C for "All BSWI lands not designated as Conservation System Units" in Section 2.7.18, Table 2-17.	**Travel and Transportation Management Decisions within HVWs** Travel and transportation management decisions in HVWs would be the same as those described under Alternative C for "All BSWI lands not designated as Conservation System Units" in Section 2.7.18, Table 2-17.
Fish Passage Design Requirement/Standard No current management direction was identified. Management direction is determined on a case-by-case basis.	**Fish Passage Design Requirement/Standard** At least 3 years of hydrologic and fish data shall be collected prior to construction of any proposed stream crossing whose structure is designed to occur, wholly or partially, below the stream's OHWM. These data shall include, but are not limited to, the range of water levels (highest and lowest) at the location of the planned crossing, and the seasonal distribution and composition of fish populations using the stream. The gathering of these data will help assess design requirements resulting from potential changes in hydrologic flow regimes resulting from climate change.	**Fish Passage Design Requirement/Standard** Determinations on required data collection to support implementation of these BMPs would be made on a case-by-case basis.	**Fish Passage Design Requirement/Standard** Same as Alternative C.

Alternative A	Alternative B	Alternative C	Alternative D
River Crossing BMPs No current management direction was identified. Management direction is determined on a case-by-case basis.	**River Crossing BMPs** Except for approved crossings and approved locatable mine plans and Notice Level Operations, alteration of the banks of a waterway and floodplains should be avoided. If they cannot be avoided, BMPs will be used to reduce impacts; cut plugs or similar means will be used to restore stream banks. Waterways include natural features with sufficient water to create riparian habitat such as rivers, streams, deep and shallow lakes, tundra ponds, and shallow-water tracks (swales) in permafrost areas. Clearing of riparian vegetation along the riparian zone shall be avoided whenever possible. Movement of equipment through riparian vegetation shall be avoided whenever possible.	**River Crossing BMPs** Same as Alternative B.	**River Crossing BMPs** The determination of when permitted activities could alter the banks of a waterway would be made on a case-by-case basis by the AO.

2.7.4 Vegetation

Actions Common to All Action Alternatives for Vegetation

1. Landscape resiliency projects would be prioritized in parcels near or contributing to the resiliency of neighboring NWRs (Innoko NWR, Yukon Delta NWR, Koyukuk NWR, and Selawik NWR).
2. Monitoring
   - The BLM would implement the AIM strategy, which uses a probabilistic sample design. A monitoring plan for the planning area would be developed at the implementation level.
   - The BLM would prioritize targeted monitoring of the following rare ecosystems if found in the planning area. If identified, the BLM would determine appropriate management of:
     - Pingos in Interior Alaska that support forests
     - Tamarack (*Larix laricina*)–dominated associations
     - Dunes that have been stabilized by forests, typically aspen/black spruce
     - Limestone geologic substrate
     - Serpentine geologic substrate
   - The BLM would prioritize developing and using state and transition models from approved Ecological Site Descriptions to evaluate potential changes in water resources and vegetative communities when completing land health assessments.

3. Reclamation and Mitigation

   - All reclamation opportunities (including abandoned mine land) would be identified by ecoregion (see Map 2-8). Reclamation would be prioritized in the following order:
     - Areas in riparian zones
     - Areas with lichen-rich habitat
     - Areas near BLM-sensitive plant species or rare ecosystems
     - HVWs
     - Areas with potential for permafrost degradation
   - Rerouting, restoring, hardening, or closing unauthorized off-highway vehicle (OHV) trails with substantial surface disturbance would be prioritized, especially in wetlands or underlain with permafrost, to make progress toward restoring ecosystem health.

4. Surface-Disturbing Permits

   - All surface-disturbing BLM-permitted activities must adhere to reclamation general performance standards for all BLM permitted surface-disturbing activity requirements described under Actions Common to All Action Alternatives for Soils (see Section 2.7.2).
   - Where beneficial and feasible, BLM would request prioritized removal of certain vegetation communities determined on a case-by-case basis to ensure a desired mix of successional states and to assist with maximizing revegetation success.
   - Tundra areas are ROW avoidance. If tundra mat and vegetation is disturbed through permitted activities, and if technically and economically feasible, tundra mat would need to be preserved for reclamation/restoration. The minimum revegetation reclamation requirement is 70 percent vegetative cover; however, the AO may adjust this percentage for areas with disturbed baseline, extreme environmental conditions, or for sections of a floodplain. The adjusted percentage should be no lower than 35 percent for Interior Alaska and 15 percent for Arctic and western coastal areas. In any case, the minimum allowed cover must be adequate for erosion control and suitable wildlife habitat. Where practicable, the AO would require BLM-permitted operators to salvage and store the vegetative mat and topsoils for restoration/reclamation. These would include small-scale projects where the vegetation mat could be kept alive and restored in a timely fashion (before the vegetation mat dies). If the AO decides that vegetative mat and topsoil cannot be salvaged, other measures to protect vegetation and soils would be considered, including (but not limited to) emergency stabilization or importation of native weed-free topsoil and vegetative mat or material from an exterior source.
   - Existing roads and trails would be utilized for access where feasible, rather than creating new roads and trails.
   - When possible, ground operations, including heavy equipment overland moves, would occur when frost and snow cover are at sufficient depths to prevent long-term damage to tundra or wetland vegetation and soils. Ground operations would be avoided during spring break-up.
   - Winter trails or ice roads would be located and designed to minimize compaction of soils and the breakage, abrasion, compaction, or displacement of vegetation. Offsets may be required to avoid using the same route or track in subsequent years.

- When ground operations are required in snow-free months, routes that utilize naturally hardened sites would be prioritized. Methods and techniques would be employed to minimize vegetation and soil disturbance (e.g., the use of air or watercraft, utilization of existing roads or trails, or the use of low-ground-pressure vehicles and equipment). Ground operations would be avoided during spring break-up.
- Construction of road or trails in wetlands and floodplains would be avoided.

Description of Vegetation Actions by Alternative

Table 2-5 describes proposed Vegetation actions by alternative. See Maps 2-5 through 2-8, for additional information.

Table 2-5: Vegetation Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
Special Status Species (SSS) Flora and Lichen Areas (caribou habitat) – Travel Management Decisions *CYRMP (BLM 1986a)* Crucial caribou habitats within the Tozitna and Ullbi subunits have been designated as ACECs. All forest lands within this planning area are open to subsistence and commercial timber harvest except crucial wildlife habitat and the eight Research Natural Areas (RNAs). Timber may be harvested on subsistence study/exchange withdrawals under a subsistence or personal use type permit. No commercial sales will be permitted on these withdrawals. Data on forest lands will be accumulated and maintained until identified needs require a more intensive forest inventory.	**Special Status Species (SSS) Flora and Lichen Areas (caribou habitat) – Travel Management Decisions** See Section 2.7.18, Table 2-17, for travel management decisions in SSS flora and lichen areas.	**Special Status Species (SSS) Flora and Lichen Areas (caribou habitat) – Travel Management Decisions** See Section 2.7.18, Table 2-17, for travel management decisions in SSS flora and lichen areas.	**Special Status Species (SSS) Flora and Lichen Areas (caribou habitat) – Travel Management Decisions** See Section 2.7.18, Table 2-17, for travel management decisions in SSS flora and lichen areas.

Alternative A	Alternative B	Alternative C	Alternative D
BLM Permitted Surface Disturbance No current management direction was identified. Management direction is determined on a case-by-case basis.	**BLM Permitted Surface Disturbance** For BLM-authorized surface-disturbing activity in known habitat for SSS flora or rare ecosystems (as determined by the BLM), applicants would be required to conduct a vegetation and SSS plant survey using BLM-approved protocol. The map of known habitat would be revised when new information becomes available. In all other areas, BLM-authorized surface-disturbing activities over 5 acres would be required to conduct a vegetation and SSS flora survey using BLM-approved protocol. Permittees would receive reporting instructions if SSS species are found. Subject to valid existing rights, BLM-permitted activities would be required to establish a 300-foot setback for SSS flora populations when discovered during surveys for short-term and long-term surface-disturbing activities. Special construction design and implementation measures, including operation measures, may be required to avoid more than 300 feet as necessary to prevent further impacts on SSS flora. If limestone or serpentine geologic substrate is found during survey or monitoring, subject to valid existing rights, those areas would be evaluated for further resource protection measures to protect sensitive vegetation associated with those geologic substrates.	**BLM Permitted Surface Disturbance** For BLM-authorized surface-disturbing activity in known habitat for SSS flora or rare ecosystems (as determined by the BLM), applicants would be required to conduct a vegetation and SSS plant survey using BLM-approved protocol. The map of known habitat would be revised when new information becomes available. In all other areas, BLM-authorized surface-disturbing activities over 5 acres would be required to provide the BLM a geo-located photo inventory of the site along with soil samples. If a SSS species were identified via the photo inventory, then the permittee would be required to conduct a vegetation and SSS flora survey using BLM-approved protocol. Permittees would receive reporting instructions if SSS species are found. Subject to valid existing rights, BLM-permitted activities would be required to have a 100-foot setback from SSS flora populations when discovered during surveys for short-term and short-term disturbances.	**BLM Permitted Surface Disturbance** For BLM-authorized surface-disturbing activity in known habitat for SSS flora or rare ecosystems (as determined by the BLM), applicants would be required to provide a geo-located photo inventory of the site along with soil samples to the BLM. In all other areas, BLM-authorized surface-disturbing activities over 5 acres would be required to provide the BLM a geo-located photo inventory of the site along with soil samples. If SSS species are found, avoidance and minimization to mitigate impacts to those species would be determined by the BLM AO on a case-by-case basis at the site-specific implementation level.
Seeding and Planting for Reclamation/Restoration No current management direction was identified. Management direction is determined on a case-by-case basis.	**Seeding and Planting for Reclamation/Restoration** If seeding or planting is part of reclamation/restoration, permittees must use native seed and propagules applicable for existing climatic conditions and desired ecosystem function as demonstrated by undisturbed areas or applicable vegetation outplanting trials (planting of raised nursery plants or seeds into the natural environment). If applicable, these would be native species as certified through the State of Alaska Plant Materials Center. Coordination with the Seeds of Success program must begin during the BLM permitting process and final seed/propagule mixes must be approved by the BLM AO or the BLM national seed warehouse program.	**Seeding and Planting for Reclamation/Restoration** If seeding or planting is part of reclamation/restoration, permittees must use native seed and propagules applicable for existing climatic conditions and desired ecosystem function as demonstrated by undisturbed areas or applicable vegetation outplanting trials (planting of raised nursery plants or seeds into the natural environment). If applicable, these would be native species as certified through the State of Alaska Plant Materials Center. Coordination with the Seeds of Success program must begin during the BLM permitting process and final seed/propagule mixes must be approved by the BLM AO or the BLM national seed warehouse program. Nonnative seed and propagules would be allowed if determined applicable for the climatic condition and ecosystem function and if native plants are either unavailable or unable to establish with current climatic conditions. This would be determined on a case-by-case basis and approved by the BLM AO.	**Seeding and Planting for Reclamation/Restoration** If conducting restoration or reclamation, permittees must use seed and propagules applicable for the existing climatic condition and ecosystem function. Final seed/propagule mixes would be determined on a case-by-case basis and approved by the BLM AO.

2.7.5 Wildlife

Actions Common to All Action Alternatives for Wildlife

1. BLM sensitive species will be managed to promote their conservation and to minimize the likelihood and need for listing under the ESA. Proactive management and monitoring would occur, as appropriate (BLM-Alaska Sensitive Species List as amended).
2. Adaptive Management
   - The BLM would annually monitor wildlife habitat and life-cycle shifts occurring due to climate change and will shift applicable management described below to respond to those shifts. Accordingly, the BLM management for wildlife habitat will be flexible and will "follow" resulting changes in both wildlife habitat and species presence.
   - Aircraft operating in support of special recreation permit (SRP) activities would be required to maintain a minimum altitude of 1,500 feet above ground level (AGL) within 0.50 mile from occupied raptor nests (golden eagle, bald eagle, peregrine, gyrfalcon), except during takeoff and landing and when adherence would compromise safety.
   - Per Federal Aviation Administration (FAA) Advisory Circular AC 91-36, Visual Flight Rules Flight Near Noise-Sensitive Areas, pilots would be requested to maintain a minimum altitude of 2,000 feet AGL over special areas designated in the AC, such as WSRs. The BLM will modify these requests as needed based on updated FAA recommendations or requests.
3. Caribou, Moose, Muskox, Dall Sheep, Mountain Goats
   - The BLM would coordinate with ADF&G and USFWS to help accomplish the population inventory monitoring surveys for moose (see Map 2-9), caribou (Map 2-10), and muskox (Map 2-11). Data from these surveys would be used by the Alaska Board of Game and the Federal Subsistence Board to set annual harvest levels for both State and federal hunts.
   - To minimize the potential for disease transmission to wildlife, applications for the use of domestic sheep, goats, alpacas, llamas, and other similar species in Dall sheep habitat will be reviewed on a project-specific basis (Map 2-11).
   - If reindeer grazing is permitted, prior to issuing a grazing permit, the BLM would require a survey to determine the presence of caribou wintering and calving habitat. If habitat is present, grazing permits would be issued on a case-by-case basis. Additionally, permit requirements would include moving the reindeer herd as necessary to avoid caribou wintering and calving habitat if those wintering and calving areas shift. Prior to receiving a grazing permit, permit applicants must demonstrate the ability to gather, move, and/or contain their herds as necessary to avoid co-mingling with caribou herds and to address rangeland health standards.
   - Reclamation for all surface-disturbing activities will be in accordance with general performance standards for all BLM-permitted surface-disturbing activity requirements described under Actions Common to All Action Alternatives for Soils (see Section 2.7.2).
   - The Plan of Development for linear project ROWs must address caribou passage in all known caribou connectivity corridors. To support the site-specific NEPA, applicants must provide scientifically defensible information to demonstrate that their proposed linear facility would not impede caribou migration.

4. Migratory Birds: The BLM and BLM-permitted activities would comply with all requirements of the Migratory Bird Treaty Act and follow USFWS guidelines for seasonal avoidance of vegetation clearing.
5. Raptors
    - Priority raptor species are defined as peregrine falcon, gyrfalcons, golden eagle, and bald eagle. Nesting seasons are defined as: From April 15–August 15 for bald eagles, golden eagles, and peregrine falcons; and from March 15–July 20 for gyrfalcons.
    - Permitted surface-disturbing activities would be required to conduct pre-work priority raptor nesting surveys.
    - Communications towers would use industry BMPs to reduce or minimize bird strikes.
    - All transmission powerlines would comply with Avian Power Line Interaction Committee (APLIC) guidelines to minimize raptors and other birds from colliding with or being electrocuted by utility lines, alternative energy structures, towers, and poles (APLIC 2012).
    - If practicable, the BLM would require that utility lines running through raptor nesting areas be buried.
    - Where raptors are likely to nest on human-made structures (such as cell phone towers) and such use could impede operation or maintenance of the structures or jeopardize the safety of the raptors, the BLM would require that the structures be equipped with either (1) devices engineered to discourage raptors from building nests, or (2) nesting platforms that would safely accommodate raptor nests without interfering with structure performance.
6. Bats
    - All BLM-permitted activities and mine closures with the potential to affect bat hibernacula would be required to perform bat surveys as per agency accepted protocols to determine presence/absence of bats prior to project implementation.
    - BLM-permitted activities would avoid disturbing known bat hibernacula to the extent practicable. This would include (but may not be limited to) occupied cave/karst features, abandoned mine adits and shafts, and abandoned structures.
    - The BLM would require provisions for bat ingress and egress for bat-occupied mine shaft/adits that are closed or abandoned.
    - White-nose syndrome decontamination protocol would be applied when working in bat hibernacula or breeding areas, if white-nose syndrome is detected in Alaska.
7. ESA-Listed Species
    - The BLM will incorporate objectives and actions identified in endangered species recovery plans into BLM documents, as appropriate.
    - In line with the BLM's ESA Section 7(a)1 responsibilities, the BLM will use its authorities for the proactive conservation and for ESA-listed species and their habitat, where feasible.
    - In line with the BLM's ESA Section 7(a)1 responsibilities, the BLM would use its authorities for the proactive conservation and management of wood bison and their habitat, where feasible.

8. Pollinators: The BLM would incorporate all commitments, as applicable, from the U.S. Department of the Interior Pollinator Protection Plan (BLM 2015c, including any future IM updates or policy replacements) and any subsequently tiered BLM Alaska-specific guidance.
9. The BLM would work in cooperation with ADF&G and the State of Alaska AO to understand the details of predator control plans on BLM-managed lands. This would include the BLM meeting with the ADF&G annually to discuss control methods, objectives, locations, and timing; and to resolve any potential areas of concern or conflict with the State predator control program. Subsequent to the meeting, the BLM Alaska State Office would notify potentially affected BLM Field or District Managers as to the species, method of control, location, and proposed time periods for predator control work. This would afford the affected managers an opportunity to assess any potential for conflict of use for an affected area(s). If there is a potential conflict, a response would be coordinated at the BLM Alaska State Office level with the affected manager(s) and the State of Alaska would be notified.
10. The BLM would designate 236,556 acres as the Innoko Bottoms Priority Wildlife Habitat Area (see Map 2-12) which corresponds to BLM land within the Paradise Controlled Use Area designated by ADF&G 2016-2017 Hunting Regulations. Management actions would vary between alternatives.

Description of Wildlife Actions by Alternative

Table 2-6 describes proposed Wildlife actions by alternative. See Maps 2-9 through 2-12, for additional information.

Table 2-6: Wildlife Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
Caribou and Moose *SWMFP (BLM 1981)* Leasable Minerals Impacts of mineral leasing could be mitigated through stipulations for seasonal use or NSO in crucial habitat area. Fire Management Prescribed burns and natural fires would benefit winter moose range. Fire is a management tool that should be utilized to maintain quality moose habitat. Land and Realty Protect caribou habitat. Improve, maintain, or protect wintering areas, migration routes, and calving areas.	**Caribou and Moose** Leasable Minerals Subject to valid existing rights, NSO for leasable minerals in caribou and moose calving and wintering habitats. Locatable and Salable Minerals Locatable and salable mineral development would be allowed subject to actions common to all alternatives for wildlife described above. Seasonal Use Restrictions Seasonal use restriction on construction in moose and caribou calving habitat (May–June) and in essential winter habitat areas (November–February). These seasonal restrictions may be changed based on changes in caribou or moose habitat.	**Caribou and Moose** Leasable Minerals Controlled surface use stipulation: No leasable or salable operations allowed in caribou calving habitat from May–June. Standard leasing terms and conditions would apply for leasable minerals in moose calving and wintering habitat. Locatable and Salable Minerals Same as Alternative B. Seasonal Use Restrictions Seasonal use restriction on construction in moose and caribou calving habitat (May–June). These seasonal restrictions may be changed based on changes in caribou or moose habitat.	**Caribou and Moose** Leasable Minerals Mineral leasing allowed in calving and wintering habitats under standard stipulations but also subject to actions common to all alternatives described above. Locatable and Salable Minerals Same as Alternative B. Seasonal Use Restrictions No seasonal use limitations on construction in moose and caribou calving and essential winter habitat areas.

Alternative A	Alternative B	Alternative C	Alternative D
Innoko Bottoms Priority Wildlife Habitat Area No current management direction was identified. Management direction is determined on a case-by-case basis.	**Innoko Bottoms Priority Wildlife Habitat Area** Mineral Decisions To protect unique wildlife and subsistence resources, BLM-managed wildlife habitat in Innoko Bottoms would be managed with the following stipulations subject to valid existing rights: • Pursue withdrawal from locatable mineral entry. • NSO for leasable development • Closed to salable development • NSO for surface-disturbing BLM-permitted activities ROW Decisions See Section 2.7.16, Table 2-15, for ROW decisions for the Innoko Bottoms Priority Wildlife Habitat Area. Travel Management Decisions See Section 2.7.18, Table 2-17, for travel management decisions for the Innoko Bottoms Priority Wildlife Habitat Area.	**Innoko Bottoms Priority Wildlife Habitat Area** Mineral Decisions To protect unique wildlife and subsistence resources, BLM-managed wildlife habitat in Innoko Bottoms would be managed with the following stipulations subject to valid existing rights: • Open to locatable development • NSO for leasable development • Closed to salable development ROW Decisions See Section 2.7.16, Table 2-15, for ROW decisions for the Innoko Bottoms Priority Wildlife Habitat Area. Travel Management Decisions See Section 2.7.18, Table 2-17, for travel management decisions for the Innoko Bottoms Priority Wildlife Habitat Area.	**Innoko Bottoms Priority Wildlife Habitat Area** Mineral Decisions Same as Alternative C. ROW Decisions See Section 2.7.16, Table 2-15, for ROW decisions for the Innoko Bottoms Priority Wildlife Habitat Area. Travel Management Decisions See Section 2.7.18, Table 2-17, for travel management decisions for the Innoko Bottoms Priority Wildlife Habitat Area.
Connectivity Corridors No connectivity corridors would be managed.	**Connectivity Corridors** The BLM would work with adjacent landowners in the management of two connectivity corridors (North Connectivity Corridor and South Connectivity Corridor) to facilitate adaptive management by retaining connectivity between USFWS refuges in the planning area (see Map 2-12). See Appendix B for connectivity corridor definition and Magness et al. 2018). Mineral Decisions To protect resources within and movement through these corridors, BLM-managed public lands within the corridors would be managed with the following stipulations subject to valid existing rights: • Pursue withdrawal from locatable mineral entry • NSO for leasable development • Closed to salable development • NSO for surface-disturbing BLM-permitted activities ROW Decisions in Connectivity Corridors • See Section 2.7.16, Table 2-15, for ROW decisions in connectivity corridors. Travel Management Decisions See Section 2.7.18, Table 2-17, for travel management decisions for connectivity corridors.	**Connectivity Corridors** The BLM would work with adjacent landowners in the management of one connectivity corridor (South Connectivity Corridor) to facilitate adaptive management by retaining connectivity between USFWS refuges in the planning area (see Map 2-12). Mineral Decisions To protect resources within and movement through this corridor, BLM-managed public lands within the corridor would be managed with the following stipulations subject to valid existing rights: • Open to locatable development • NSO for leasable development • Open to salable development on a case-by-case basis ROW Decisions in Connectivity Corridors • See Section 2.7.16, Table 2-15, for ROW decisions in connectivity corridors. **Travel Management Decisions** See Section 2.7.18, Table 2-17, for travel management decisions for connectivity corridors.	**Connectivity Corridors** BLM would not provide for management of any connectivity corridors.

Alternative A	Alternative B	Alternative C	Alternative D
Migratory Birds Comply with the Migratory Bird Treaty Act. *CYRMP (BLM 1986a)* Objective: Manage crucial peregrine falcon habitat in conformance with the Peregrine Falcon Recovery Team Plan guidelines by limiting or precluding habitat destruction or human activity abatement.	**Migratory Birds** ROW Decisions To protect migratory birds, riparian areas would be ROW avoidance areas. See Section 2.7.16, Table 2-15. Mineral Decisions No mineral leasing in riparian areas. Surface-Disturbing Activity During the nesting season (generally May 1–July 31), prohibit BLM-permitted surface-disturbing activities, auditory disturbance, and vegetation-altering projects in migratory bird habitat. These dates may vary by species and seasonal conditions or based on changes in habitat used. In cases where avoidance of clearing vegetation during nesting season is not practicable (as determined by the AO), apply appropriate avoidance and/or mitigations to minimize impacts on migratory birds. Those restrictions and mitigations would be determined on a case-by-case basis at the implementation level and may include site-specific nesting surveys to guide minimization. Exceptions may be granted by the AO in coordination with USFWS if no other feasible alternative exists.	**Migratory Birds** Same as Alternative B.	**Migratory Birds** Surface-Disturbing Activity Apply appropriate avoidance and/or mitigations to minimize impacts on migratory birds. Those restrictions and mitigations would be determined on a case-by-case basis at the implementation level. Exceptions may be granted by the AO in coordination with USFWS if no other feasible alternative exists. Nesting season is from April 15-August 15 for bald eagles, golden eagles, and peregrine falcons; and from March 15-July 20 for gyrfalcons.

Alternative A	Alternative B	Alternative C	Alternative D
Raptors *SWMFP (BLM 1981)* WL-3.1: Peregrine falcon nesting sites are designated ACECs. There is a buffer zone for oil, gas, and mining activities of one-quarter mile around active peregrine nests from April 15 to August 15. WL-3.2: Develop habitat management plans (HMPs) for raptors on the Kuskokwim River and its tributaries with special emphasis on golden eagles, bald eagles, ospreys, and gyrfalcons. *CYRMP (BLM 1986a)* Prescription: Designate 91,520 acres as ACECs to protect crucial riparian habitat for peregrine falcons.	**Raptors** Surface- and Non-Surface-Disturbing Activity Buffers NSO and no surface-disturbing BLM-permitted activities around active priority raptor nests for 1 mile. Permanent Structures To minimize the direct loss of priority raptor foraging habitat, all reasonable and practicable efforts would be made to locate permanent facilities as far from priority raptor nests as feasible and to minimize habitat loss to the extent feasible. Of particular concern for avoidance are cliffs, ponds, lakes, streams, wetlands, and riparian habitats. Campsite Buffers To reduce disturbance to nesting priority raptors, campsites authorized by the BLM, including short- and long-term camps and agency work camps, must be located at least 1 mile from any known priority raptor nest site during the nesting season. Exceptions may be granted with additional minimization measures by the AO if no feasible alternative exists. Aircraft Use Buffers To minimize disturbance to nesting priority raptors, aircraft used for BLM-permitted activities are required to maintain an altitude of at least 1,500 feet AGL when within one-half mile of priority raptor nesting sites during nesting season unless weather or flight conditions would cause safety to be compromised. Human Activity Buffers BLM permittees will minimize human activity within 1 mile of priority raptor nest sites during the nesting season. The cumulative number of authorized visits (defined as each day in which work is done within 1 mile of a nest site) to any nest site per nesting season, by all authorized users, must be limited to three visits per nest site. Exceptions may be granted by the AO in coordination with USFWS if no other feasible alternative exists. Motorized Ground Vehicle Use Buffers To reduce disturbance impacts on priority raptors, motorized ground-vehicle use by BLM permittees would be minimized within 1 mile of any known priority raptor nest during the nesting season. Such use is prohibited within one-half mile of nests during the nesting season unless an exception is granted by the AO in coordination with USFWS. Construction Buffers Construction within one-half mile of known priority raptor nests is prohibited during the nesting season. No facilities that will be used or accessed during the nesting period (including the area of associated human activity by facility users) could be constructed within one-half mile of known priority raptor nesting sites. Exceptions may be granted by the AO in coordination with USFWS if no feasible alternative exists.	**Raptors** Surface- and Non-Surface-Disturbing Activity Buffers In the event of discovery of priority raptor nest within 1 mile of BLM-permitted activities, the permittee would cease all activity and report to the BLM and coordinate future activity. Permanent Structures Same as Alternative B. Campsite Buffers Same as Alternative B. Aircraft Use Buffers Same as Alternative B. Human Activity Buffers Same as Alternative B. Motorized Ground Vehicle Use Buffers Same as Alternative B. Construction Buffers Same as Alternative B.	**Raptors** Campsite Buffers Authorized agency or construction campsites would be restricted to at least 1 mile from priority raptor nest sites. Other BLM-Permitted Activity The BLM would consider the need for buffers around raptor nests for BLM-permitted activities on a case-by-case basis at the implementation level. BLM-permitted activities would be required to use practices to avoid impacts on raptors, and to include visual screening and/or noise controls as necessary to avoid raptor nest abandonment or nest failure. Identification of these required measures would be made on a case-by-case basis through site-specific implementation level NEPA.

2.7.6 Nonnative Invasive Species

Actions Common to All Action Alternatives for NNIS

1. All actions implemented or authorized by the BLM would include measures to prevent the introduction and spread of NNIS.
2. BLM-Permitted Activities
    - Authorized BLM permit holders are responsible for all costs and coordination related to eradicating prioritized NNIS infestations resulting from their permitted activity. Prioritized NNIS are those listed in the BLM Alaska State Invasive Species Policy (most, but not all, nonnative species with ranking higher than 50). An applicant should implement an NNIS survey or coordinate with the BLM to determine if an infestation is present prior to the granting of their permit. Authorized BLM permit holders would be responsible for the eradication of any increase in prioritized NNIS resulting from their permitted activities.
    - Annual Reports from all permitted operations must include an update on NNIS presence and extent.
    - All BLM-permitted activities must comply with current BLM Alaska NNIS Management Policy. This includes:
        - Development of an NNIS Management Plan commensurate with the size and intensity of the activity, including where appropriate Hazard Analysis Control Points (HACCP) strategy. The BLM would provide examples of NNIS management plans.
        - At the discretion of the AO, permittees of proposed and existing authorized activities may be required to work with surrounding land management agencies/owners to establish Cooperative Weed Management Areas (CWMAs) and would assist in developing and implementing NNIS management plans.
        - BMPs to prevent the introduction and spread of NNIS, as described in the BLM Alaska NNIS Management Policy, must be followed. Permittees would work with the BLM to develop project-specific BMPs where needed. These include but are not limited to Early Detection Rapid Response, prevention measures such as cleaning all equipment before entering a permitted site, containment measures such as timing NNIS mowing before seed set, and treatment measures such as developing an integrated pest management plan.
        - Methods of chemical control authorized by the *Vegetation Treatments using Herbicides on BLM Land in 17 Western States Record of Decision* (BLM 2007a) and *Vegetation Treatments using Aminopyralid, Fluroxypyr, and Rimsulfuron on BLM Land in 17 Western States* (BLM 2016b) are allowed. Permittees are responsible for upholding the requirements related to the use of those herbicides. Treatment monitoring and reporting requirements are outlined in the vegetation treatments RODs (BLM 2007a; BLM 2016b). Additionally, the BLM would use all other methods of chemical control authorized by subsequent BLM NEPA decisions, as appropriate. Any use of chemical control on BLM-managed public lands must be approved by the BLM and must follow BLM requirements for type and application method, including the use of a certified applicator.
3. Cooperate with other agencies and landowners in the prioritization of treatment areas with known infestations of NNIS, including the INHT NTMC, anadromous streams, lakes, lichen-rich habitats, moose habitat, and berry-picking areas, for prevention and eradication of NNIS.

4. Coordinate with other applicable agencies in the implementation of the Arctic Invasive Alien Species Action Plan and *Safeguarding America's Lands and Waters from Invasive Species: A National Framework for Early Detection and Rapid Response* (DOI 2016). Coordinate with the Alaska Committee for Noxious and Invasive Pests Management.
5. Wildland Fire
    - The BLM would coordinate to provide training and information on NNIS to the protection agencies.
    - When deploying onto BLM managed lands, the responsible fire protection agency/organization would be required to use BMPs for cleaning and inspection of personal gear, tools, and all equipment prior to deployment to fire sites. Washing stations used for cleaning may be required to have a containment system.
    - NNIS monitoring in burned areas would be prioritized based on risk of invasion, presence of surface-disturbing activities, use of motorized equipment for fire management, and resource value of the burned area. This would be determined on a case-by-case basis.
    - The BLM would seek ES&R funds for inventorying, monitoring, and treatment of NNIS in burned areas based on risk of invasion and resource values on a case-by-case basis.
    - Water delivery aircraft would not dip or scoop from waters infested by Elodea or other aquatic invasive species unless necessary to protect human life.
6. Weed-Free Material
    - Only feed, mulch (e.g., hay cubes, hay pellets, or straw), and erosion control materials certified as weed-free through the Alaska Weed-Free Forage certification program (or other programs with approval of the AO) would be authorized on BLM-managed public lands. Where Alaska-certified sources are not available, locally produced forage, mulch, and erosion control materials could be used with approval from the AO. If no certified weed-free or local sources are available, other products could be used with the approval of the AO.
    - Only gravel and material certified as weed-free through the Alaska Weed-Free Gravel certification program would be authorized on BLM-managed public lands. Where weed-free gravel and materials are not available, other sources may be used with the approval of the AO.
    - Use of approved weed-free materials does not relieve project proponents of their requirement to control NNIS related to their authorized activity.
7. Casual Use
    - At logical points of entry to BLM-managed land (e.g., trailheads, airports, roads, boat landings), based on HACCP assessment framework, NNIS BMPs would be posted to encourage citizen-based NNIS prevention stewardship.
    - The BLM would cooperate with rural communities and regional land managers to establish and implement HACCP, CWMAs, and outreach and educational programs.

- The BLM would cooperate with the State of Alaska regarding NNIS prevention related to the use of navigable waterways by casual and subsistence use of motorboats and floatplanes.

Description of NNIS Actions by Alternative

All proposed actions related to NNIS are common to all action alternatives.

2.7.7 Wildland Fire

Actions Common to All Action Alternatives for Wildland Fire

1. Preparedness
   - Fire management direction for the planning area would be incorporated into the BLM Alaska Fire Management Plan and the Wildland Fire Decision Support System (or other appropriate systems used by the BLM or other federal land management agencies).
   - The initial response to wildland fires occurring on BLM-managed public lands would be based on the objectives in this plan and identified in the BLM Alaska Fire Management Plan.
   - The locations of BLM assets and resources vulnerable to wildland fire or fire management actions would be geospatially identified, valued, and assigned a default initial fire management response. Default initial responses would be made available to the protecting agencies.
   - Fire management planning and implementation would be coordinated through the Alaska Master Cooperative Wildland Fire Management and Stafford Act Response Agreement and Alaska Statewide Annual Operating Plan to ensure a multi-jurisdictional, landscape-scale approach.
2. Wildfire and Fuels Management
   - Naturally occurring wildfires may be managed for multiple objectives including resource benefit on all BLM-managed public lands within the planning area.
   - The initial action on human-caused wildfires would be to suppress the fire at the lowest cost and least risk to firefighter and public safety.
   - Use the principles of active management to facilitate wildfire prevention, suppression, and recovery planning measures designed to protect people, communities, landscapes, and water quality, and to mitigate the severe flooding and erosion caused by wildfire.
   - Fuels treatments would be initiated and maintained at cabins, cultural and paleontological sites, and at other BLM values where needed to protect resources from fire. Methods of hazard fuel reduction may include prescribed fire (e.g., broadcast or pile burning), and mechanical, chemical, or manual disposal. Specific priorities include:

  - Fuel reduction in black spruce areas where wildfire has been excluded due to land use and allocation decisions that conflict with the natural role of fire
  - Fuel breaks in and around communities
  - Areas with known or high probability of cultural resources, vertebrate fossils, or significant non-vertebrate fossils that are at risk to damage from wildfire
  - Historical eligible roadhouses within the INHT NTMC
  - Public shelter cabins within the INHT NTMC

- The BLM would use Good Neighbor Authority agreements and pursue long-term land stewardship contracts in order to support fuels reduction activities on neighboring lands where it improves the ability of the BLM to manage fire.
- The BLM would manage wildland fire in a manner that avoids damaging impacts to resources and other values including the introduction and spread of non-native and invasive species, introduction of suppression chemicals into waterways, disturbance of erodible soils or ecologically sensitive systems, and the degradation of air quality. Use minimum impact suppression techniques wherever possible. Repair or mitigate any damage that occurs.
- The BLM would cooperate and collaborate with other federal, state, Native, and local land managers and with other stakeholder groups to effectively and efficiently manage wildland fire in Alaska in accordance with interagency and BLM plans and agreements.

3. Prevention, Education, Enforcement, and Cost Recovery

   - The BLM would participate in outreach and prevention efforts and coordinate through the Alaska Wildland Fire Coordinating Group Wildland Fire Education and Prevention committee.
   - Actions would be taken to recover costs and damages incurred by the BLM resulting from human caused fires when the responsible party(s) is identified and legal liability or intent exists.

4. Nonnative Invasive Species

   - The BLM would provide training and information on NNIS to the protection agencies. NNIS monitoring in burned areas would be prioritized based on risk of invasion, presence of surface disturbing activities, use of motorized equipment for fire management, and resource value of burned area. This would be determined on a case-by-case basis.
   - The BLM would seek ES&R funds for inventorying, monitoring, and treatment of NNIS in burned areas based on risk of invasion and resource values on a case-by-case basis.

5. Smoke and Air Quality

   - Smoke would be recognized as both a human health threat and an inevitable natural result of wildfire. All fire management actions would consider the impacts of smoke on human health and safety. The effects of smoke on economic activities, recreation, and tourism would be considered.

- Planned fire management actions would be conducted to minimally affect adjacent Class I (Denali National Park and Preserve) and Class II (Yukon Delta and Innoko NWRs and Lake Clark National Park and Preserve) areas.

Description of Wildland Fire Actions by Alternative

All proposed wildland fire management actions for the three action alternatives are summarized above; there are no alternative-specific management actions for the action alternatives. Under Alternative A, the BLM would continue to manage wildland fire in the planning area according to the goals and objectives identified in the 2005 *Land Use Plan Amendment Environmental Assessment for Wildland Fire and Fuels Management for Alaska* (BLM 2005a).

2.7.8 Cultural Resources

Actions Common to All Action Alternatives for Cultural Resources

1. Monitor cultural resources to identify effects from climate change.
2. Prioritize cultural resource surveys to include the following:
    - Unique or significant cultural resources threatened by wildland fire
    - Unique or significant cultural resources threatened by other phenomena related to climate changes, including permafrost thawing, or exposure through coastal, riverine, or other erosion
    - Areas known to have high OHV use
    - Cultural resource surveys in these areas (listed in descending order of priority). This would include inventory and monitoring for potential loss or degradation:
        - Kaltag Portage
        - Farewell Burn
        - ACECs with cultural relevance and importance
        - Unalakleet River corridor and watershed
        - Historic mining communities of Iditarod, Flat, and Ophir; Yukon-Kuskokwim Portage
        - Kuskokwim River corridor and watershed
        - Yukon River corridor
        - Nulato River corridor
        - Pitka River corridor and watershed
        - Big River corridor

- Mouth of Seal Oil Creek on Norton Sound

3. Prioritize hazard fuel management projects in areas with known or high probability of cultural resources that are at risk to damage from wildfire. Continue to monitor shifts in vegetation types to assess changing fire risk to cultural resources.
4. Prioritize areas that are high probability for cultural sites eligible for the National Register of Historic Places (NRHP) for post-wildland fire survey.
5. Stabilize or excavate threatened unique or significant cultural sites.
6. Support partnerships with other federal agencies, State of Alaska, tribes, Native corporations, and private landowners for documentation, stewardship, and protection of cultural resources, including historic mining districts such as Iditarod, Flat, and Ophir.
7. For BLM-permitted activities that occur, the following stipulations would be attached to all permits, leases, ROW grants, etc.:
   - All operations shall be conducted in such a manner as to avoid damage or disturbance to any prehistoric or historic sites or modern camp sites. The Archaeological Resource Protection Act prohibits the unauthorized excavation, removal, damage, or disturbance of any archaeological resource located on public lands. Violation of this law could result in the imposition of both civil and criminal penalties on the violator, and revocation of present and future BLM permits or authorizations. Human remains on federal lands are additionally protected by the Native American Graves Protection and Repatriation Act (Public Law 101-601, 25 U.S. Code [U.S.C.] 3001 et seq., 104 Stat. 3048).
   - Should any historic or prehistoric sites, including potential human remains be located during the course of operations, the applicant shall immediately stop work and notify the BLM AO, and the BLM Archaeologist will evaluate the discovery. If the applicant proposes surface disturbance in the future other than what is authorized herein, a cultural resource survey and evaluation will be needed before the disturbance is authorized.
8. In the event that a discovery is made at an active mining claim, BLM and permitted operators would follow the regulations mandated in 43 CFR 3809.420(b)(8).
9. Prioritize the preparation of NRHP Determinations of Eligibility and nominations for INHT contributing properties (including trail segments and associated sites).
10. Land Use Plan Criteria for Cultural Allocation
    - Cultural properties allocated to uses are subject to the management actions listed in Table C-2 of BLM's Land Use Planning Handbook (BLM 2005b) to realize their use potential. Designate all sites for scientific use, except INHT trail segments. Consider the following INHT historic sites for public use: the Rohn Civilian Conservation Corps Cabin (MCG-00019) and the Kaltag and Farewell segments of the INHT (UKT-00044 and NOB-00057 [Kaltag]). Prioritize developing partnerships with Doyon Native Corporation to work toward preservation of the existing historical mining town of Flat.

- Categorize geographic areas as high/medium/low priority for future inventory of cultural properties. High-priority areas include the Kaltag Portage and Farewell Burn areas of the INHT and their associated resources. High-priority areas also include areas of high mineral potential, both because of the probability of historic mining sites, and because of the potential for adverse effects on resources from proposed mining. All authorizations for land and resource use would comply with Section 106 of the NHPA, consistent with and subject to the objective established in the RMP for the proactive use of cultural properties in the public interest (NHPA Sec. 106, 101(d)(6), 110(a)(2)(E); U.S.C. 306108; BLM et al. 2012).
- BLM would continue to consult with tribes to identify Traditional Cultural Properties or traditional use areas within the planning area as part of future planning process.

Description of Cultural Resources Actions by Alternative

Management actions that pertain to Cultural Resources and are specific to the action alternatives are all described in Table 2-19 for management decisions for the INHT NTMC and are not included in Table 2-7 below. There are no additional proposed management actions that pertain to Cultural Resources that vary based on action alternative. Table 2-7 below only includes management actions for Alternative A.

Table 2-7: Cultural Resources Actions for Alternative A

Alternative A
Unalakleet WSR Management Plan 11.1: Inventory will be conducted prior to surface-disturbing projects and will be oriented toward finding sites representative of early prehistoric occupation and sites representing the theme of transportation and trade.
INHT Comprehensive Management Plan: To increase public use and enjoyment, all trail segments identified for active management should be managed to protect and interpret their historic values and should be identified by the placement of uniform markers.
Certain segments and all historic sites identified in Appendix 5 of the INHT Comprehensive Management Plan should be further evaluated for possible nomination to the NRHP. This should be done prior to making any binding management decisions that eventually may include various degrees of protection, interpretation, and recordation of their historic values. It is recommended that Level 1 and 2 sites be given the highest priority. Detailed management and use plans for accomplishing this objective should be prepared by the appropriate land management agency.
Nominations to the NRHP should be by a thematic group format submission. If not possible, then each managing agency should consider undertaking site-specific nominations of the site recommended.
CYRMP Management Actions: Management of these resources with other land use proposals would avoid or mitigate impacts, where possible and warranted. Consumptive uses of archaeological and historical sites would be allowed for scientific use and interpretation.
CYRMP (Management Prescriptions) 4: Maintain the relatively undisturbed resource values on 43,010 acres of land, by withdrawal from all forms of appropriation, including mineral location under the 1872 Mining Law, and mineral leasing under the Mineral Leasing Act of 1920 as amended and supplemented. Eight areas have been identified in this plan for designation as RNAs.
Wildland Fire and Fuels Management: The requirements in 36 CFR Section 800, NHPA, and of the Alaska SHPO apply.
Site-specific designations will be applied, and the map atlas maintained by suppression agencies updated yearly by Field Office staffs. The “Critical” management option is assigned to National Historic Landmark sites and “Full” to structures in or eligible for inclusion in the NRHP. “Full” may also be assigned to sites currently under excavation. When a site or structure is discovered during any fire management activity, the appropriate Field Office will be notified immediately.
A cultural resource evaluation is required for fuel treatment projects.
To reduce the risks and costs of wildland fires, the management emphasis for Full Management Option lands is to minimize the effects of wildland fire by… maintaining known sites on or eligible for NRHP in a viable condition.
Wildland Fire Management, 3.1.4c NHPA Compliance: Potential impacts to significant cultural resources from both emergency and planned fire-related actions taken by the BLM will be avoided or minimized to the maximum extent possible through application of existing BLM policies and procedures. These include following procedures for Section 106 compliance in the BLM's 2012 National Programmatic Agreement for Section 106 compliance, which is implemented in Alaska by the BLM's 2014 Protocol with the Alaska SHPO (BLM 2014b). The BLM would also use its Policy for Cabin/Structure Protection to further proactively help identify and protect significant standing structures in rural parts of the state.

2.7.9 Paleontological Resources

Actions Common to All Action Alternatives for Paleontological Resources

1. All Potential Fossil Yield Classification (PFYC) 4 and 5 areas that are in locations where erosion potential is increasing the risk of fossil exposure would be prioritized for BLM survey. Apply as necessary for certain Class 3 and U units.
2. Prioritizing hazard fuel management projects in areas with known or high probability of vertebrate fossils or significant non-vertebrate fossils to prevent damage to those resources from the impacts of wildfire, such as increased erosion.
3. Inadvertent discovery stipulation to be included on all ROW grants, leases, and authorizations (BLM-permitted use). These stipulations would be consistent with Chapter III of the BLM Handbook H-8270-1, *General Procedural Guidance for Paleontological Resource* (BLM 1998) and would include the following steps:
    - An assessment by a BLM paleontologist (or other qualified paleontologist approved by the BLM) of the paleontological resources likely to be present in the area and the threat of damage to the resource
    - A determination of whether avoidance of the resource is possible
    - If avoidance is not possible, an assessment of appropriate mitigation and monitoring for project impacts on the resource
4. The BLM would work with the project applicant and other parties (if applicable) to develop a mitigation plan to address resource impacts.
5. Criteria or use restrictions would be identified to ensure that: (a) areas containing, or that are likely to contain vertebrate or noteworthy occurrences of invertebrate or plant fossils are identified and evaluated prior to authorizing surface-disturbing activities; (b) management recommendations are developed to promote the scientific, educational, and recreational uses of fossils as appropriate; and (c) threats to paleontological resources are identified and mitigated as appropriate.
6. As allowed under existing regulations, recreational collectors may collect and retain reasonable amounts of common invertebrate and plant fossils for personal, non-commercial use. Surface disturbance must be negligible, and collectors may only use non-power hand tools.
7. Collection, removal, excavation, or casting of vertebrate fossils, including dinosaur tracks, would be prohibited unless allowed under a scientific/research permit issued by the BLM Alaska State Office.
8. The stewardship, conservation, and appreciation of paleontological resources would be promoted through appropriate educational and public outreach programs.
9. In areas with high potential for significant fossil discovery:

- The BLM would educate on-the-ground personnel conducting fuel and vegetation treatments on the identification of significant fossil resources and require reporting of discoveries.
- All permit administrators would provide applicable regulatory and curation requirements related to paleontological resources to permittees as a condition of their permit. All BLM-permitted activities would be required to contact the BLM if they encounter vertebrate fossils or significant invertebrate fossils, and document and inform the BLM of the discovery.

10. In those cases where vertebrate or significant invertebrate fossils are reported to the BLM, the BLM would consider the following options:
    - Partnering with, or contracting, a qualified paleontologist to further assess or excavate the find
    - Collecting for BLM interpretive use in collaboration with the University of Alaska-Fairbanks Museum of the North
    - Collecting and sending the specimens to University of Alaska-Fairbanks Museum of the North for curation
    - Leaving the discovery as-is in its original location
    - In the event that a discovery is made at an active mining claim, the BLM and permitted operators would follow the regulations mandated in 43 CFR 3809.420(b)(8), as described in Section 2.7.8 for cultural resources.

Description of Paleontological Resource Actions by Alternative

Table 2-8 describes proposed Paleontological Resource actions by alternative. See Map 2-13, for additional information.

Table 2-8: Paleontological Resources Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
Protection Measures for Paleontological Resources Resources are managed on a case-by-case basis under the procedures of NEPA and of BLM IM 2009-11, *Attachment 1: Guidelines for Assessment and Mitigation of Potential Impacts to Paleontological Resources* (BLM 2008a).	**Protection Measures for Paleontological Resources** Mineral extraction (leasable, locatable, salable) permittees in areas with high likelihood of finding vertebrate fossils would require monitoring during initial excavation with periodic monitoring thereafter. Educate mineral extraction (leasable, locatable, salable) permittees on the identification of significant fossil resources and require development of a monitoring plan and reporting of discoveries. The education would clarify that paleontological resources are federal property, not the private property of those doing mineral extraction. If discoveries are made, then actions common to all described above would apply.	**Protection Measures for Paleontological Resources** Educate mineral extraction (leasable, locatable, salable) permittees on the identification of significant fossil resources and require development of a monitoring plan and reporting of discoveries. The education would clarify that paleontological resources are federal property, not the private property of those doing mineral extraction. If discoveries are made, then actions common to all described above would apply.	**Protection Measures for Paleontological Resources** Educate mineral extraction (leasable, locatable, salable) permittees on the identification of significant fossil resources and require reporting of discoveries. The education would clarify that paleontological resources are federal property, not the private property of those doing mineral extraction. If discoveries are made, then actions common to all described above would apply.

Alternative A	Alternative B	Alternative C	Alternative D
Resource Surveys and Discovery Resources are managed on a case-by-case basis under the procedures of NEPA and of BLM IM 2009-11 (BLM 2008a).	**Resource Surveys and Discovery** An on-the-ground survey prior to approval of surface-disturbing activities not associated with mineral extraction and/or monitoring by a qualified paleontologist during surface-disturbing activities would be required for all activities authorized within PFYC Class 4 and 5 formations. Apply as necessary to Class 3 and U units. If discoveries are made, then actions common to all described above would apply.	**Resource Surveys and Discovery** Same as Alternative B.	**Resource Surveys and Discovery** If paleontological resource discoveries are made, then actions common to all described above would apply.

2.7.10 Visual Resources Management

Actions Common to All Action Alternatives for Visual Resource Management (VRM)

1. Summer and Winter Travel Routes (excluding the INHT and connector routes, and the Unalakleet River designated WSR and non-designated segments): Apply VRM Class III for BLM-managed public lands within a 5-mile offset from centerline of existing Summer and Winter Travel Routes (for a total 10-mile-wide corridor): 2,176,440 acres or 16 percent of the planning area.
2. Coastal Areas: Apply VRM Class III for BLM-managed public lands 3 miles inland from coastlines: 47,659 acres or less than 1 percent of the planning area
3. Primary Rivers (Travel Routes): Apply VRM Class III for BLM-managed public lands within a 5-mile offset from the centerline of each side of the main river travel routes, for an approximate total 10-mile-wide corridor on the Yukon, Anvik, Unalakleet, and Kuskokwim Rivers: 1,609,479 acres or 12 percent of the planning area
4. Subsistence Use Areas
   - Apply VRM II for Subsistence Use Areas located in BLM-managed public lands ranked as scenic quality A: 373 acres or less than 1 percent of the planning area
   - Apply VRM III for Subsistence Use Areas located in BLM-managed public lands ranked as scenic quality B or C: 4,429,165 acres or 33 percent of the planning area
5. Two parcels near Takotna and McGrath: Apply VRM Class III for management of these parcels (9,900 acres or 0.07 percent of the planning area)

Description of Visual Resources Actions by Alternative

Table 2-9 describes proposed Visual Resources actions by alternative. See Maps 2-14 through 2-16, for additional information.

Table 2-9: Visual Resources Management Actions by Alternative (Table 2-9a and Table 2-9b)

Table 2-9a: Visual Resources Management Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
Communities *CYRMP (BLM 1986a)* Objective: Manage lands in conformance with visual quality standards to maintain scenic values. Mitigate visual impacts where surface disturbance occurs.	**Communities** Manage BLM-managed public lands within 5 miles of Communities within the planning area as VRM Class II: 99,980 acres	**Communities** Manage BLM-managed public lands within 5 miles of Communities within the planning area as VRM Class III: 99,980 acres	**Communities** Same as Alternative C.
INHT (Main Trail) *CYRMP (BLM 1986a)* Objective: In cooperation with the McGrath Resource Area, manage the INHT.	**INHT (Main Trail) and Iditarod-Anvik Connecting Trail** BLM-managed public lands along the INHT will be managed per the following VRM Classes: • VRM Class I (7.5-mile offset): 914,265 acres • VRM Class II (offset to 7.5-15 mile): 1,008,617 acres	**INHT (Main Trail) and Iditarod-Anvik Connecting Trail** BLM-managed public lands along the INHT will be managed per the following VRM Class: • VRM Class II (15-mile offset): 1,922,881 acres	**INHT (Main Trail)** BLM-managed public lands along the INHT will be managed per the following VRM Class: • VRM Class II (7.5-mile offset): 726,457 acres • VRM Class III (offset to 7.5-15 mile): 821,055 acres
INHT Connecting/Side Trails No current management direction was identified. Management direction is determined on a case-by-case basis.	**INHT Connecting/Side Trails** VRM Class II (15-mile offset), with the exception of the Iditarod-Anvik Connecting Trail, which would be managed as proposed for the INHT Main Trail (see above): 1,663,440 acres	**INHT Connecting/Side Trails** VRM Class III (15-mile offset) with the exception of the Iditarod-Anvik Connecting Trail, which would be managed as proposed for the INHT Main Trail (see above): 1,663,440 acres	**INHT Connecting/Side Trails** VRM Class III (15-mile offset): 1,730,773 acres
Old Woman Mountain No current management direction was identified. Management direction is determined on a case-by-case basis.	**Old Woman Mountain** Manage a 15-mile offset from the center point as VRM Class I: 447,809 acres	**Old Woman Mountain** Manage a 15-mile offset from the center point as VRM Class II: 447,809 acres	**Old Woman Mountain** Manage a 15-mile offset from the center point as VRM Class III: 447,809 acres
Unalakleet Wild River Corridor *CYRMP (BLM 1986a)* VR-1.1: Define the seen areas of the Unalakleet Wild River Corridor and manage wild sections of these areas as VRM Class I. Management will particularly address potential tributary crossings for transportation, ROWs, and utilities outside of the WSR corridor withdrawal.	**Unalakleet Wild River Corridor and Recommended Suitable WSR Segments** Manage as VRM Class I: • Inside the designated Unalakleet Wild River Corridor: 46,953 acres • 1/2-mile offset from the centerline of suitable river segments: 331,176 acres Manage as VRM Class II: • 15-mile offset from the centerline of the Unalakleet River (including below the designated WSR corridor): 976,185 acres • 15-mile offset from the centerline of suitable river segments: 4,396,984 acres	**Unalakleet Wild River Corridor** Manage the Unalakleet Wild River Corridor as VRM Class I: 46,953 acres Manage a 15-mile offset from the centerline of the river (where outside of designated WSR) as VRM Class II: 976,185 acres	**Unalakleet Wild River Corridor** Manage the Unalakleet Wild River Corridor as VRM Class I: 46,953 acres Manage a 15-mile offset from the centerline of the river (where outside of designated WSR) as VRM Class III: 976,185 acres

Alternative A	Alternative B	Alternative C	Alternative D
Pike Lake No current management direction was identified. Management direction is determined on a case-by-case basis.	**Pike Lake** Manage a 7.5-mile offset from the lake as VRM Class II: 137,695 acres Manage a 7.5- to 15-mile offset from the lake as VRM Class III: 207,176 acres	**Pike Lake** Manage a 5-mile offset from the lake as VRM Class II: 84,249 acres Manage a 5- to 15-mile offset from the lake as VRM Class III: 260,533 acres	**Pike Lake** No offset would be provided. Lands would be managed as VRM Class IV unless they overlap with a more stringent VRM Class.
National Wildlife Refuge Border No current management direction was identified. Management direction is determined on a case-by-case basis.	**National Wildlife Refuge Border** Manage a 5-mile offset from the border as VRM Class III: 1,627,637 acres	**National Wildlife Refuge Border** Manage a 2.5-mile offset from the border as VRM Class III: 810,188 acres	**National Wildlife Refuge Border** No offset would be provided around National Wildlife Refuges. Lands would be managed as VRM Class IV unless they overlap with more stringent VRM Class.
National Park/Wilderness/State Park Boundaries No current management direction was identified. Management direction is determined on a case-by-case basis.	**National Park/Wilderness/State Park Boundaries** Manage a 5-mile offset from the border as VRM Class II: 33,363 acres	**National Park/Wilderness/State Park Boundaries** Manage a 5-mile offset from the border as VRM Class II: 33,363 acres	**National Park/Wilderness/State Park Boundaries** No offset would be provided around National Parks/ Wilderness/State Park boundaries. Lands would be managed as VRM Class IV unless they overlap with more stringent VRM Class.
Community of Flat No current management direction was identified. Management direction is determined on a case-by-case basis.	**Community of Flat** Manage a 15-mile offset from Community center as VRM Class II: 122,201 acres	**Community of Flat** Manage a 15-mile offset from Community center as VRM Class III: 122,201 acres	**Community of Flat** No offset would be provided. Lands would be managed as VRM Class IV unless they overlap with a more stringent VRM Class.
Lands Managed for Wilderness Characteristics as a Priority No current management direction was identified. Management direction is determined on a case-by-case basis.	**Lands Managed for Wilderness Characteristics as a Priority** Manage as VRM Class II: 277,489 acres	**Lands Managed for Wilderness Characteristics as a Priority** No acres managed for wilderness characteristics as a priority	**Lands Managed for Wilderness Characteristics as a Priority** No acres managed for wilderness characteristics as a priority

Alternative A	Alternative B	Alternative C	Alternative D
ACECs No current management direction was identified. Management direction is determined on a case-by-case basis	**ACECs** VRM Class II for the ACECs relevant and important for cultural resources (1,753,307 acres, or 13.0% of the planning area): • Unalakleet River watershed: 733,995 acres • Sheefish Spawning Area: 696,902 acres • Anvik Traditional Trapping Area: 21,366 acres • Tagagawik River: 301,044 acres VRM Class III for all other ACECs relevant and important for fisheries and/or related watershed resources (2,160,064 acres, or 16.0% of the planning area): • Kateel River ACEC: 692,659 acres • Anvik River Watershed ACEC: 248,872 acres • Inglutalik ACEC: 70,891 acres • Ungalik River ACEC: 113,455 acres • Gisasa River ACEC: 278,247 acres • Shaktoolik River ACEC: 191,725 acres • Nulato River ACEC: 344,183 acres • Swift River Whitefish Spawning ACEC: 220,032 acres See Appendix J for Proposed Special Management for ACECs	**ACECs** No ACECs are proposed under Alternative C. VRM Class II for areas with important cultural resource values (1,219,211 acres, or 9.1% of the planning area): VRM Class III for areas with important fisheries and/or related watershed resources (1,825,535 acres, or 13.6% of the planning area):	**ACECs** No ACECs proposed under Alternative D (0 acres)

Table 2-9b: Visual Resources Management Actions by Alternative – Total VRM Class Acreages

Alternative A	Alternative B	Alternative C	Alternative D
VRM Class I *CYRMP (BLM 1986a)* VR-1.1: Define the seen areas of the Unalakleet Wild River Corridor and manage wild sections of these areas as VRM Class I. Management will particularly address potential tributary crossings for transportation, ROWs, and utilities outside of the WSR corridor withdrawal.	**VRM Class I** 1,335,771 acres, or 10% of the planning area	**VRM Class I** 46,953 acres, or <1% of the planning area	**VRM Class I** 46,953 acres, or <1% of the planning area
VRM Class II None specified under current management plans	**VRM Class II** 6,490,087 acres, or 48% of the planning area	**VRM Class II** 2,766,229 acres, or 21% of the planning area	**VRM Class II** 679,553 acres, or 5% of the planning area
VRM Class III None specified under current management plans	**VRM Class III** 3,516,066 acres, or 26% of the planning area	**VRM Class III** 6,095,778 acres, or 45% of the planning area	**VRM Class III** 6,140,235 acres, or 46% of the planning area

Alternative A	Alternative B	Alternative C	Alternative D
VRM Class IV None specified under current management plans	**VRM Class IV** 2,123,971 acres, or 16% of the planning area	**VRM Class IV** 4,556,934 acres, or 34% of the planning area	**VRM Class IV** 6,599,152 acres, or 49% of the planning area

2.7.11 Lands with Wilderness Characteristics

Actions Common to All Action Alternatives for Lands with Wilderness Characteristics

1. An inventory of lands with wilderness characteristics will be maintained across the planning area.

Description of Lands with Wilderness Characteristics Management Actions by Alternative

Table 2-10a describes proposed Lands with Wilderness Characteristics management actions by alternative. Table 2-10b includes management actions for lands managed to protect wilderness characteristics as a priority. See Maps 2-17 through 2-19, for additional information.

Table 2-10a: Lands with Wilderness Characteristics Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
Wilderness characteristics not addressed *SWMFP (BLM 1981)* **Goals** Maintain the area's existing natural conditions. Maintain opportunities for solitude or primitive and unconfined types of recreation. *CYRMP (BLM 1986a):* No references to wilderness resources identified in this planning document	Managed to protect wilderness characteristics as a priority over other resources values and multiple uses: • 277,489 acres (2%)[1] of BLM-managed lands in planning area) • See Section 2.7.16, Table 2-14 (ANCSA 17(d)(1) withdrawals) for proposed mineral withdrawals for lands managed to protect wilderness characteristics as a priority. Managed to emphasize other resource values and multiple uses while applying management restrictions to reduce impacts on wilderness characteristics: • 12,040,490 acres (89%)[1] Managed to emphasize other resource values and multiple uses as a priority over protecting wilderness characteristics: • 1,148,024 acres (9%)[1]	Managed to protect wilderness characteristics as a priority over other resources values and multiple uses: • 0 acres (0%)[1] Managed to emphasize other resource values and multiple uses while applying management restrictions to reduce impacts on wilderness characteristics: • 8,105,979 acres (60%)[1] Managed to emphasize other resource values and multiple uses as a priority over protecting wilderness characteristics: • 5,360,024 acres (40%)[1]	Managed to protect wilderness characteristics as a priority over other resources values and multiple uses: • 0 acres (0%)[1] Managed to emphasize other resource values and multiple uses while applying management restrictions to reduce impacts on wilderness characteristics: • 0 acres (0%)[1] Managed to emphasize other resource values and multiple uses as a priority over protecting wilderness characteristics: • 13,465,894 acres (100%)[1]

Notes:
1) Percentage based on all BLM-managed land in the planning area.

Table 2-10b: Management Actions for Lands Managed to Protect Wilderness Characteristics as a Priority under Alternative B

Alternative B
1. Manage areas allocated to protect wilderness characteristics as a priority as VRM Class II.
2. Preserve all lands to maintain their wilderness characteristics and enhance opportunities for solitude and primitive and unconfined recreation present in these areas.
3. Motorboat use allowed for designated wilderness areas as provided for under ANILCA Sections 811 (subsistence) and 1110 (general public use) would also be allowed for lands managed for wilderness characteristics as a priority.
4. Airplane landings and takeoffs allowed, as provided for under ANILCA Section 1110 (general public use) for designated Wilderness Areas would also be allowed for lands managed for wilderness characteristics as a priority. [Restrictions on landing areas should not be attributed to ANILCA allowances.]
5. Limit summer OHV subsistence use to all-terrain vehicles (ATVs) on existing routes only, with the exception of subsistence game retrieval. During travel management planning, close and rehabilitate routes that substantially reduce the naturalness of these areas.
6. Allow, consistent with ANILCA, subsistence and casual cross-country winter snowmobile use during periods of adequate snow cover or frozen river conditions (as defined in Appendix B).
7. The BLM would issue SRPs on a case-by-case basis only for activities which are compatible with the goals and objectives of the lands managed for wilderness characteristics. This would include activities that provide opportunities for solitude or primitive and unconfined types of recreation.
8. Facility construction would be limited to those built in a manner consistent with long-term management and preservation of lands with wilderness characteristics. Construction techniques would give first consideration to using native materials found within the wilderness. A project review would occur to determine of the necessity of using any non-natural materials for trail construction.
9. Fire management actions taken in areas managed for wilderness characteristics would be conducted to protect life and safety, to meet natural and cultural resource objectives.
10. Fire in lands managed for wilderness characteristics would be managed consistent with BLM Manual 6340, *Management of Designated Wilderness Areas (Public)* (BLM 2012b) or subsequent guidance.
11. Retain all lands managed for lands with wilderness characteristics as a priority in BLM management.
12. Prohibit cutting of live trees for both commercial and personal-use. Gathering dead and/or fallen wood for personal use would be allowed.
13. Withdraw all allocated lands from locatable mineral entry, subject to valid existing rights.
14. NSO to leasable development with no exceptions, waivers, or modifications.
15. Any CSU, national recreation area, or national conservation area in the State of Alaska is subject to Title XI of ANILCA, and Section 1102(4)(B) defines the types of transportation or utility systems that may be approved or disapproved. Areas outside the CSU, national recreation area, or national conservation area are not subject to ANILCA provisions in Title XI.
16. Close the areas to salable mineral permits and free use mineral material development.

2.7.12 Forestry and Woodland Products

Actions Common to All Action Alternatives for Forestry and Woodland Products

1. All commercial harvesting would require a permit for any forest products harvested with the intent to sell (e.g., house logs, saw logs, Christmas trees, berries, mushrooms).
2. All harvest activities that include surface disturbance would require surveys for sensitive resources that could be affected by the surface disturbance. The determination of what surveys would be required would depend on the location and type of disturbance and would be identified by the BLM at the project-specific implementation level.
3. In areas where timber harvest permits are approved, excluding pre-1955 mining claims, the following would be required:
    - Unless authorized by AO, harvest would be winter harvest only to minimize disturbance to soils and ground vegetation.
    - Skid trails and roads constructed for the timber sale would be recontoured and restored to original condition, unless authorized by the AO upon termination of the timber sale activity.

- All pre-existing routes and trails within the timber harvest area would be left open and in a passable condition during and after harvest operations.
- Dispersed slash and unused tree portions would be no longer than 18 inches in length.
- Maximum stump height would be 8 inches, unless otherwise specified in the permit.
- Harvest would follow State Forest Practices Act BMPs and AS 41.17.115, Riparian Standards Matrix: Summary of Regulations and Statutes.

4. Cutting or otherwise disturbing trees used for trapping would be prohibited.
5. Harvest of dead or downed wood for immediate use in the immediate vicinity such as recreational uses (camping on all BLM-managed lands throughout the planning area) would be allowed without a permit.
6. For BLM-permitted activities, incorporate appropriate levels and types of cultural sensitivity training for people unfamiliar with rural Alaska life and culture.
7. Encourage BLM-permitted operators to use local hire to the extent possible, which would include the commitment to use a local work force as a criterion in the allocation of permits. Commitment to use local work force would be judged by the operator's willingness to train local staff and, to the extent possible, develop work schedules to accommodate subsistence activities.

Description of Forestry and Woodland Products Actions by Alternative

Table 2-11 describes proposed Forestry and Woodland Products actions by alternative. See Maps 2-20 through 2-23, for additional information.

Table 2-11: Forestry and Woodland Products Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
Permitted Commercial Woodland Harvesting Areas *SWMFP (BLM 1981)* F-1.1: Provide for sustained yields of forest resources for use as firewood, houselogs, poles, and other forest products. *Unalakleet National Wild River Management Plan (BLM 1983)* The only subsistence use, which may require restrictions is house log and fuel wood harvesting, which will be regulated through permits issued by the BLM. *CYRMP (BLM 1986a)* All forest lands within this planning area are open to subsistence and commercial timber harvest except crucial wildlife habitat and the eight RNAs. Timber may be harvested on subsistence study/exchange withdrawals under a subsistence or personal use type permit. No commercial sales will be permitted on these withdrawals. Data on forest lands will be accumulated and maintained until identified needs require a more intensive forest inventory.	**Permitted Commercial Woodland Harvest Areas** Timber sale operations would not be allowed within the 100-year floodplain of perennial rivers and streams. All types of commercial woodland harvest would be permitted by the BLM on all BLM-managed public lands described below unless they are within the Unalakleet Wild River Corridor, ACECs, lands managed for wilderness characteristics as a priority, the INHT NTMC, or 100-year floodplain within a HVW. • Areas within 15 miles of a river are open for commercial woodland harvest. • Areas within 25 miles of a community are open for commercial woodland harvest. • Burned areas outside of the areas above are open for commercial woodland harvest. Permits would be granted outside these areas on a case-by-case basis dependent on resource concerns.	**Permitted Commercial Woodland Harvest Areas** Timber sale operations would not be allowed within the 100-year floodplain of perennial rivers and streams. All types of commercial woodland harvest would be permitted by the BLM on all BLM-managed public lands described below unless they are within the Unalakleet Wild River Corridor. • Areas within 15 miles of a river are open for commercial woodland harvest. • Areas within 25 miles of a community are open for commercial woodland harvest. • Burned areas outside of the areas above are open for commercial woodland harvest. Permits would be granted on a case-by-case basis for HVWs, areas identified as important for cultural or fish resources, and other areas outside of those listed in the bullets above.	**Permitted Commercial Woodland Harvest Areas** Commercial woodland harvest would be permitted by the BLM on all BLM-managed public lands described below. • Areas within 15 miles of a river are open for commercial woodland harvest. • Areas within 25 miles of a community are open for commercial woodland harvest. • Burned areas outside of the areas above are open for commercial woodland harvest. Permits would be granted outside these areas on a case-by-case basis dependent on resource concerns.

Alternative A	Alternative B	Alternative C	Alternative D
Personal Use and Subsistence Woodland Harvest Areas F-1.1: Permits for the harvest of house logs, poles, and firewood are issued on a case-by-case basis.	**Personal Use and Subsistence Woodland Harvest Areas** House log harvesting would not be allowed within the riparian zone of perennial streams. Subsistence use and personal use gathering of forest firewood more than that required for incidental use for camping and forestry products would require a permit (e.g., by instituting a pilot project to hire a local in a targeted area to issues permits and collect use information and/or include maps or questions in local subsistence surveys). • All areas within 15 miles of a river are open for subsistence, and personal use woodland harvest. • All areas within 25 miles of a community are open for subsistence, and personal use woodland harvest. • All burned areas outside of the areas above are open for subsistence, and personal use woodland harvest. Permits would be granted outside these areas on a case-by-case basis dependent on resource concerns. These permits would include required stipulations to minimize harvesting impacts.	**Personal Use and Subsistence Woodland Harvest Areas** House log harvesting would not be allowed within the riparian zone of perennial streams. Subsistence use gathering of forest firewood and forestry products would not require a permit. Personal use gathering of forest firewood of more than 10 cords of firewood per household per year and gathering forestry products would require a permit. • All areas within 15 miles of a river are open for subsistence, and personal use woodland harvest. • All areas within 25 miles of a community are open for subsistence, and personal use woodland harvest. • All burned areas outside of the areas above are open for subsistence, and personal use woodland harvest. Permits would be granted outside these areas on a case-by-case basis dependent on resource concerns.	**Personal Use and Subsistence Woodland Harvest Areas** Subsistence use gathering of forest firewood and forestry products and personal use gathering of forest firewood would not require a permit. Personal use gathering of forestry products would require a permit. Unless otherwise restricted by other resource management actions in this RMP, all of the planning area would be available for personal use and subsistence woodland harvest.
Woodland Harvest in HVWs No current management direction identified. Management direction is determined on a case-by-case basis.	**Woodland Harvest in HVWs** The 100-year floodplain within HVWs would be closed to commercial woodland harvest. Non-subsistence house log harvest prohibited.	**Woodland Harvest in HVWs** The BLM would monitor watershed health and determine on a case-by-case basis if it would issue commercial woodland harvest or timber harvest permits in HVWs.	**Woodland Harvest in HVWs** The BLM would monitor watershed health and determine on a case-by-case basis if it would issue commercial woodland harvest or timber harvest permits in HVWs.
Woodland Harvest in the INHT NTMC No current management direction identified. Management direction is determined on a case-by-case basis.	**Woodland Harvest in the INHT NTMC** The INHT NTMC is closed to commercial woodland harvest.	**Woodland Harvest in the INHT NTMC** Commercial woodland harvest is permitted in the INHT NTMC on a case-by-case basis where such activities do not substantially interfere with the nature and purpose of the INHT.	**Woodland Harvest in the INHT NTMC** The INHT NTMC is open to commercial woodland harvest with national trail impact avoidance and/or minimization as needed.
Woodland Harvest in ACECs No current management direction identified. Management direction is determined on a case-by-case basis.	**Woodland Harvest in ACECs** ACECs would be closed to commercial woodland harvest and non-subsistence house log harvest prohibited	**Woodland Harvest in ACECs** N/A	**Woodland Harvest in ACECs** N/A
Woodland Harvest in Areas Managed for LWC as a Priority N/A	**Woodland Harvest in Areas Managed for LWC as a Priority** No permitted commercial or personal-use wood-cutting. Wood gathering for personal use would be allowed.	**Woodland Harvest in Areas Managed for LWC as a Priority** N/A	**Woodland Harvest in Areas Managed for LWC as a Priority** N/A

Alternative A	Alternative B	Alternative C	Alternative D
Forestry BMPs for Casual Use *SWMFP (BLM 1981)* F-1.1: Prioritizes providing for the use of forestry products in settlement areas. Permits for house logs, poles, and firewood issued on a case-by-case basis. The SWMFP does not specifically address subsistence use of forestry. The CYRMP (BLM 1986a) permits subsistence and commercial forestry on all lands except for crucial wildlife habitat and eight identified RNAs.	**Forestry BMPs for Commercial Activities (Does Not Apply to Subsistence Use)** Timber sale operations would be confined to time periods when the combination of snow and frost depth allow access and skidding without long-term disturbance to underlying soils. Timber sale operations would not be allowed within the 100-year floodplain of perennial rivers and streams. House log harvesting would not be allowed within the riparian zone of perennial streams.	**Forestry BMPs for Commercial Activities (Does Not Apply to Subsistence Use)** Locations and timing of permitted timber sales would be determined on a case-by-case basis based on soil moisture content, soil erosivity, and micro-topography (e.g., steepness of slopes, presence of hummocky ground). Timber sale operations would be allowed during thaw conditions with presence of stable soils. House log harvesting would not be allowed within the riparian zone of perennial streams.	**Forestry BMPs for Commercial Activities (Does Not Apply to Subsistence Use)** Same as Alternative C, with the exception that house log harvesting would be allowed in the riparian zone of perennial streams.

2.7.13 Reindeer Grazing

Actions Common to All Action Alternatives for Reindeer Grazing

1. Permittees must demonstrate the ability to gather, move, or contain their herds as necessary to avoid commingling with caribou herds and to address rangeland health standards.
2. Surface-disturbing rangeland improvements would be subject to applicable site surveys.
3. Permitted grazing would be subject to State of Alaska animal health, disease, import/export, slaughtering, and processing requirements (ADEC, Division of Environmental Health).
4. Limitations in OHV TMAs (as described in Section 2.7.18, Travel and Transportation Management) would apply to permitted grazing areas, unless otherwise authorized by the BLM AO. Specific allowances or requirements regarding OHV use by grazing permittees would be authorized as part of their grazing permit.
5. The BLM would cooperate with the National Resources Conservation Service (NRCS) and the permittee in conducting rangeland health assessments to determine compliance with Alaska Land Health Standards.
6. If necessary, a notice of non-compliance would be issued identifying corrective actions that must be made within 1 year of notification. A second notice of non-compliance would be issued if a permittee fails to comply within 1 year of the first notice. If non-compliance continues after the second year, the case would be referred to law enforcement for trespass.
7. Supplemental feeding of livestock may be authorized. Only certified weed seed–free feed would be allowed.
8. The BLM would work cooperatively with the Kawerak, Inc. Natural Resources Division's Reindeer Herders Association, the University of Alaska-Fairbanks Reindeer Research Program, and the NRCS to support operators' ability to maintain rangeland health.

9. Range improvements including, but not limited to, line cabins, corrals, and water improvements would not be allowed in areas managed as NSO for permanent structures associated with surface-disturbing activities.

Description of Reindeer Grazing Actions by Alternative

Table 2-12 describes proposed Reindeer Grazing actions by alternative. See Maps 2-24 through 2-26, for additional information.

Table 2-12: Reindeer Grazing Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
Areas Open/Closed to Grazing *SWMFP (BLM 1981)* Goals Provide range for seasonal grazing of domestic livestock on a local level where public demand warrants and where compatible with other resources. BLM policy has been to provide grazing leases for domestic livestock including reindeer and musk oxen where feasible. Where range is available and a need exists for seasonal grazing, this policy may be maintained.	**Areas Open/Closed to Grazing** All BLM-managed public lands within the planning area would be closed to grazing.	**Areas Open/Closed to Grazing** Grazing would only be permitted in areas where ecological conditions could support that grazing. This would be determined at the site-specific level and analyzed through implementation-level NEPA. Areas with important fisheries and watershed values in the Nulato River watershed, Unalakleet Wild River Corridor, and INHT NTMC would be closed to grazing. HVWs would be closed to grazing until grazing standards and guidelines for riparian vegetation health are developed; then, grazing in HVWs would be determined on a case-by-case basis. Grazing permits would be issued on a case-by-case basis in known caribou habitat. New applications submitted under the 1937 Reindeer Industry Act and the Alaska Livestock Grazing Act of 1927 would be considered on a case-by-case basis. New applications submitted under the 1937 Reindeer Industry Act would be considered if the applicant could (1) provide a detailed Grazing Management Plan that includes management objectives and how the applicant would ensure separation between domestic and wild animals and (2) conduct all land health monitoring activities as determined appropriate by the BLM AO.	**Areas Open/Closed to Grazing** No areas would be closed to grazing. New applications submitted under the 1937 Reindeer Industry Act and the Alaska Livestock Grazing Act of 1927 would be considered in the planning area on a case-by-case basis. Grazing would only be permitted in areas where ecological conditions could support that grazing. This would be determined at the site-specific level and analyzed through implementation-level NEPA. Grazing would be allowed in HVWs, but only where ecological conditions could support that grazing. Grazing would be permitted in the Unalakleet Wild River Corridor and the INHT NTMC only if it is determined that the proposed permitted grazing is consistent with maintenance of the outstandingly remarkable values (ORVs) for which the Unalakleet Wild River Corridor was designated and the historical and cultural setting of the INHT NTMC is maintained. Grazing permits would be authorized on a case-by-case basis by the AO.
Grazing Management Plans Current management plans do not specify requirement for Grazing Management Plan	**Grazing Management Plans** All BLM-managed public lands within the planning area would be closed to grazing.	**Grazing Management Plans** Proposed grazing operations must submit a grazing permit application that includes a detailed Grazing Management Plan.	**Grazing Management Plans** No requirement for a Grazing Management Plan or a Range Conservation Plan when applying for a grazing permit.

Alternative A	Alternative B	Alternative C	Alternative D
Fees and Permits Current management plans do not specify permit fees or grazing terms.	**Fees and Permits** All BLM-managed public lands within the planning area would be closed to grazing.	**Fees and Permits** New applications submitted under the 1937 Reindeer Industry Act would be considered if the applicant could (1) provide a detailed Grazing Management Plan which includes management objectives and how the applicant would ensure separation between domestic and wild animals and (2) conduct all land health monitoring activities as determined appropriate by the BLM AO. Provide assurance that their Business Plan has considered the markets and cost of operations for their proposed operation. Herd crossing permit applications would be addressed per direction in 43 CFR 4300.80 for proposals to move livestock across BLM-managed public lands that are currently not administered under an existing grazing permit. Permitted grazing would require satellite collars/VHF tracking devices on at least one animal (for herds of up to 75) and at least collars (for herds larger than 75). These data would be immediately available to the BLM upon request, and BLM would be provided with annual reports showing location(s) of the herd throughout the year.	**Fees and Permits** New applications submitted under the 1937 Reindeer Industry Act and the Alaska Livestock Grazing Act of 1927 would be considered in the planning area on a case-by-case basis. Grazing fees and permit terms would be determined during promulgation of regulations to guide the implementation of the Alaska Livestock Grazing Act of 1927. Herd crossing permit applications would be addressed as per direction in 43 CFR 4300.80 for proposals to move livestock across BLM-managed public lands that are currently not administered under an existing grazing permit.
Utilization No current management direction for grazing classes was identified. Management direction is determined on a case-by-case basis.	**Utilization** All BLM-managed public lands within the planning area would be closed to grazing.	**Utilization Monitoring** Grazing operations would be administered to a maximum utilization threshold of Grazed Class 4 (50–75% of primary forage species utilized). This utilization would be revised if scientific research indicates a different level of utilization is necessary to maintain rangeland health. The Alaska Grazed Class Method (AGCM) would be used for monitoring permitted reindeer herds to determine utilization and lichen abundance. The BLM would monitor range utilization and herd location(s) every 3 years, at a minimum, or more frequently if deemed necessary for permit compliance.	**Utilization Monitoring** Grazing operations would be administered to a maximum utilization threshold of Grazed Class 5 (75–100% of primary forage species utilized). This utilization would be revised if scientific research indicates a different level of utilization is necessary to maintain rangeland health. The AGCM would be used for monitoring permitted reindeer herds to determine utilization and lichen abundance. The BLM would monitor range utilization when deemed necessary for permit compliance.

2.7.14 Locatable and Salable Minerals

Lands currently selected by the State of Alaska and Native corporations are segregated from locatable mineral entry and location and from mineral leasing to avoid potential encumbrances on selected lands prior to conveyance. State-selected and ANCSA Native corporation-selected lands comprise approximately 2.6 million acres and 144,300 acres, respectively, out of the 13.5 million acres currently managed by the BLM. Therefore, decisions made within this land use planning effort to "open" areas for mineral exploration or development by revoking would not go into effect until the selections have either been relinquished by the State or ANCSA applicant, or rejected by the BLM once the applicant's entitlement is fulfilled, and thus the lands are retained in long-term federal ownership.

Actions Common to All Action Alternatives for Locatable and Salable Minerals

1. Manage mining-related activities in accordance with 43 CFR 3809, 43 CFR 3715, and 43 CFR 3600, as appropriate.
2. All Plan-level and mineral material mining operations shall submit a nonnative, invasive plant species inventory, monitoring, and control plan in accordance with the BLM Alaska NNIS management policy.
3. In locations where topography and water volume allow, Plan-level placer mining operations are required to be a zero-discharge facility unless authorized otherwise by the BLM due to site-specific considerations or restraints that would make zero discharge economically or technically infeasible.
4. All Plan-level mining operations will submit to the BLM office a courtesy copy of the required water quality annual report required by the APDES permit (mainly turbidity above and below discharge point) (43 CFR 3809.401).
5. All new and existing mineral material and Notice- and Plan-level placer operations shall designate a specific GPS point, clearly marked on the ground, from which photos of the operation will be taken and submitted to the BLM in the end-of-year report for reclamation. Operations that include stream reclamation would submit photos upstream and downstream of both ends of the reclaimed channel. These photos will be taken in the spring and fall of each mining season.
6. All lode/hard rock tailings ponds that retain deleterious material shall be double-lined and incorporate sensors and best management/industry practices and standards, including backup/alternative water treatment systems that would allow controlled discharge of the treated effluent to avoid overtopping or uncontrolled release of the material/water to the environment.
7. All tailings dams that meet the State of Alaska Dam Safety control criteria shall submit third-party engineering stability/measurement report to the BLM by September 30 every other year.
8. All mining operations will comply with the following soils and vegetation reclamation requirements

    - Mine operators must remove, segregate, and preserve topsoil or other suitable growth medium for reclamation. The topsoil or growth medium will be applied after reshaping of the disturbed area has been completed and will be used to promote and sustain revegetation and, subsequently, to minimize erosion. Stockpiling activities must be implemented to preserve soil viability and promote concurrent reclamation. Where economically, technically, and logistically feasible, mining operations must directly transport topsoil from its original location to the point of reclamation without intermediate stockpiling.
    - Mine operators must revegetate disturbed lands by establishing a stable and long-lasting vegetative cover that is self-sustaining and, considering successional stages, will eventually result in cover that is comparable in both diversity and density to pre-existing natural vegetation of the surrounding area (pre-mining site conditions must be measured and recorded as part of the baseline data measurement using BMPs for quantifiably measuring soil depth and vegetation density). Reclamation and revegetation efforts must demonstrate they are trending toward comparable pre-existing natural conditions that will provide for the rehabilitation of wildlife habitat. The BLM may develop site-specific revegetation criteria based on site-specific analysis as part of the baseline condition measurements.

9. Mine operators should avoid conducting mining activities in wetlands or riparian areas where possible and minimize impacts on wetlands and riparian areas that operations cannot avoid. Mine operators should reclaim disturbed stream channels and wetlands to a properly functioning condition. Technology and practices must be used such that, at the completion of reclamation, the affected stream segment will be, at a minimum, geomorphically stable with adequate riparian floodplain vegetation to dissipate flood energy (BLM 1969). This stability would be as evidenced by metrics such as lateral stability, bedform diversity, and floodplain connectivity within the functioning range. At the completion of reclamation riparian vegetation complexity measures should be minimally functioning with an upward trend. At the completion of reclamation, floodplain conditions should be able to withstand moderate flood discharge events (5- to 10-year flood event) through implementation of features such as, natural channel design, proper floodplain grading, vegetation mats or transplants, integrated rock and organic debris, and seeding (if appropriate).
10. Notice- and Plan-level operations that wish to use the State of Alaska Mining Reclamation Bond Pool must submit a reclamation cost estimate as described in 43 CFR 3809.500 if they propose any of the following activities on BLM-managed lands: operations proposing to mine in or within 100 feet of a perennial stream channel; operations on uplands with slopes greater than 33% or with the potential for significant slope failure related to mining activities; operations at a site where demobilization can only be completed by air or during frozen conditions (winter months); operators with greater than 25 acres of unreclaimed disturbance; or, operations that have an unresolved noncompliance order at the time of bond payment or operators that have a history of noncompliance with BLM regulations.
11. Use and Occupancy Qualifications for Notice-level Operations within the planning area
    - Criteria for Use and Occupancy for Notice-level Operations:
        - The applicant must demonstrate the need for the cabin or structure related to the level of mining proposed.
        - The applicant must use minimal occupancy facilities.
    - Structures/Conditions – For Notice level exploration activities (5 acres or less), all the following are applicable unless the AO determines permanent structures would be allowed based on site-specific analysis:
        - No permanent structures shall be authorized.
        - No grading to accommodate occupancy structures is allowed.
        - No excavation for footings or placement of buried structures is allowed.
        - Related pit privies must be constructed in accordance with State of Alaska regulations. If a privy cannot meet Alaska regulations, all human waste must be carried out.
        - Protective matting required on top of sensitive lichen-rich habitat to protect those areas from pedestrian and motorized traffic. The BLM will make the determination on when this is necessary based on project-specific site clearances.
    - Structures Allowed According to Temporary Mining Activities

- For mining activities that occur for less than 3 months duration, approved occupancy facilities are temporary and removable tents (no tent platform). Tents must be dismantled and removed from the site at the end of the use season.
- For mining activities that occur between 3 and 8 months in duration, a temporary tent with platform may be allowed. Tents and platforms must be dismantled and removed from the site at the end of the use season.
- No permanent structures (as defined in Appendix B) are allowed in riparian areas.

12. For BLM-permitted activities, incorporate appropriate levels and types of cultural sensitivity training for people unfamiliar with rural Alaska life and culture.
13. Encourage BLM-permitted operators to use local hire to the extent possible, which would include the commitment to use a local work force as a criterion in the allocation of permits. Commitment to use local work force would be judged by the operator's willingness to train local staff and, to the extent possible, develop work schedules to accommodate subsistence activities.

Description of Locatable and Salable Mineral Actions by Alternative

Table 2-13 describes proposed Locatable and Salable Mineral Actions by alternative. See Maps 2-27 through 2-31, for additional information.

Table 2-13: Locatable and Salable Mineral Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
Locatable Minerals All lands in the planning area would be managed as undesignated. *CYRMP (BLM 1986a)* Prescriptions: Maintain the existing water quality of the Kalta and Nulato watersheds through closure of all public lands within these watersheds to operation of the 1872 mining law. There are approximately 460,000 acres of public land included in this prescription. Protect, through withdrawal, 20,480 acres of crucial peregrine falcon habitat from mineral entry under the 1872 Mining Law. Maintain the relatively undisturbed resource values on 43,010 acres of land, by withdrawal from all forms of appropriation including mineral location under the 1872 Mining Law and the Mineral Leasing Act of 1920 as amended and supplemented. Eight areas have been identified in this plan for designation as RNAs.	**Locatable Minerals** See the following sections for locatable mineral withdrawals under Alternative B: Section 2.7.3, Table 2-4, Water Resources and Fisheries Actions by Alternative Section 2.7.5, Table 2-6, Wildlife Actions by Alternative Section 2.7.11, Table 2-10, Lands with Wilderness Characteristics Actions by Alternative Section 2.7.19, Table 2-18, ACECs Actions by Alternative and Appendix J Section 2.7.20, Table 2-19, National Trails Actions by Alternative Section 2.7.21, Table 2-20, WSRs Actions by Alternative Map 2-27 shows Alternative B locatable mineral decisions.	**Locatable Minerals** See the following sections for locatable mineral withdrawals under Alternative C: Section 2.7.5, Table 2-6, Wildlife Actions by Alternative Section 2.7.21, Table 2-20, WSRs Actions by Alternative. Map 2-28 shows Alternative C locatable mineral decisions.	**Locatable Minerals** All lands open for mineral entry, excluding existing withdrawals or any proposed withdrawals that are common to all alternatives. See Section 2.7.21, Wild and Scenic Rivers. Map 2-28 shows Alternative D locatable mineral decisions.

Alternative A	Alternative B	Alternative C	Alternative D
Saleable Minerals No current management direction was identified. Management direction is determined on a case-by-case basis.	**Saleable Minerals** All areas proposed for withdrawal from locatable development under this alternative would also be closed to salable development. Salable development reclamation would comply with soil and vegetation reclamation and riparian and stream disturbance/ reclamation and fisheries rehabilitation requirements described under Actions Common to All Action Alternatives for Locatable and Salable Minerals. Map 2-29 shows Alternative B salable mineral decisions.	**Saleable Minerals** See the following sections for areas closed to salable minerals under Alternative C: Section 2.7.3, Table 2-4, Water Resources and Fisheries Actions by Alternative Section 2.7.5, Table 2-6, Wildlife Actions by Alternative Section 2.7.21, Table 2-20, WSRs Actions by Alternative Map 2-30 shows Alternative C salable mineral decisions.	**Saleable Minerals** See the following sections for areas closed to salable minerals under Alternative D: Section 2.7.5, Table 2-6, Wildlife Actions by Alternative Section 2.7.21, Table 2-20, WSRs Actions by Alternative Map 2-31 shows Alternative D salable mineral decisions.

2.7.15 Leasable Minerals

Actions Common to All Action Alternatives for Leasable Minerals

Lands currently selected by the State of Alaska and Native corporations are segregated from locatable mineral entry and location and from mineral leasing to avoid potential encumbrances on selected lands prior to conveyance. State-selected and ANCSA Native corporation-selected lands comprise approximately 2.6 million acres and 144,300 acres, respectively, out of the 13.5 million acres currently managed by the BLM. Therefore, decisions made within this land use planning effort to "open" areas for mineral exploration or development by revoking would not go into effect until the selections have either been relinquished by the State or ANCSA applicant, or rejected by the BLM once the applicant's entitlement is fulfilled, and thus the lands are retained in long-term federal ownership.

Requirements prescribed for federal mineral development in split-estate situations would only apply to the development of the federal minerals. These requirements would not dictate surface management.

1. Oil and Gas
    - As described in BLM's Handbook H-1624-1, *Planning for Fluid Mineral Resources* (BLM 2018c), federal oil and gas resources (including coalbed natural gas) fall into one of four categories that become increasingly restrictive:
        - Open Subject to Standard Lease Terms and Conditions: These are areas where it has been determined through the planning process that the standard terms and conditions of the lease form are sufficient to protect other land uses or resource values. In these areas, the Fluid Mineral Leasing Stipulations and Best Management Practices and Standard Operating Procedures (SOPs; Appendix K) would also apply unless specifically excluded under a particular alternative.
        - Open Subject to Special Stipulations: These are areas where it has been determined that moderately restrictive lease stipulations may be required to mitigate impacts to other land uses or resource values. These leases frequently involve timing limitations such

as restricting construction activities in designated big game habitats, or Controlled Surface Use stipulations such as creating a buffer zone around an essential resource.

- Open Subject to NSO: These are areas where it has been determined through the planning process that highly restrictive lease stipulations are necessary to protect resources. These leases may prohibit the construction of well production and support facilities. These areas could be subject to directional drilling, if technologically and economically feasible.
- Closed to Leasing: These are areas where it has been determined that other land uses or resource values cannot be adequately protected, and appropriate protection can be ensured only by closing the land to leasing through either statutory or administrative requirements.

- Implementation Decisions
  - COAs for Applications for Permit to Drill would allow necessary impacts in order for development to be technically feasible or economically viable.
  - Exceptions to lease stipulations and COAs would be allowed when site-specific analyses showed impacts to sensitive resources were within acceptable limits.
  - Well spacing requirements for oil and gas resource protection would defer to the Alaska Oil and Gas Conservation Commission guidance with consideration for surface resource values.

2. Any locations within the planning area proposed for withdrawal from locatable mineral entry would also be NSO for oil and gas.
3. Coal

- All BLM-managed public lands within the planning area subject to leasing under 43 CFR 3400.2 are open to coal exploration and study, with the exception of the INHT NTMC. The coal screening process (as identified by 43 CFR 3420.1-4) has not been conducted in this planning area; therefore, leasing is deferred. Interest in exploration or leasing of federal coal would be handled on a case-by-case basis. If an application for a coal lease should be received in the future, an appropriate land use and environmental analysis, including the coal screening process, would be conducted to determine whether or not the coal areas are acceptable for further consideration for leasing and development under 43 CFR 3420.1-4. The BSWI RMP would be amended as necessary before coal leasing could occur. In accordance with 43 CFR 3400.2, coal leases shall not be issued on federal lands within the National System of Trails (see BLM M5280 4.2 E.6.i.).
- Leasing would be subject to BMPs and SOPs (Appendix K).
- Coal exploration and leasing would comply with the Mineral Leasing Act of 1920; the Surface Mining Control and Reclamation Act of 1977; the Federal Coal Leasing Amendments Act of 1976; the Mineral Leasing Act for Acquired Lands of 1947, as amended; NEPA; FLPMA; coal regulations; and coal planning criteria.

- With appropriate limitations and mitigation requirements for the protection of other resource values, all BLM-managed public lands and federal coal lands in the planning area, except for those lands identified as closed, would be open to coal resource inventory and exploration to help identify coal resources and development potential.
- Only those BLM-managed public lands that have development potential may be identified as acceptable for further consideration for coal leasing (Map 2-32).
- Should coal operations be developed on federal lands, an agreement would likely be developed between the State of Alaska and the Office of Surface Mining defining the regulatory role of the State of Alaska in these mining operations (30 CFR 745).

4. Oil Shale
   - Oil shale exploration and leasing will comply with the Mineral Leasing Act of 1920; the Mineral Leasing Act for Acquired Lands of 1947, as amended; NEPA; FLPMA; and oil shale regulations and planning criteria.
   - Oil shale shall be leased on a case-by-case basis and in accordance to 43 CFR 3900.
5. Non-Energy Solid Minerals
   - Non-energy leasable minerals exploration and leasing would comply with the Mineral Leasing Act of 1920; the Mineral Leasing Act for Acquired Lands of 1947, as amended; FLPMA; the Reorganization Plan No. 3 of 1946; and non-energy leasable minerals regulations and planning criteria.
   - Non-energy leasable minerals would be leased on a case-by-case basis and subject to 43 CFR 3500.
6. Other Leasable Minerals: Unless already closed under other legal or regulatory requirements or proposed to be closed in Table 2-13 below, the entire planning area would be open to development of other leasable minerals/products (e.g., geothermal). Issuance of these mineral leases would be determined on a case-by-case basis and would need to be compatible with the resource objectives and management requirements of this plan.
7. For BLM-permitted activities, incorporate appropriate levels and types of cultural sensitivity training for people unfamiliar with rural Alaska life and culture.
8. Encourage BLM-permitted operators to use local hire to the extent possible, which would include the commitment to use a local work force as a criterion in the allocation of permits. Commitment to use local work force would be judged by the operator's willingness to train local staff and, to the extent possible, develop work schedules to accommodate subsistence activities.
9. Appropriate SOPs listed in Appendix K would be included in any future leases as stipulations.

Description of Leasable Mineral Actions by Alternative

Table 2-14 describes proposed Leasable Mineral Actions by alternative. See Maps 2-33 through 2-35, for additional information.

Table 2-14: Leasable Mineral Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
Management Decisions *SWMFP (BLM 1981)* Oil and Gas: Open BLM-managed lands to oil and gas leasing under ANILCA Section 1008 with the following exclusions: The Unalakleet River Drainage Peregrine Falcon active or historically active nesting areas Anvik River Drainage Raptor nesting areas along the Kuskokwim. The portion of the INHT in the Lime Village block should be leased with stipulations to protect the integrity of the historic trail and historic sites. Lease other wildlife habitat areas (i.e., caribou wintering range), grizzly/brown bear denning and high use area, fisheries habitat, and raptor nesting area, with seasonal closures to prevent disturbance during crucial wildlife use periods. HMPs would set the periods for closures and would formulate other mitigating measures. NSO or seasonal closures are recommended to protect fisheries habitat. First lease priorities for tract selection, based on petroleum potential and State lease sales should be: • Minchumina Block (Secretarial decision) • Lime Village Block (Minchumina and Holitna Basins) • Goodnews Block • Anvik River Block (Norton Sound basin) • Sleetmute Block CTAI Provide opportunities for leasing or permitting of CTAI reserves for local use. Use of local CTAI resources could provide an alternative to diesel fuel for space heating and power generation. Geothermal Local geothermal resources could be used for space heating as an alternative to fossil fuels. Inventory the potential geothermal resource areas. *CYRMP (BLM 1986a)* Management Decisions: There are presently 69,000 acres of land within the Central Yukon Planning Area which are open for oil and gas leasing. Under this RMP there will be approximately 8,768,334 acres of land open to mineral leasing (including oil and gas leasing}, under the Mineral Leasing Act of 1920 as amended and supplemented. An additional 1,349,673 acres within the Seward 1008 Buckland Basin and Purcell Mountains SMUs will be opened to mineral leasing under this plan (10,118,007 acres total). The following areas totaling 706,450 acres will be closed to all mineral leasing. 1. The Unalakleet Wild River Corridor withdrawal- 28,249 acres. 2. Eight RNAs - 43,010 acres. 3. All subsistence withdrawal study areas (except linear withdrawals) - 174,144 acres. 4. Withdrawal/Exchange lands - 461,047 acres. Mineral leases within areas having an identified subsistence interest but not designated as withdrawn from mineral leasing (Rodo River, Kateel River, South Fork Huslia River, Tagagawik River, Ray River and the three tributaries of Squaw Creek [northwest of Rampart] will be subject to a 300-foot NSO setback zone along either side of the water course (measured from the mean high-water line or center line of non-navigable water courses). Mineral leases within areas withdrawn for anadromous fish spawning habitat will have an NSO setback zone which corresponds with the outer withdrawal limits. Designated portions of the Nulato River, having important anadromous fish spawning habitat, will have an NSO setback zone that runs along both sides of the river and is measured 300 feet back from the mean high water line.	See the following sections for areas identified as Closed to Leasing and Open to NSO Leasing: Section 2.7.3, Table 2-4, Water Resources and Fisheries Section 2.7.5, Table 2-6, Wildlife Section 2.7.19, Table 2-18, ACECs and Appendix J Section 2.7.20, Table 2-19, National Trails Section 2.7.21, Wild and Scenic Rivers See Map 2-33	See the following sections for areas identified as Closed to Leasing and Open to NSO Leasing: Section 2.7.3, Table 2-4, Water Resources and Fisheries Section 2.7.5, Table 2-6, Wildlife Section 2.7.20, Table 2-19, National Trails Section 2.7.21, Wild and Scenic Rivers See Map 2-34	See the following sections for areas identified as Closed to Leasing, Open to NSO Leasing, and Open Subject to Standard Stipulations Leasing: Section 2.7.3, Table 2-4, Water Resources and Fisheries Section 2.7.5, Table 2-6, Wildlife Section 2.7.20, Table 2-19, National Trails Section 2.7.21, Wild and Scenic Rivers See Map 2-35

2.7.16 Lands and Realty

Actions Common to All Action Alternatives for Lands and Realty

1. Recreation and Public Purposes (R&PP) Act
   - Lands would be made available for lease or sale to benefit local communities per the criteria for R&PP Act.
   - Disposal of reversionary interest on R&PP Act parcels that revert to BLM would be evaluated and addressed on a case-by-case basis, based on BLM management needs.
2. Land Disposal and Exchange Criteria
   - Reserved federal interests in split estates lands anywhere in the planning area may be considered as available for disposal out of federal ownership.
   - The BLM would consider a request to process a disposal (including disposal through land exchange) for the following:
     - A tract that was acquired that is no longer needed for federal purposes
     - A tract whose disposal would serve the public objectives such as expansion of communities and economic development
     - A tract of land that because of its location or other characteristics is difficult or uneconomic to manage and is not suitable for management by another federal agency.
   - Land exchange would be considered on a case-by-case basis to benefit public interests. Exchanges would focus on efficient management of public lands and objectives including: protection of fish and wildlife habitats, cultural resources, wilderness and aesthetic values, enhancing recreational opportunities, and community expansion. Exchanges would not be pursued until final State and native entitlement is reached.
   - Lands identified as available for disposal would be evaluated to determine whether such actions would remove significant fossils from federal ownership. If it is determined that significant fossils would be removed, then any applicable mitigation requirements under federal law, regulation, or BLM policy would be applied (BLM 2008a). See Section 2.7.9 for details on paleontological resources.
   - All withdrawals held by BLM or other agencies would be maintained unless the BLM or other agency request relinquishment (e.g., Department of Army withdrawal for a 1.48-acre parcel in Tuluksak for a National Guard Armory).
3. Land Acquisition Criteria
   - The BLM would only pursue acquisitions in the event there is a willing seller.
   - Acquire parcels that will allow management of a more contiguous landscape that would reduce the potential for habitat fragmentation to improve ecosystem health and maximize land management goals.

- Inholdings in the Unalakleet Wild River or INHT inholdings where no INHT easement reservation exists (easements only or entire parcel if the surrounding lands are in federal ownership).
- Once ANCSA and State of Alaska conveyances are completed, retain large blocks of BLM-managed public lands in the following areas:
  - Unalakleet South to Yukon River and east to Yukon
  - Nikolai south to Lime Village
- Existing opening orders PLO 6098 and PLO 6787 would remain, as well as designations of the Unalakleet Wild River Corridor and the INHT.
- Exchange or dispose of small isolated parcels to manage more contiguous landscape level ecosystem health units, to reduce fragmentation and improve ecosystem health, and to allow more efficient, cost effective fire management.
- BLM would not actively dispose of any lands within the Unalakleet Wild River Corridor and within the INHT NTMC (see Section 2.7.21 for details on the Unalakleet Wild River Corridor).

4. ROWs
   - Unless otherwise stated, the term ROW means FLPMA ROW and does not refer to a Section 7(h)(2) ROW under the National Trails System Act (NTSA) of 1968, 16 U.S.C. 1241 et seq.
   - As required based on changes in climate, the BLM would consider providing opportunities for community relocation through the use of ROW grants, permitting, exchanges, R&PP, leases, or other appropriate permitting actions as determined mutually beneficial for the community and the long-term sustainability of BLM-managed public lands.
   - In order to prevent proliferation of ROWs across the landscape, linear projects would be co-located within existing ROWs to the maximum extent possible. Determination of ROW routes would be made on a case-by-case basis in consultation with the State of Alaska and other relevant cooperating agencies.
   - ROWs for linear projects would be required to provide for unimpeded caribou passage in all caribou connectivity corridors or where essential winter habitat exists. Applicants for ROW must provide scientifically defensible information to demonstrate that their proposed linear facility would not impede caribou migration.
   - Existing roads and trails would be utilized for access where feasible, rather than creating new roads and trails.
5. Permits and Leases
   - No permits or leases would be granted for private recreational cabins, nor would permits be granted for private recreational use of existing cabins.
   - Existing trespass cabins would be removed, put under permit, or turned into government administrative sites. This would be determined at the site-specific implementation level.

- Use authorizations issued on selected lands would be treated as follows:
  - Native-selected: Prior to the issuance of a use authorization the views of the Native corporation would be obtained and considered. Rent received for any use authorization or trespass on Native-selected lands would go into an escrow account.
  - State of Alaska–selected: In accordance with 906(k)(1) of ANILCA, the BLM must receive a letter of concurrence prior to issuance of any use authorization. If the lands are conveyed to the State of Alaska, the use authorization would be transferred to the State for future administration. In accordance with 906(k)(2) of ANILCA, 90 percent of any rent received from any use authorization or trespass on State-selected lands would go into an escrow account. This is not required on top-filed lands unless, and then from the date, the selection attaches.

6. ANCSA 17(b) Easements

- The BLM will continue to review and reserve Section 17(b) easements under the law and regulations to ensure legal access to publicly owned lands while the remainder of the ANCSA corporations' land entitlements are conveyed. On-the-ground management of easements is the responsibility of the federal DOI landowner the easement accesses; i.e., the BLM, National Park Service, or the U.S. Fish and Wildlife Service. Other federal agencies, the State of Alaska, or an Alaska borough or municipal government may assume administration of a specific easement, or easements.
- The BLM is committed to working with the landowner, State, and other federal agencies to locate, mark, and monitor easements and help educate easement users to understand the rights reserved to the United States and the rights of the private landowner, subject to availability of funds, personnel, and approval. Priority would be based on the following:
  - Easements accessing lands that will be permanently managed by the BLM or that are important to BLM programs
  - Easements receiving high use
  - Easements required to implement an activity or implementation plan
  - Easements where landowners support the activity allowed by the easement
  - Easements where maintenance or education will mitigate environmental damage to the easement or BLM-managed lands

  These criteria will be used to prioritize other discretionary actions, such as maintenance on 17(b) easements. Realignment of reserved 17(b) easements will be considered on a case-by-case basis to resolve on-the-ground issues.
- Authorization from the BLM is not necessary prior to use of a 17(b) easement. However, it must be kept in mind that 17(b) easements are reserved on specific routes for specific kinds of vehicles, and sometimes are subject to seasonal restrictions. For example, summer use of a winter-use-only easement, driving off an easement, or using a vehicle not allowed on the easement is a trespass against the Native corporation, not against the BLM.
- Some 17(b) easements are made discontinuous by private lands. Acquisition of easements across or around these lands will be from willing landowners on a case-by-case basis as the need or opportunity arose, subject to the availability of funds.

7. The Unalakleet Administrative Sites would be recommended for withdrawal from mineral location and entry under the mining laws and leasing under the Mineral Leasing Act to the Secretary.

Description of Lands and Realty Actions by Alternative

Table 2-15 describes proposed Lands and Realty actions by alternative. See Maps 2-36 through 2-42 for additional information.

Table 2-15: Realty/Lands and Use/FLPMA ROW Avoidance and Exclusion Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
ANCSA 17(d)(1) withdrawals Keep all existing 17(d)(1) withdrawals in place.	**ANCSA 17(d)(1) withdrawals** Revoke ANCSA 17(d)(1) withdrawals except in those areas: Within HVWs Proposed for the management of wilderness characteristics as a priority: • Tonzona River (200,259 acres) • Highpower Creek (12,809 acres) • North Fork Kuskokwim River (53,006 acres) • Sethkokna River (11,499 acres) The area of the INHT in the following locations: • Farewell Burn unit (1,000-foot-wide buffer centered on the treadway plus the Bear Creek Cabin and access trail): 2,732 acres • Kaltag Portage unit (1,000-foot buffer centered on the Treadway, but outside of Unalakleet Wild River withdrawal): 1,897 acres In these areas, ANCSA 17(d)(1) withdrawals would be retained until a new withdrawal for the stated purpose is completed (see FLPMA withdrawals below).	**ANCSA 17(d)(1) withdrawals** Revoke all ANCSA 17(d)(1) withdrawals.	**ANCSA 17(d)(1) withdrawals** Revoke all 17(d)(1) withdrawals.

Alternative A	Alternative B	Alternative C	Alternative D
FLPMA Withdrawals No current managed direction identified. Management direction is determined on a case-by-case basis.	**FLPMA Withdrawals** Subject to valid existing rights, establish new FLPMA withdrawals [subject to ANILCA Section 1326(a)] for salable, locatable, and leasable minerals for the existing INHT treadway in the following locations: • Farewell Burn unit (1,000-foot-wide buffer centered on the treadway plus the Bear Creek Cabin and access trail): 2,732 acres retained • Kaltag Portage unit (1,000-foot buffer centered on the Treadway, but outside of Unalakleet Wild River withdrawal): 1,897 acres • Rohn Site (entire parcel): 363 acres See Map 2-37	**FLPMA Withdrawals** Subject to valid existing rights, establish new FLPMA withdrawals [subject to ANILCA Section 1326(a)] for the existing INHT treadway in the following locations: • Farewell Burn unit (1,000-foot-wide buffer centered on the treadway plus the Bear Creek Cabin and access trail): 2,732 acres • Kaltag Portage unit (1,000-foot buffer centered on the Treadway, but outside of Unalakleet Wild River withdrawal): 1,897 acres • Rohn Site (entire parcel): 363 acres The determination on whether the FLPMA withdrawal would include salable, leasable, and/or locatable minerals would be determined when the withdrawal is proposed. See Map 2-38	**FLPMA Withdrawals** FLPMA withdrawal for the 1,000-foot-wide buffer centered on the existing INHT treadway would not be pursued and the area would be NSO for locatable, leasable, and closed to salable. See Map 2-39
Locatable and Leasable Mineral Withdrawals No current management direction identified. Management direction is determined on a case-by-case basis.	**Locatable and Leasable Mineral Withdrawals** See the following sections for proposed locatable and leasable mineral withdrawals: Section 2.7.3, Table 2-4, Water Resources and Fisheries Section 2.7.5, Table 2-6, Wildlife Section 2.7.19, Table 2-18, ACECs and Appendix J Section 2.7.20, Table 2-19, National Trails Section 2.7.21, Wild and Scenic Rivers See Map 2-27, 2-33, and 2-37.	**Locatable and Leasable Mineral Withdrawals** See the following sections for proposed locatable and leasable mineral withdrawals: Section 2.7.5, Table 2-6, Wildlife Section 2.7.21, Wild and Scenic Rivers See Map 2-28, 2-34, and 2-38.	**Locatable and Leasable Mineral Withdrawals** See Section 2.7.21, Wild and Scenic Rivers See Map 2-28, 2-35, and 2-39.

Alternative A	Alternative B	Alternative C	Alternative D
FLPMA ROW Exclusion & Avoidance Areas No current management direction was identified.	**FLPMA ROW Exclusion & Avoidance Areas** Subject to ANILCA Title XI and valid existing rights, the following would be FLPMA ROW exclusion areas[1] (1,464,069 acres): • Proposed Innoko Bottoms Priority Wildlife Habitat Area • Unalakleet Wild River Corridor • Recommended Suitable WSR corridors • Managed North and South Connectivity Corridors • INHT NTMC • Permafrost areas Subject to valid existing rights, the following would be FLPMA ROW avoidance areas (8,824,848 acres)[2]: • HVWs • ACECs • Tundra mats • Lands managed for wilderness characteristics as a priority • Riparian areas • Areas with BLM Sensitive Plants • The following five identified rare ecosystems: o Pingos in Interior Alaska that support forests o Tamarack (*Larix laricina*) dominated associations o Dunes that have been stabilized by forests; typically, Aspen-Black spruce o Limestone geologic substrate o Serpentine geologic substrate • Disturbance footprint of BLM public shelter cabins • Jurisdictional Waters of the U.S., including wetlands and floodplains • Highly erodible soils would be FLPMA ROW avoidance for underground utilities only See Map 2-40 ROW exclusion areas are areas where new ROWs not allowed. ROW avoidance areas are areas where new ROWs should be placed in other areas if feasible. Determinations to allow a ROW within a ROW avoidance area would be made on a case-by-case	**FLPMA ROW Exclusion & Avoidance Areas** There would be no FLPMA ROW exclusion areas[1]. Subject to ANILCA Title XI and valid existing rights, the following would be FLPMA ROW avoidance areas (7,069,494 acres)[2]: • INHT NTMC • HVWs • Tundra mats • Riparian areas • Permafrost areas • Proposed Innoko Bottoms Priority Wildlife Habitat Area. • Unalakleet Wild River Corridor • Areas with BLM Sensitive Plants • The following five identified rare ecosystems o Pingos in Interior Alaska that support forests o Tamarack (*Larix laricina*) dominated associations o Dunes that have been stabilized by forests; typically, Aspen-Black spruce o Limestone geologic substrate o Serpentine geologic substrate • Jurisdictional Waters of the U.S., including wetlands and floodplains • Highly erodible soils would be FLPMA ROW avoidance for underground utilities only Subject to ANILCA Title XI and valid existing rights, the following would be FLPMA ROW avoidance areas for linear realty actions (576,038 acres): • South Connectivity Corridor See Map 2-41 ROW exclusion areas are areas where new ROWs not allowed. ROW avoidance areas are areas where new ROWs should be placed in other areas if feasible. Determinations to allow a ROW within a ROW avoidance area would be made on a case-by-case basis.	**FLPMA ROW Exclusion & Avoidance Areas** There would be no FLPMA ROW exclusion areas[1]. Subject to ANILCA Title XI and valid existing rights, the following would be FLPMA ROW avoidance areas (5,130,927 acres)[2]: • HVWs • Proposed Innoko Bottoms Priority Wildlife Habitat Area. • Unalakleet Wild River Corridor • Tundra mats FLPMA ROWs would be authorized on a case-by-case basis in the following areas: • Permafrost areas • INHT NTMC if consistent with the values these areas are managed for (see Sections 2.7.8 and 2.7.20). See Map 2-42 ROW exclusion areas are areas where new ROWs not allowed. ROW avoidance areas are areas where new ROWs should be placed in other areas if feasible. Determinations to allow a ROW within a ROW avoidance area would be made on a case-by-case

Alternative A	Alternative B	Alternative C	Alternative D
Communications Sites ROW Communication sites evaluated on a case-by-case basis.	**Communications Sites ROW** (See Section 2.7.16 for detailed management decisions) Allow expanded use on existing microwave towers that would increase safety along inter-village travel routes with appropriate stipulations to ensure minimal environmental changes to existing sites.	**Communications Sites ROW** (See Section 2.7.16 for detailed management decisions) Communications sites would be allowed at strategic locations along inter-village winter travel route corridors to improve communication and safety. Locations would be determined on a case-by-case basis with appropriate required operating procedures and stipulations.	**Communications Sites ROW** (See Section 2.7.16 for detailed management decisions) Communications sites would be identified on a case-by-case basis. The BLM would support development of cell phone towers and other communication infrastructure on BLM-managed public lands that would improve communication and internet connection for rural communities in the planning area.
Wind Energy Development No current management direction was identified.	**Wind Energy Development** The INHT NTMC would be excluded from wind energy development unless it is permitted under ANILCA Title XI.	**Wind Energy Development** Same as Alternative B.	**Wind Energy Development** No specific management direction pertaining to wind development.

Alternative A	Alternative B	Alternative C	Alternative D
SWMFP (BLM 1981) R3-.1: Some historic sites within the FLPMA ROW of the INHT may be suitable for renovation and adaptive use as trapping cabins under caretaker agreements. Permanent occupancy of historic sites should be discouraged to protect the historical integrity of the trail. L-2.2: Assure that the existence and erection of temporary or permanent structures or shelters to be used in conjunction with hunting, trapping, and fishing are consistent with resource management principles.	**Permits and Leases** Occupancy leases or trapping/subsistence cabin permits would not be allowed within 300 feet of riparian areas (OHWM of perennial streams). Existing trespass cabins within 300-foot setback of riparian areas within HVWs would not be permitted. Trapping cabins would not be permitted within 30 trail-miles of the exterior boundary of any municipal boundary of a city organized under State law and a radius of 30 miles from the 14c(3) lands held in trust under ANCSA by the State Municipal Trustee. This distance may be altered based on identified resource damage or user conflict. No permits or leases would be granted for construction of structures within CSUs and lands managed for wilderness characteristics as a priority except as provided for under ANILCA.	**Permits and Leases** The distance between trapping cabins would be determined on a case-by-case basis based on documented conflict. Granting of permits and leases in CSUs would be determined on a case-by-case basis based on the compatibility of the permits and leases with management goals of these areas and the requirements of ANILCA.	**Permits and Leases** Trapping cabin permits would be determined on a case-by-case basis at the implementation level. Granting of permits and leases in CSUs would be determined on a case-by-case basis based on the compatibility of the permits and leases with management goals of these areas and the requirements of ANILCA.
Disposals *SWMFP (BLM 1981)* No current management direction identified.	**Exchanges and Disposals** The areas available for disposal under Alternative D would be available for exchange under Alternative B, except Alternative B would not consider parcels for exchange if they are found in the following areas proposed under Alternative B. • Land with wilderness characteristics being managed as a priority • ACECs • Connectivity Corridors Under Alternative B, approximately 342,360 acres are available for exchange. Details on these parcels and their legal descriptions are found in Appendix F. No parcels are available for disposal under Alternative B.	**Exchanges and Disposals** The areas available for disposal under Alternative D would be available for exchange under Alternative C except Alternative C would not consider parcels for exchange if they are found in the following areas proposed under Alternative C. • Areas with important cultural or fish values • South Connectivity Corridor Under Alternative C, a total of approximately 356,942 acres are available for exchange. Details on these parcels and their legal descriptions are found in Appendix F. No parcels are available for disposal under Alternative C.	**Exchanges and Disposals** The following categories of parcels in the planning area are available for exchange or disposal. Category 1 includes unselected land in BLM ownership adjacent to State or Native patented lands that are 1.5 townships (34,560 acres) or smaller that the BLM would consider for disposal. Category 2 includes State or Native selected lands that are 1.5 townships (34,560 acres) or smaller that, if these selected lands remain in BLM ownership after the conveyance process, the BLM would consider for disposal. Category 3 includes unselected land in BLM ownership that are 1.5 townships (34,560 acres) or smaller that are adjacent to State or Native selected land that, if these selected lands are conveyed, the BLM would consider for disposal. Under Alternative D, a total of approximately 451,173 acres are available for exchange or disposal. Details on these parcels and their legal descriptions are found in Appendix F.

2.7.17 Recreation and Visitor Services

Actions Common to All Action Alternatives for Recreation and Visitor Services

1. Extensive Recreation Management Areas (ERMAs) and Undesignated Recreation Lands General Management Actions

- SRPs are issued according to BLM policy, see 43 CFR 2932.56.
- New restrictions or facilities may be developed for the purposes of site protection, visitor safety, or enhancement of targeted outcomes and setting character.
- Aircraft use would be unrestricted and associated minimal clearing of rocks, downed logs, and brush would be allowed on landing areas.
- Issuance of SRPs would include appropriate stipulations for the protection and management of natural, cultural, and paleontological resources and would minimize potential impacts to those resources to the extent practicable.
- Commercial, competitive, organized group activities, vending, special area use, and commercial filming in conjunction with an SRP or a land use permit would be authorized on a case-by-case basis. Factors for approving an application for an SRP include, but may not be limited to:
    - Application is made at least 180 days prior to the requested use period.
    - The proposed recreation use complies with this RMP's resource allocations and existing rules and regulations.
    - If applicable, the applicant is in good standing with other land management agencies.
    - For activities that require more than 50 hours of BLM staff time for planning or oversight, the applicant agrees to a cost recovery agreement.
    - The duration of SRP permits will depend upon the precedent-setting nature or risk associated with the permit. New or riskier permits may be shorter duration whereas lower risk permits or permits for known activities may be issued for longer time periods. This would be determined on a case-by-case basis at the permitting level.
- Semi-permanent or permanent developments, such as tent platforms, permanent camp sites, interpretive areas, or toilet facilities, would only be allowed through the BLM permitting process. Should a user wish to construct a semi-permanent or permanent structure, the action may not be considered recreational and would therefore involve BLM Lands and Realty specialists, resulting in the need for cost recovery.
- An adaptive management monitoring program with baseline conditions, impact thresholds, and triggers for actions would be established for the purposes of resource protection, visitor safety, or enhancing targeted outcomes and setting character.
- SRPs would only be issued when the proposed use supports the BSWI ERMA primary recreation activities of hunting and dispersed camping or the secondary activities of snowmobiling and fishing when not in direct conflict with the primary activities.
- Develop new restrictions and facilities, as needed, for the purposes of site protection, visitor safety, or enhancing targeted outcomes and setting character (Appendix G and Appendix L).
- Manage Undesignated Recreation Lands to reduce user conflict between subsistence hunters, commercial guides and all other hunters.

2. Community Focus Zone (CFZ) of the BSWI ERMA
    - Non-commercial SRPs determined to be consistent with objectives for CFZs would be permitted.
    - No commercial hunting guide/outfitter SRPs would be issued with CFZs
    - Limit permitting of special forest product permits on BLM lands in the CFZ including the harvest of house logs and fuel wood, as well as the commercial harvest of natural products such as berries and mushrooms.
    - Exceptions could be made to allow permitting of SRPs and commercial special forest product permits based upon concurrence from the affected CFZ village for a particular use by a resident or other concern.
3. INHT Special Recreation Management Area (SRMA) (see Map 2-43 through 2-45)
    - OHV area designation is established as Limited (details on limitations by alternative are provided in Section 2.7.18 and Table 2-17).
    - See SRMA table for INHT SRMA for desired experiences, beneficial outcomes, and administrative decisions for this area (Appendix L).
    - Apply administrative actions to create and maintain semi-primitive motorized recreation opportunities, experiences and outcomes.
4. In Rohn Recreation Management Zone
    - The Rohn Site Recreation Management Zone would be established (363 acres) within the INHT SRMA
    - Only the use of dead and down trees for the wood stove in the BLM Public Shelter Cabin would be allowed. Cutting of live trees would be prohibited.
    - Non-permitted use would be limited to 7 consecutive days, and to no more than 14 days in total in a calendar year.
5. Unalakleet Wild River Decisions
    - Apply administrative actions as needed to protect and enhance the river's free flowing condition, water quality, ORVs, and wild river classification.

Description of Recreation and Visitor Services Actions by Alternative

Table 2-16 describes proposed Recreation and Visitor Services actions by alternative. See Maps 2-43 through 2-45, for further information.

Table 2-16: Recreation and Visitor Services Actions by Alternative (Table 2-16a – 2-16b)

Table 2-16a: Recreation and Visitor Services Actions by Alternative – BSWI ERMA

Alternative A	Alternative B	Alternative C	Alternative D
BSWI ERMA None established.	**BSWI ERMA** Designate the BSWI ERMA (13,110,096 acres) and apply CFZs within the ERMA. ERMA-specific objectives and the management framework for each can be found in Appendix L– Recreation Management Areas See Map 2-43	**BSWI ERMA** Designate the BSWI ERMA (13,125,320 acres) and apply CFZs within the ERMA. ERMA-specific objectives and the management framework for each can be found in Appendix L– Recreation Management Areas See Map 2-44	**BSWI ERMA** Same as Alternative C. See Map 2-45
General No stay limits in effect. New restrictions or facilities could be developed for the purposes of site protection, visitor safety, or enhancing targeted outcomes and setting character.	**General** Stay limits for non-permitted dispersed camping would be limited to 14 consecutive days within a 28-day period. After a camp has been occupied for 14 days, the camp must be moved at least 2 miles to start a new 14-day period.	**General** Same as Alternative B.	**General** Stay limits for non-permitted/dispersed camping would be limited to 30 consecutive days within a 40-day period. After a camp has been occupied for 30 days, the camp must be moved at least 2 miles to start a new 30-day period.
OHV Per Section 811 of ANILCA - All rural residents engaged in subsistence uses to have reasonable access to subsistence resources on public lands, which allows for appropriate use for subsistence purposes of snowmobiles, motorboats, and other means of surface transportation traditionally employed for such purposes by residents, subject to reasonable regulations.	**OHV** The BSWI ERMA would follow travel and transportation management decisions for "All BSWI lands not managed as Conservation System Units or Sensitive Resource Areas" under Alternative B as described in Section 2.7.18, Table 2-17.	**OHV** The BSWI ERMA would follow travel and transportation management decisions for "All BSWI lands not managed as Conservation System Units" under Alternative C as described in Section 2.7.18, Table 2-17.	**OHV** The BSWI ERMA would follow travel and transportation management decisions for "All BSWI lands not managed as Conservation System Units" under Alternative D as described in Section 2.7.18, Table 2-17.
Community Focus Zone None.	**Community Focus Zone** Apply the CFZ within a 10-mile buffer surrounding BSWI communities (818,395 acres). CFZ-specific objectives and the management framework for each can be found in Appendix L– Recreation and Visitor Services Management Framework See Map 2-43	**Community Focus Zone** Apply the CFZ within a 5-mile buffer surrounding BSWI communities (95,307 acres). CFZ-specific objectives and the management framework for each can be found in Appendix L– Recreation and Visitor Services Management Framework See Map 2-44	**Community Focus Zone** No CFZ would be applied around BSWI communities. See Map 2-45
Hunting Guide/Outfitter No current management decisions identified. Management direction is determined on a case-by-case basis.	**Hunting Guide/Outfitter** SRPs for hunting guide/outfitters would not be authorized within CFZs	**Hunting Guide/Outfitter** SRPs for hunting guide/outfitters would not be authorized within CFZs	**Hunting Guide/Outfitter** N/A; no CFZs under Alternative D

Alternative A	Alternative B	Alternative C	Alternative D
Shuttle Service Operations No current management decisions identified. Management direction is determined on a case-by-case basis.	**Shuttle Service Operations** To maintain the objectives in the BSWI ERMA, all water, air, and over snow shuttle service operations (businesses that provides transportation services for a fee to and from public lands) would be required to obtain an SRP to access BLM-managed lands in the planning area.	**Shuttle Service Operations** If increases in use, conflict, and public interest exceed the objectives in the BSWI ERMA, the BLM would engage in additional planning to maintain the objectives of the BSWI ERMA. Possible remedies could include, but are not limited to, requiring SRPs, limiting SRPs, seasonal visitation restrictions, etc.	**Shuttle Service Operations** If increases in use, conflict, and public interest exceed the objectives in the BSWI ERMA (Appendix G and Appendix L) in a specific area, BLM would increase monitoring, outreach, education, and/or enforcement to those affected on a case-by-case basis.

Table 2-16b: Recreation and Visitor Services Actions by Alternative – INHT SRMA

Alternative A	Alternative B	Alternative C	Alternative D
INHT SRMA Area No current management direction was identified.	**INHT SRMA Area** Designate the INHT SRMA. SRMA-specific objectives and the management framework for each can be found in Appendix L– Recreation and Visitor Services Management Framework The SRMA would comprise the following areas: • Farewell Burn - located south of Nikolai, Alaska (46,591 acres) • Kaltag Portage - located between Unalakleet and Kaltag, Alaska (241,512 acres) • Rohn - located southeast of Nikolai (363 acres) • Iditarod-Anvik Connecting Trail (67,333 acres) See Map 2-43	**INHT SRMA Area** Designate the INHT SRMA. SRMA-specific objectives and the management framework for each can be found in Appendix L– Recreation and Visitor Services Management Framework The SRMA would comprise the following areas: • Farewell Burn - located south of Nikolai, Alaska (31,367 acres) • Kaltag Portage - located between Unalakleet and Kaltag, Alaska (241,512 acres) • Rohn - located southeast of Nikolai (363 acres) • Iditarod-Anvik Connecting Trail (67,333 acres) See Map 2-44	**INHT SRMA Area** Same as Alternative C. See Map 2-45
Travel Decisions Summer OHV use and associated resource impacts would continue on the INHT	**Travel Decisions** The INHT SRMA would follow travel and transportation management decisions for the INHT TMA under Alternative B as described in Section 2.7.18, Table 2-17.	**Travel Decisions** Same as Alternative B.	**Travel Decisions** The INHT SRMA would follow travel and transportation management decisions for the INHT TMA under Alternative D as described in Section 2.7.18, Table 2-17.
BLM INHT Public Shelter Cabin Use No current management direction exists.	**BLM INHT Public Shelter Cabin Use** There would be 3-day stay limit in public shelter cabins for casual use Only the use of dead and down trees for shelter cabin wood stoves would be allowed. Cutting of live trees would be prohibited.	**BLM INHT Public Shelter Cabin Use** Same as Alternative B.	**BLM INHT Public Shelter Cabin Use** There would be a 14-day stay limit in public shelter cabins for casual use.

2.7.18 Travel and Transportation Management

Actions Common to All Action Alternatives for Travel and Transportation Management

1. General Transportation Management Actions
    - Areas known to have high OHV use would be prioritized for natural and cultural resource surveys to assess levels of impact to these resources (see also Table 2-7, Cultural Resources).
    - Those OHVs transported by aircraft or boats to areas with special designations would be subject to all OHV limitations specified for that special designation.
    - BLM-managed public lands in the planning area would be designated as "Limited" to motorized travel with exceptions noted in Table 2-17. Designation of an area as "Limited" is a planning-level decision. Identification of specific limitations within the "Limited" designation (e.g., vehicle weight, vehicle width) are implementation-level planning decisions and would be developed as part of a travel and transportation plan that will be completed by the BLM subsequent to this RMP. The criteria guiding the development of these implementation-level plans are described below. Additionally, this RMP provides interim-guidance on types of limitations until the implementation level plans are completed. The interim-guidance this RMP provides regarding types of limitations is provided in the alternatives table below. Limitations on casual use motorized access would be implemented based on 43 CFR 8342.1. Limitations to motorized access to subsistence resources would be implemented based on ANILCA Sections 811(a) and (b).
2. Criteria for Implementation-level Travel Planning
    - Travel management planning would be completed in accordance with BLM's Manual 1626*, Travel and Transportation Management Manual* (BLM 2016c).
    - The BLM will develop travel management plans identifying travel routes.
    - If summer use routes are identified during implementation-level travel management planning, these designations would be based the minimization criteria found in 43 CFR 8342.1 and the following criteria:
        - Prioritize a route system on lands of high resilience to repeated passage of summer OHVs.
        - Include existing routes (see Map 2-46) accessing subsistence resources in the designated route network.
        - Reduce redundant or social trails accessing the same areas and resources unless multiple routes are found necessary for multiple recreation experiences that are supported by the RMP.
        - Meet connectivity and destination goals for rural communities.
        - During implementation-level planning, consider resource impacts, other resource decisions, and resource use needs when developing a route system.

- Changes to travel management plans may be requested in writing to the AO and should include details and rationale for making the change. The AO will respond in writing regarding acceptance of the proposal for changes.
- Existing roads and trails would be utilized for access where feasible, rather than creating new roads and trails.

Travel Management Definitions

The following travel management definitions are defined below for ease in understanding the alternatives:

Off-Highway Vehicle (OHV) Categories

- **Utility Terrain Vehicle (UTV):** A recreational motor vehicle other than an ATV (as defined below) or snowmobile (as defined below) designed for and capable of travel over unpaved roads, traveling on four or more low-pressure tires or tracks, a curb weight of 1,500 pounds or less (2,000 pounds gross vehicle weight rating [GVWR]), and a maximum width of 64 inches. Examples include (but are not limited to) production "quad / side-by-sides" and Argos.
- **All-Terrain Vehicle (ATV):** A motorized wheeled vehicle other than a snowmobile that is defined as having a curb weight of 1,000 pounds or less (1,500 pounds GVWR), a maximum width of 50 inches, steered using handlebars, travels on four or more tires (no tracks), and has a seat designed to be straddled by the operator. Examples include (but are not limited to) production "four wheelers".
- **Motorcycle:** Motorized vehicle with two tires and with a seat designed to be straddled by the operator. This includes motorcycles converted to run on a track(s) and ski(s) specifically over snow.
- **Snowmobile:** A motorized vehicle designed for use over snow that runs on a track or tracks and uses a ski or skis for steering, a curb weight of 1,000 pounds or less, a maximum width of the vehicle 50 inches or less, steered using handlebars, and has a seat designed to be straddled by the operator. Examples include (but are not limited to) production snowmobiles.
- **Over-the-Snow Vehicle (OSV):** A motorized vehicle designed or converted for use over snow that is not a snowmobile (as defined above), runs on a track or tracks, uses a ski or skis or track for turning, and has a vehicle width greater than 50 inches. Examples include (but are not limited to) vehicles or trucks converted to tracks, snow cats, snow buses, and Nodwells. All OSVs would require a pre-use authorization for use of this vehicle type.

Seasons and Types of OHV Access

- **Winter:** Any time where there is adequate snow cover or frost to allow the operation of OSVs or snowmobiles (as defined above) without damaging surface vegetation and soils (43 CFR 36 ANILCA Special Access Provision). Adequate snow cover or frost shall mean snow of sufficient depth, generally 6-12 inches or more, or a combination of snow and frost depth, sufficient to protect the underlying vegetation and soil.
- **Summer:** Any time there is not adequate snow cover or frost to allow the operation of OSVs or snowmobiles without damaging surface vegetation and soils.

- **Subsistence Use:** Includes any use of surface use transportation as a means of access to subsistence resources as provided for under ANILCA, Section 811 and/or 1110, described in detail under Section 2.3.1.
- **Casual Use:** Includes any use of motorized vehicle that is not for subsistence, military, or emergency purpose and is not related to a permitted, authorized or administrative activity authorized by the BLM or otherwise officially approved. Casual use is synonymous with Off-Road Vehicle/OHV use as defined by 43 CFR 8340.0-5.

Route Types

The following categories of ground transportation linear features are defined below for ease in understanding the alternatives:

- **Road:** A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.
- **Primitive Road:** A linear route managed for use by four-wheel drive or high-clearance vehicles. Primitive roads do not normally meet any BLM road design standards.
- **Trail:** A linear route managed for human-powered, stock, or OHV forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.
- **Primitive Route:** Any transportation linear feature located within a wilderness study area or lands with wilderness characteristics prioritized for management of lands with wilderness character by a land use plan and not meeting the wilderness inventory road definition.
- **Transportation Linear Disturbance:** An existing user made route that is not actively managed by BLM. The decision regarding whether to retain or close this type of transportation linear feature would be made through implementation-level travel management planning.
- **Temporary Route:** Short-term overland roads, primitive roads, or trails authorized or acquired for the development, construction, or staging of a project or event that has a finite lifespan.
- **Treadway:** The actively used surface of a trail (FHWA 2007).

Description of Travel and Transportation Management Actions by Alternative

Table 2-17 describes proposed Travel and Transportation Management actions by alternative. See Maps 2-46 and 2-47 for further information.

Table 2-17: Travel and Transportation Management Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
All lands in planning area managed as undesignated.	**Vegetation and Wildlife Travel Management** SSS flora and lichen areas (caribou habitat) Travel Management Decisions If monitoring shows observable or quantifiable degradation of dwarf shrub, lichen, or sparse vegetation habitats due to OHV use, then appropriate management actions would be developed and implemented. These actions could include: • OHV use limitations • Trail relocation • Trail hardening • Trail closure Innoko Bottoms Priority Wildlife Habitat Area To minimize impacts to subsistence resources and reduce subsistence conflict, casual use airboats and hovercraft would not be allowed on non-navigable waterways on BLM-managed public lands in the proposed Innoko Bottoms Priority Wildlife Habitat Area. Connectivity Corridors To minimize impacts to subsistence resources and reduce subsistence conflict, casual use airboats and hovercraft would not be allowed on non-navigable waterways on BLM-managed public lands in these corridors. Raptors See Section 2.7.5, Table 2-6, for ground vehicle and aircraft buffers for raptor nesting sites.	**Vegetation and Wildlife Travel Management** SSS flora and lichen areas (caribou habitat) Travel Management Decisions Same as Alternative B. Innoko Bottoms Priority Wildlife Habitat Area Same as Alternative B. Connectivity Corridor Same as Alternative B. Raptors See Section 2.7.5, Table 2-6, for ground vehicle and aircraft buffers for raptor nesting sites.	**Vegetation and Wildlife Travel Management** SSS flora and lichen areas (caribou habitat) Travel Management Decisions No limitations on OHV use. Innoko Bottoms Priority Wildlife Habitat Area There would be no restrictions on motorized watercraft in non-navigable waters on BLM-managed public lands in the proposed Innoko Bottoms Priority Wildlife Habitat Area.

Alternative A	Alternative B	Alternative C	Alternative D
All lands in planning area managed as Undesignated	**All Lands Not Designated as CSUs or Sensitive Resource Areas** OHV Designation = Limited Summer Casual and Subsistence Access: • Summer subsistence overland travel use would be limited to ATVs (as defined in Appendix B). • Summer casual OHV use (as defined Appendix B) would be limited to existing routes (as shown in BLM's current route inventory once implementation planning occurs) only. Winter Casual and Subsistence Access: • Winter subsistence have no restrictions. • Winter casual use would be snowmobiles only (as defined in Appendix B).	**All Lands Not Designated as CSUs** OHV Designation = Limited Summer Casual and Subsistence Access: • Summer subsistence overland travel use would be limited to ATVs and utility terrain vehicles [UTVs] (as defined above and in Appendix B). • Summer OHV casual use would be limited to existing routes (as shown in the BLM's current route inventory once implementation planning occurs). Winter Casual and Subsistence Access: • No limitations on winter subsistence and casual use cross-country travel. • Work in coordination with the State of Alaska to designate stream crossing routes; and these routes would be designated within the 100-year floodplain).	**All Lands Not Designated as CSUs** OHV Designation = Limited Summer Casual and Subsistence Access: • No limitations on summer subsistence overland travel use. • No limitations on summer casual use. Winter Casual and Subsistence Access: • No limitations on winter subsistence and casual use cross-country travel. • Work in coordination with the State of Alaska to designate stream crossing routes; and these routes would be designated within the 100-year floodplain.
Unalakleet National Wild River Plan (BLM 1983): Traditional means of access such as outboard motorboats, airplanes, dogsleds, and snowmobiles are allowed for all river users. Other means of access, such as inboard motorboats, airboats, hovercraft, and ATVs are not allowed in the corridor.	**Unalakleet Wild River Corridor Travel Management Decisions** OHV Designation = Limited Summer Casual and Subsistence Access: • Casual Summer OHV Access would be prohibited. • Subsistence Summer OHV Access would be limited to existing trails (not including the INHT), primitive roads, and roads (as shown in the BLM's current route inventory once implementation planning occurs) and would include ATVs only (as defined in Appendix B). Winter Casual and Subsistence Access: • Winter Cross Country OHV Access allowed for snowmobiles only (as defined in Appendix B). In cases where the INHT NTMC is co-located with the Unalakleet Wild River, the management prescriptions for the INHT NTMC shall take precedence.	**Unalakleet Wild River Corridor Travel Management Decisions** OHV Designation = Limited Summer Casual and Subsistence Access: • Casual Summer OHV Access would be limited to existing trails (not including the INHT), primitive roads, and roads (as shown in the BLM's current route inventory once implementation planning occurs) and would include ATVs only (as defined in Appendix B). • Subsistence Cross Country summer OHV Access would be allowed and would include ATVs only. Winter Casual and Subsistence Access: • Same as Alternative B. In cases where the INHT NTMC is co-located with the Unalakleet Wild River, the management prescriptions for the INHT NTMC shall take precedence.	**Unalakleet Wild River Corridor Travel Management Decisions** OHV Designation = Limited Summer Casual and Subsistence Access: • Casual Summer OHV Access would be limited to existing trails (not including the INHT), primitive roads, and roads (as shown in the BLM's current route inventory once implementation planning occurs) and would include both UTVs and ATVs (as defined in Appendix B). • Subsistence Cross-country summer OHV Access would be allowed and would allow both UTVs and ATVs (as defined in Appendix B). Winter Casual and Subsistence Access: • Winter Cross-country OHV Access allowed and would include snowmobiles (as defined in Appendix B). In cases where the INHT NTMC is co-located with the Unalakleet Wild River, the management prescriptions for the INHT NTMC shall take precedence.

Alternative A	Alternative B	Alternative C	Alternative D
All lands in planning area managed as undesignated	**INHT NTMC TMA** OHV designation = Limited Summer Casual and Subsistence Access: Casual and Subsistence summer OHV Access would be prohibited. Winter Casual and Subsistence Access: • Winter Cross Country casual and Subsistence Access allowed for snowmobiles only. • If Winter Casual and Subsistence snowmobile access results in degradation of the resources or prevents trail management that meets requirements of the National Trails Act, then this would be prohibited in affected areas. The Rohn Site would have separate travel management as shown below.	**INHT NTMC TMA** Same as Alternative B.	**INHT NTMC TMA** OHV designation = Limited Summer Casual and Subsistence Access: • Casual summer OHV Access would be prohibited. • Subsistence Summer OHV Access would be limited to existing summer routes and would include ATVs only. Winter Casual and Subsistence Access: • Winter Cross Country Casual and Subsistence Access allowed for snowmobiles only. • If winter Casual and Subsistence snowmobile access results in degradation of the resources or prevents trail management that meets requirements of the National Trails Act, then this would be prohibited in affected areas. The Rohn Site would have separate travel management as shown below.
Rohn Site Travel Decisions No existing management direction. Per 43 CFR 36.11 Regulations for special access provisions of ANILCA - OHVs are prohibited except on roads and parking areas in CSUs, except by permit.	**Rohn Site Travel Decisions** OHV designation = Limited Summer Casual and Subsistence Use: The Rohn Site would eliminate summer seasonal casual and subsistence OHV use. Winter Casual and Subsistence Use: Winter casual and subsistence OHV use would be open to cross country travel with snowmobiles only (as defined in Appendix B). The BLM would develop a Travel Management Plan for the INHT NTMC TMA and the Rohn Site, including the inventory and designation of routes for motorized, non-motorized, and non-motorized mechanized use.	**Rohn Site Travel Decisions** OHV designation = Limited Summer Casual and Subsistence Use: The Rohn Site would allow seasonal casual and subsistence OHV use but would be limited to existing routes (as shown in BLM current route inventory once implementation planning occurs) Winter Casual and Subsistence Use: Winter Cross Country Casual and Subsistence Access would be allowed for snowmobiles only. The BLM would develop a Travel Management Plan for the INHT NTMC TMA and the Rohn Site, including the inventory and designation of routes for motorized, non-motorized, and non-motorized mechanized use.	**Rohn Site Travel Decisions** OHV designation = Limited Summer Casual and Subsistence Use: The Rohn Site would allow seasonal summer casual and subsistence OHV use. Would not be limited to existing routes. Winter Casual and Subsistence Use: Winter Cross Country Casual and Subsistence Access would be allowed for snowmobiles and over-the-snow vehicles. The BLM would develop a Travel Management Plan for the INHT NTMC TMA and the Rohn Site including the inventory and designation of routes for motorized, non-motorized, and non-motorized mechanized use.
All lands in planning area managed as Undesignated.	**Lands Managed for Wilderness Characteristics TMA** OHV designation = Limited Summer OHV Casual and Subsistence Access: • Casual summer OHV Access prohibited. • Summer subsistence OHV Access would be limited to existing routes (as shown in existing BLM route inventory once implementation planning occurs) and would include ATVs only (as defined in Appendix B). Winter Casual and Subsistence Access: • Winter casual and subsistence OHV Access would be open to cross country travel with snowmobiles only.	**Lands Managed for Wilderness Characteristics TMA** N/A	**Lands Managed for Wilderness Characteristics TMA** N/A

Alternative A	Alternative B	Alternative C	Alternative D
All lands in planning area managed as undesignated.	**Travel Management in ACECs** See Appendix J for travel management decisions specific to each ACEC.	**Travel Management in ACECs** N/A	**Travel Management in ACECs** N/A

2.7.19 Areas of Critical Environmental Concern

The term "ACEC" identifies areas within BLM-managed public lands where special management is required to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resource, or other natural systems or processes; or to protect life and provide safety from natural hazards (BLM 2018b). The analysis and the resultant findings for ACEC relevance and importance criteria was performed pursuant to FLPMA Section 202(c)(3) (43 U.S.C. 1712), 43 CFR 1610.7-2, and BLM Manual 1613 *Areas of Critical Environmental Concern* (BLM 1988) Table 2-18 summarizes the ACECs that are being considered in the BSWI RMP Alternatives, as well as specific relevance and importance criteria for that ACEC.

Actions Common to All Action Alternatives for ACECs

There is no management common to all action alternatives for ACECs.

Description of Areas of Critical Environmental Concern Actions by Alternative

Table 2-18 describes proposed ACEC actions by alternative. See Map 2-48, for the proposed ACEC boundaries for Alternative B. Proposed special management for each ACEC under Alternative B is included in Appendix J.

Table 2-18: Areas of Critical Environmental Concern Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
Anvik Traditional Trapping Area ACEC Not managed as an ACEC.	**Anvik Traditional Trapping Area ACEC** (21,366 acres) Relevance and Importance criteria: Cultural Resources	**Anvik Traditional Trapping Area ACEC** Not designated as an ACEC.	**Anvik Traditional Trapping Area ACEC** Same as Alternative C.
Anvik River ACEC (114,386 acres) Relevance and Importance criteria: Fisheries	**Anvik River ACEC** Not managed as an ACEC. 100,948 acres within the existing Anvik River ACEC would be managed as the Anvik River Watershed ACEC. 13,438 acres within the existing Anvik River ACEC boundary would no longer be managed as an ACEC.	**Anvik River ACEC** Not designated as an ACEC.	**Anvik River ACEC** Same as Alternative C.

Alternative A	Alternative B	Alternative C	Alternative D
Anvik River Watershed ACEC Not managed as an ACEC.	**Anvik River Watershed ACEC** (248,867 acres) Relevance and Importance criteria: Fisheries. Anvik River Watershed ACEC would encompass 100,948 acres of land within the existing Anvik River Watershed.	**Anvik River Watershed ACEC** Not designated as an ACEC.	**Anvik River Watershed ACEC** Same as Alternative C.
Gisasa River ACEC (278,055 acres) Relevance and Importance criteria: Fisheries	**Gisasa River ACEC** Same as Alternative A, but would be 278,241 acres	**Gisasa River ACEC** Not designated as an ACEC.	**Gisasa River ACEC** Same as Alternative C.
Inglutalik ACEC (71,713 acres) Relevance and Importance criteria: Fisheries	**Inglutalik ACEC** Same as Alternative A, but would be 70,888 acres	**Inglutalik ACEC** Not designated as an ACEC.	**Inglutalik ACEC** Same as Alternative C.
Kateel River ACEC (568,083 acres) Relevant and importance criteria: Fisheries	**Kateel River ACEC** Same as Alternative A, but would be 692,659 acres	**Kateel River ACEC** Not designated as an ACEC.	**Kateel River ACEC** Same as Alternative C.
Nulato River ACEC Not managed as an ACEC.	**Nulato River ACEC** (344,182 acres) Relevance and Importance criteria: Fisheries Nulato River ACEC would encompass 649 acres of land within the existing North River ACEC boundary and 868 acres within the existing drainages of the Unalakleet ACEC boundary.	**Nulato River ACEC** Not designated as an ACEC.	**Nulato River ACEC** Same as Alternative C.
Shaktoolik River ACEC (192,591 acres) Relevance and Importance criteria: Fisheries	**Shaktoolik River ACEC** Same as Alternative A, but would be 191,067 acres Shaktoolik River ACEC would encompass 1,621 acres of land within the existing North River ACEC boundary.	**Shaktoolik River ACEC** Not designated as an ACEC.	**Shaktoolik River ACEC** Same as Alternative C.
Sheefish Spawning ACEC Not managed as an ACEC.	**Sheefish Spawning ACEC** (696,901 acres) Relevance and Importance criteria: Cultural Resources, Fisheries	**Sheefish Spawning ACEC** Not designated as an ACEC.	**Sheefish Spawning ACEC** Same as Alternative C.
Swift River Whitefish Spawning ACEC Not managed as an ACEC.	**Swift River Whitefish Spawning ACEC** (220,032 acres) Relevance and Importance criteria: Fisheries	**Swift River Whitefish Spawning ACEC** Not designated as an ACEC.	**Swift River Whitefish Spawning ACEC** Same as Alternative C.
Tagagawik River ACEC Not managed as an ACEC.	**Tagagawik River ACEC** (301,044 acres) Relevance and Importance criteria: Cultural Resources	**Tagagawik River ACEC** Not designated as an ACEC.	**Tagagawik River ACEC** Same as Alternative C.

Alternative A	Alternative B	Alternative C	Alternative D
Ungalik River ACEC (112,719 acres) Relevance and Importance criteria: Fisheries	**Ungalik River ACEC** Same as Alternative A, but would be 113,454 acres	**Ungalik River ACEC** Not designated as an ACEC.	**Ungalik River ACEC** Same as Alternative C.
North River ACEC (132,200 acres) Relevance and Importance criteria: Fisheries	**North River ACEC** Not managed as an ACEC. 67,315 acres within the existing North River ACEC would be managed as part of the Nulato River ACEC, Shaktoolik ACEC, and Unalakleet River Watershed ACEC. 64,885 acres within the existing North River ACEC boundary would no longer be managed as an ACEC.	**North River ACEC** Not designated as an ACEC.	**North River ACEC** Same as Alternative C.
Drainages of the Unalakleet ACEC (403,378 acres) Relevance and Importance criteria: Fisheries and Cultural	**Drainages of the Unalakleet ACEC** Not managed as an ACEC. 300,836 acres within the existing drainages of the Unalakleet ACEC would be managed as part of the Nulato River ACEC and Unalakleet River Watershed ACEC. 102,542 acres within the existing drainages of the Unalakleet ACEC boundary would no longer be managed as an ACEC.	**Drainages of the Unalakleet ACEC** Not designated as an ACEC.	**Drainages of the Unalakleet ACEC** Same as Alternative C.
Unalakleet River Watershed ACEC Not managed as an ACEC.	**Unalakleet River Watershed ACEC** (733,995 acres) Relevance and Importance criteria: Cultural Resources, Fisheries. Unalakleet River Watershed ACEC would encompass 299,968 acres of land within the existing drainages of the Unalakleet ACEC boundary and 65,046 acres within the existing North River ACEC boundary.	**Unalakleet River Watershed ACEC** Not designated as an ACEC.	**Unalakleet River Watershed ACEC** Same as Alternative C.
Box River Treeline RNA (13,592 acres) Relevance and Importance criteria: Not found to meet criteria	**Box River Treeline RNA** Not designated as an ACEC.	**Box River Treeline RNA** Same as Alternative B.	**Box River Treeline RNA** Same as Alternative B.
Peregrine Falcon Nesting Habitat ACEC (6,354 acres) Relevance and Importance criteria: Not found to meet criteria	**Peregrine Falcon Nesting Habitat ACEC** Not designated as an ACEC.	**Peregrine Falcon Nesting Habitat ACEC** Same as Alternative B.	**Peregrine Falcon Nesting Habitat ACEC** Same as Alternative B.
Kuskokwim River Raptor Nesting Habitat ACEC (4,896 acres) Relevance and Importance criteria: Not found to meet criteria	**Kuskokwim River Raptor Nesting Habitat ACEC** Not designated as an ACEC.	**Kuskokwim River Raptor Nesting Habitat ACEC** Same as Alternative B.	**Kuskokwim River Raptor Nesting Habitat ACEC** Same as Alternative B.

Alternative A	Alternative B	Alternative C	Alternative D
Total ACEC Acreage (percentage of planning area) by Alternative A 1,884,376 acres (14%)	**Total ACEC Acreage (percentage of planning area) by Alternative B** 3,912,698 acres (29%)	**Total ACEC Acreage (percentage of planning area) by Alternative C** No acreage would be designated as ACECs	**Total ACEC Acreage (percentage of planning area) by Alternative D** No acreage would be designated as ACECs

2.7.20 National Trails

Actions Common to All Action Alternatives for National Trails

1. Establish the INHT National Trail Management Corridor (NTMC) within the planning area, composed of three geographically distinct areas. The purpose of the NTMC is to conserve the resources, qualities, values, associated settings, and the primary uses that support the nature and purpose of the INHT. Detailed goals and objectives for the INHT on BLM lands, aimed at fulfilling the intent of the NTSA, are found in Appendix G. The areas identified as the INHT NTMC (listed below) are further referenced in Table 2-19.
   - **Farewell Burn –** located south of Nikolai, Alaska
   - **Kaltag Portage –** located between Unalakleet and Kaltag, Alaska
   - **Rohn –** located southeast of Nikolai
2. Approve and manage SRPs on a case-by-case basis.
3. Designate the INHT as a TMA for route designation during a travel management planning process. See Section 2.7.18 for travel management decisions for the INHT TMA.
4. Mineral actions in the INHT NTMC would be managed with the following prescriptions:
   - In accordance with 43 CFR 3400.2, coal leases shall not be issued on federal lands within the National System of Trails (see BLM M5280 4.2 E.6.i.).
   - New audible and atmospheric effects will not exceed current levels in the NTMC. Proposals that introduce new, or higher than current level, audible (noise) and atmospheric (e.g., smoke, dust) effects within the NTMC would be authorized only if they do not cause more than short-term, minimal impacts to the INHT, significant INHT-related historical or recreational sites, or INHT-related recreational activities (acceptable increases in sound levels in the short term would be 6 decibels and long term up to 3 decibels; smoke and dust would be limited to 50 percent opacity in the short term and 20 percent in the long term).
5. If the INHT is located within any lands where a withdrawal is revoked and if the State of Alaska, through the Statehood Act, or an ANCSA corporation, through the ANCSA, desires conveyance of the parcels: at the time of any future conveyance to the State of Alaska or ANCSA corporation, a reservation would be made for the INHT under the NTSA and Section 906(I) of the ANILCA.

6. While providing for ANILCA access provisions, the travel management classification for the INHT NTMC would be Limited. Travel management actions by alternative for the INHT NTMC (which corresponds to the INHT TMA) are included in Section 2.7.18 and Table 2-17.
7. If winter casual and subsistence OHV use results in degradation of the resources or prevents trail management that meets requirements of the NTSA, then this would be prohibited in affected areas.
8. Within the planning area, the BLM holds an NTSA reservation to the federal government for some INHT segments on blocks of land conveyed to the State of Alaska under the statehood act. These segments of trail will not be managed as part of the NTMC and would not be subject to the prescriptions described in this section. Similarly, these segments would not be managed as TMAs and/or for surface travel management, nor would they be managed as an SRMA. The BLM's authority is strictly limited to the NTSA and language found on the land patent documents agreed to by the State at the time of conveyance.
9. Fire management within the NTMC would be as follows:
    - The Rohn Site and BLM public shelter cabins along the INHT NTMC would be prioritized for both fuels reduction and fire protection.
    - NRHP-eligible historic roadhouses along the INHT NTMC would be prioritized for fuels treatment and fire protection.
    - Fire management in the INHT NTMC would be implemented without ATVs, dozers, or other surface-disturbing vehicles unless specifically authorized by the AO.

Description of National Trails Actions by Alternative

Table 2-19 describes proposed National Trails actions by alternative. See Maps 2-36, 2-49, and 2-50, for additional information.

Table 2-19: National Trails Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
No current RMP management direction identified. Management direction is determined on a case-by-case basis. The *Iditarod National Historic Trail, Seward to Nome Route: A Comprehensive Management Plan* (BLM 1986b) is the only current planning document for the INHT.	**INHT National Trail Management Corridor** Establish the INHT NTMC within the planning area. This would comprise three geographically distinct areas: • Farewell Burn - located south of Nikolai, Alaska (46,591 acres) • Kaltag Portage - located between Unalakleet and Kaltag, Alaska (241,512 acres) • Rohn - located southeast of Nikolai (363 acres)	**INHT National Trail Management Corridor** Establish the INHT NTMC within the planning area. The INHT NTMC would comprise three geographically distinct areas: • Farewell Burn - located south of Nikolai, Alaska (31,367 acres) • Kaltag Portage - located between Unalakleet and Kaltag, Alaska (241,512 acres) • Rohn - located southeast of Nikolai (363 acres)	**INHT National Trail Management Corridor** Same as Alternative C.
No current RMP management direction identified. Management direction is determined on a case-by-case basis. The *Iditarod National Historic Trail, Seward to Nome Route: A Comprehensive Management Plan* (BLM 1986b) is the only current planning document for the INHT.	**Lighting in the INHT NTMC Viewshed** Do not allow structures that require air safety lighting in the NTMC. Require hooded surface lighting.	**Lighting in the INHT NTMC Viewshed** Same as Alternative B.	**Lighting in the INHT NTMC Viewshed** Structure lighting restrictions determined on a case-by-case basis with a site-specific analysis that considers the darkness / winter-time use of the trail and the effect of lighting colors on trail experiences
VRM Decisions in the INHT NTMC Viewshed No VRM level is currently designated.	**VRM Decisions in the INHT NTMC Viewshed** See Section 2.7.10, Table 2-9, for visual resource management for the INHT NTMC.	**VRM Decisions in the INHT NTMC Viewshed** See Section 2.7.10, Table 2-9, for visual resource management for the INHT NTMC.	**VRM Decisions in the INHT NTMC Viewshed** See Section 2.7.10, Table 2-9, for visual resource management for the INHT NTMC.
FLPMA Withdrawals No current management direction was identified. Management direction is determined on a case-by-case basis	**FLPMA Withdrawals** See Section 2.7.16, Table 2-15, for proposed withdrawals within the INHT.	**FLPMA Withdrawals** See Section 2.7.16, Table 2-15, for proposed withdrawals and withdrawal revocations within the INHT.	**FLPMA Withdrawals** No proposed FLPMA withdrawals.
Mineral Decisions in the INHT NTMC *SWMFP (BLM 1981)* R-3.1: Protect the federally managed portion of the INHT and associated historic sites from damage or disturbance due to other resources use. Section 7(c) of the NTSA (October 2, 1968) requires that other uses of a national trail do "not substantially interfere with the nature and purposes of the trail" and "to the extent practicable, efforts shall be made to avoid activities incompatible with the purposes for which such trails were established."	**Mineral Decisions in the INHT NTMC** Subject to valid existing rights, the INHT NTMC would be: • Withdrawn from locatable mineral exploration and development • Closed for leasable development • Closed for salable mineral development The INHT NTMC would be: • Closed to seismic exploratio	**Mineral Decisions in the INHT NTMC** Subject to valid existing rights the INHT NTMC would be: • Open to locatable mineral exploration and development • NSO for leasable development • Open for salable mineral development The INHT NTMC would be: • Closed to seismic exploration Locatable, leasable, salable plans of development would be authorized if it is determined by the AO that impacts, both direct and cumulative, associated with the action would not substantially interfere with the nature and purpose of the INHT	**Mineral Decisions in the INHT NTMC** Subject to valid existing rights the INHT NTMC would be: • Open to locatable mineral exploration and development • Open with Standard Stipulations for oil and gas leasing • Open for salable mineral development The INHT NTMC would be: • Open for seismic exploration Locatable, leasable, salable plans of development would be authorized if it is determined by the AO that impacts, both direct and cumulative, associated with the action would not substantially interfere with the nature and purpose of the INHT.

Alternative A	Alternative B	Alternative C	Alternative D
SWMFP (BLM 1981) R-3.1: Protect the federally managed portion of the INHT and associated historic sites from damage or disturbance due to other resources use. Section 7(c) of the NTSA (October 2, 1968) requires that other uses of a national trail do "not substantially interfere with the nature and purposes of the trail" and "to the extent practicable, efforts shall be made to avoid activities incompatible with the purposes for which such trails were established."	**Surface-Disturbing Activities and Other Realty Decisions** Surface-disturbing activities would not be permitted in the NTMC unless they are allowed under ANILCA Title XI. While providing for ANILCA access provisions, realty actions could be authorized within the INHT NTMC if it is determined by the AO that: • They are not visible from the INHT NTMC. • Impacts (direct, indirect, and cumulative) associated with the action would be consistent with the nature and purpose of the INHT. Realty actions or surface-disturbing activities would be authorized if it is determined by the AO that the following could be achieved: • They are outside of the viewshed of the INHT NTMC.	**Surface-Disturbing Activities and Other Realty Decisions** While providing for ANILCA access provisions, realty actions could be authorized within the INHT NTMC if it is determined by the AO that: • They meet VRM class objectives (Section 2.7.10, Table 2-9) for the disturbance area, as viewed from Key Observation Points from the INHT impacted by the disturbance. • Impacts (direct, indirect, and cumulative) associated with the action would be not substantially interfere with the nature and purpose of the INHT. Other realty actions and surface-disturbing activities within the INHT NTMC would be authorized if it is determined by the AO that the following could be achieved: • They are outside of the viewshed of the INHT. • They meet the VRM class objective for the disturbance area, as viewed from portions of the INHT NTMC impacted by the disturbance.	**Surface-Disturbing Activities and Other Realty Decisions** Realty actions associated with access and improvements would be authorized on a case-by-case basis if it is determined by the AO that they would not substantively conflict or interfere with the purpose and nature of the INHT. Other realty actions and permitting of surface-disturbing activities within the INHT NTMC authorized on a case-by-case basis if it is determined by the AO that they would not substantively conflict or interfere with the purpose and nature of the INHT.
Forestry and Woodland Decisions in the INHT NTMC *SWMFP (BLM 1981)* R-3.1: Protect the federally managed portion of the INHT and associated historic sites from damage or disturbance due to other resources use. Section7(c) of the NTSA (October 2, 1968) requires that other uses of a national trail do "not substantially interfere with the nature and purposes of the trail" and "to the extent practicable, efforts shall be made to avoid activities incompatible with the purposes for which such trails were established."	**Forestry and Woodland Decisions in the INHT NTMC** See Section 2.7.12, Table 2-11, for woodland harvest decisions in the INHT NTMC.	**Forestry and Woodland Decisions in the INHT NTMC** See Section 2.7.12, Table 2-11, for woodland harvest decisions in the INHT NTMC.	**Forestry and Woodland Decisions in the INHT NTMC** See Section 2.7.12, Table 2-11, for woodland harvest decisions in the INHT NTMC.
Grazing Decisions in the INHT NTMC *SWMFP (BLM 1981)* R-3.1: Protect the federally managed portion of the INHT and associated historic sites from damage or disturbance due to other resources use. Section 7(c) of the NTSA (October 2, 1968) requires that other uses of a national trail do "not substantially interfere with the nature and purposes of the trail" and "to the extent practicable, efforts shall be made to avoid activities incompatible with the purposes for which such trails were established."	**Grazing Decisions in the INHT NTMC** See Section 2.7.13, Table 2-12, for grazing decisions.	**Grazing Decisions in the INHT NTMC** See Section 2.7.13, Table 2-12, for grazing decisions.	**Grazing Decisions in the INHT NTMC** See Section 2.7.13, Table 2-12, for grazing decisions.

2.7.21 Wild and Scenic Rivers

Actions Common to All Action Alternatives for Wild and Scenic Rivers

1. WSR Corridor Management
    - Acquire any Native allotments available from willing sellers within the designated wild river corridor.
    - Maintain the withdrawal from mineral entry within the WSR corridors, subject to valid existing rights.
    - Prohibit harvesting of house logs on BLM-managed land within the WSR corridors except for subsistence use as provided for under ANILCA Title 8.
    - Prohibit permanent or semi-permanent commercial developments (such as tent platforms). Any campsite facilities associated with commercial activities must have the ability to be completely moved every 14 days without vegetation cutting or soil disturbance. Campsites and other semi-permanent developments which will be used for research, educational, subsistence, or other non-commercial endeavors will be issued on a case-by-case basis
    - Limit stays for non-permitted/ non-cabin casual use to 14 consecutive days within a 28-day period. After a camp has been occupied for 14 days, the camp must be moved at least 2 miles to start a new 14-day period.
    - Authorize commercial, competitive, organized group use, and commercial filming, in conjunction with an SRP or a land use permit, on a case-by-case basis.
    - The following types of SRPs would not be permitted in the WSR corridors: motorized water sport/events; events involving on-highway vehicles such as cars, trucks, or SUVs; vending services; or other activities that would not maintain or enhance the ORVs.
2. Travel-Related Decisions
    - Maintain semi-primitive motorized recreation opportunities, experiences, and outcomes.
    - Motorized transportation for all river users would be limited to motorboats, airplanes, and snowmobiles on non-navigable BLM-managed waterways above Tenmile Creek per the existing management plan (BLM 1983).
    - No construction or formal improvement of aircraft landing areas would be allowed.
    - To minimize noise intrusion, inboard motorboats, airboats, and hovercraft are not allowed for non-subsistence use on BLM-managed public lands and waters in the designated WSR corridors. Helicopters would be allowed to land in WSR corridors as part of official duties conducted by State and federal employees. Helicopter use by other users would be considered on a case-by-case basis and would require a permit on BLM-managed public lands and waters.
    - Prohibit public helicopter landing within the WSR corridors except by permit. The BLM would make a determination regarding these permits on a case-by-case basis as informed by appropriate site-specific NEPA analysis and disclosure.
    - Helicopter landing associated with official duties conducted by State and federal employees would require approval of the BLM AO.

- Any BLM-permitted activities involving aircraft would be required to maintain 2,000 feet AGL above the WSR corridors for helicopter or fixed-wing flights, with the exception of administrative and permitted landing access or landing, taking off, or operating in an emergency situation.
- The landing and takeoff of fixed winged aircraft with minimal clearing over rocks, downed longs, and brush is allowed.
- Provide adequate and feasible access to private inholdings, as mandated by ANILCA.

Description of Wild and Scenic Rivers Actions by Alternatives

Table 2-20 describes proposed WSR actions by alternative. See Maps 2-51 and 2-52, for additional information.

Table 2-20: WSR Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
A WSR study was performed by BLM that identified the following eligible WSR segments. These eligible WSR segments would be managed according to BLM Manual 6400 (BLM 2012c), which includes guidelines that must be considered to protect ORVs, water quality, and free-flowing condition. • Anvik River – 61,100 acres • Bear Creek (Nikolai) – 17,224 acres • Big River – 21,859 acres • Blackwater Creek – 7,617 acres • Canyon Creek – 8,233 acres • Middle Fork Kuskokwim River – 23,212 acres • North Fork Unalakleet River – 28,987 acres • Otter Creek (Anvik) – 20,130 acres • Otter Creek (Tuluksak) – 3,247 acres • Pitka Fork Middle Fork Kuskokwim River – 24,921 acres • Salmon River (Nikolai) – 10,536 acres • Sheep Creek – 15,861 acres • Sullivan Creek – 9,192 acres • Swift River (Anvik) – 16,381 acres • Tatlawiksuk – 8,975 acres • Theodore Creek – 7,384 acres • Yellow River – 28,409 acres • Yukon River - 18,908 acres • The Unalakleet Wild River Corridor would continue to be designated: 46,953 acres *SWMFP (BLM 1981)* *Goals:* Identify and recommend for designation any rivers in the planning area that are suitable for designation as components of the National System. *Objectives:* Identify a water trail system for recreation use on BLM-managed lands. *Central Yukon RMP (BLM 1986a):* *Goals:* None. *Objectives from 1983 Unalakleet National Wild River Plan* (BLM 1983): To preserve the environment and ecosystems of the river and river corridor in a natural, primitive condition. To preserve the free-flowing condition of the waters and prevent degradation of water quality. To provide high-quality recreational opportunities in a primitive environment for present and future generations. To provide an environment for interpretive, scientific, educational and wildlife/wildlands-oriented use. To protect valid and existing rights and future rights granted pursuant to appropriate federal and State laws.	The following WSR would continue to be a designated Wild River: • Unalakleet Wild River Corridor – 46,953 acres The following eligible WSR segments are suitable as potential additions to the National WSR System. The acreage provided indicates the management corridor for each suitable WSR. All proposed management described above under Actions Common to All Action Alternatives would apply to these acreages (unless otherwise indicated). • Anvik River – 61,100 acres • Bear Creek (Nikolai) – 17,224 acres • Big River – 21,859 acres • Blackwater Creek – 7,617 acres • Canyon Creek – 8,233 acres • Middle Fork Kuskokwim River – 23,212 acres • North Fork Unalakleet River – 28,987 acres • Otter Creek (Anvik) – 20,130 acres • Otter Creek (Tuluksak) – 3,247 acres • Pitka Fork Middle Fork Kuskokwim River – 24,921 acres • Salmon River (Nikolai) – 10,536 acres • Sheep Creek – 15,861 acres • Sullivan Creek – 9,192 acres • Swift River (Anvik) – 16,381 acres • Tatlawiksuk – 8,975 acres • Theodore Creek – 7,384 acres • Yellow River – 28,409 acres • Yukon River - 18,908 acres See Map 2-51	The following WSR would continue to be a designated Wild River: • Unalakleet Wild River Corridor – 46,953 acres All proposed management described above under Actions Common to All Action Alternatives would apply to this acreage (unless otherwise indicated). Eligible WSR segments are not suitable as potential additions to the NWSRS. The eligible WSR acreages shown in Alternative A would be managed under other land use allocations and management actions as described in this alternative. See Map 2-52	Same as Alternative C. See Map 2-52

Alternative A	Alternative B	Alternative C	Alternative D
SWMFP (BLM 1981) Recreation management and administration will be directed by decisions in the existing MFP. Recreation management will generally emphasize the continued availability of dispersed and unstructured outdoor recreation opportunities. Manage the Unalakleet Wild River Corridor under the existing 1983 river management plan. Participate when other agencies initiate recreation river management planning when the BLM has partial responsibility. Actively participate in fire management planning. Determine reason OHV use for each proposed action. Protect the federally managed portion of the INHT and associated historic sites from damage or disturbance due to other resource uses. **Central Yukon RMP (BLM 1986a):** The primary objective for management of recreation resources is to allow opportunities that presently exist, and support and encourage opportunities for improving access. Require no permits for vehicles under 1500 pounds (GVWR). Restrict access to public lands for "off road vehicles" having a gross vehicle weight greater than 1,500 pounds. Access for ORVs having a GVWR greater than 1,500 pounds will be considered on a case-by-case basis. **Unalakleet National Wild River Plan (BLM 1983):** Traditional means of access such as outboard motorboats, airplanes, dogsleds, and snowmobiles are allowed for all river users. Other means of access, such as inboard motorboats, airboats, hovercraft, and ATVs are not allowed in the corridor.	**Travel Management Decisions** WSRs and recommended suitable WSR segments would follow travel and transportation management decisions for the Unalakleet Wild River Corridor under Alternative B as described in Section 2.7.18, Table 2-17.	**Travel Management Decisions** See Section 2.7.18, Table 2-17 for travel management decisions for the Unalakleet Wild River Corridor.	**Travel Management Decisions** See Section 2.7.18, Table 2-17 for travel management decisions for the Unalakleet Wild River Corridor.
Visual Resource Management Decisions *SWMFP (BLM 1981)* CR-1.1: Define the seen areas of the Unalakleet River Wild River Corridor and manage Wild sections of these as VRM Class I. Manage those sections outside the Wild River corridor as VRM Class II. Management will particularly address potential tributary crossings for transportation, ROWs, and utilities outside the Wild River corridor withdrawal.	**Visual Resource Management Decisions** See Section 2.7.10, Table 2-9, for VRM decisions for WSR corridors.	**Visual Resource Management Decisions** See Section 2.7.10, Table 2-9, for VRM decisions for WSR corridors.	**Visual Resource Management Decisions** See Section 2.7.10, Table 2-9, for VRM decisions for WSR corridors.

Alternative A	Alternative B	Alternative C	Alternative D
Improvements within Unalakleet Wild River Corridor **Unalakleet National Wild River Plan (BLM 1983):** No current management direction. Management direction is determined on a case-by-case basis.	**Improvements within Unalakleet Wild River Corridor** Prohibit construction or formal improvement of landing areas, campsites, interpretive sites or toilets. Clearing of vegetation near shelter cabins would be limited to the minimum necessary to protect the cabin from fire.	**Improvements within Unalakleet Wild River Corridor** Allow construction or formal improvement of campsites, interpretive sites or toilets only as needed to maintain those facilities for use. These improvements would be completed with the minimal tools and materials necessary and would be compatible with the primitive setting and ORVs for which the WSR was designated and consistent with VRM Class II. This includes clearing of vegetation near shelter cabins.	**Improvements within Unalakleet Wild River Corridor** Allow construction or formal improvement of campsites, interpretive sites or toilets if they do not substantively conflict with the ORVs for which the WSR was designated and compatible with VRM Class II as determined by the AO on a case-by-case basis.
Unmanned Aerial System (UAS) Uses No current management direction with regard to the use of UAS in WSR areas was identified. Management direction is determined on a case-by-case basis.	**UAS Uses** Within WSR corridor, takeoff and landing of casual use UAS would not be allowed. The BLM would provide educational materials for UAS casual users regarding the potential impacts of UAS use over the WSR corridor on the values for which that corridor is managed. Permitted UAS use would not be allowed to take off or land within the WSR corridor nor operate UAS over the WSR corridor. Administrative use of UAS, including takeoff and landing within the WSR corridor and operation over the WSR corridor, would be authorized on a case-by-case basis per DOI Operational Procedures Memorandum (OPM)-11 and if the AO Officer determines it does not conflict with the ORVs for the WSR.	**UAS Uses** Within WSR corridor, takeoff and landing of casual use UAS would not be allowed Administrative use of UAS, including takeoff and landing within the WSR corridor and operation over the WSR corridor, would be authorized on a case-by-case basis per DOI OPM-11 and if the AO Officer determines it does not conflict with the ORVs for the WSR The BLM would provide educational materials for UAS casual users regarding the potential impacts of UAS use over the WSR corridor on the values for which that corridor is managed.	**UAS Uses** Within WSR corridor, allow takeoff and landing of casual use UAS. Use of UASs for administrative use or permitted use would be analyzed on a case-by-case basis per DOI OPM-11. The BLM would provide educational materials for UAS casual users regarding the potential impacts of UAS use over the WSR corridor on the values for which that corridor is managed.

2.7.22 Hazardous Materials and Health and Human Safety

Actions Common to All Action Alternatives for Hazardous Materials and Health and Human Safety

1. Hazardous Materials
    - All BLM-permitted activities, at a minimum, must comply with all applicable federal and State laws, regulations, and policy regarding use of hazardous materials.

- Hazardous materials include fuel and oil, Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Hazardous Substances, Resource Conservation and Recovery Act Hazardous Waste, Hazardous Materials as identified by 49 CFR 171-177, Transportation.
- Prevent spills of hazardous materials by requiring:
  - Spill prevention control and countermeasures plan when applicable (1,320 gallons cumulative capacity for storage of oil, potential impact to Waters of the U.S., or causing unnecessary or undue degradation, as required by federal law)
  - Secondary containment of all hazardous materials in 55-gallon drum capacity and greater
- For BLM-permitted activities, no storage of hazardous materials allowed within 100 feet of OHWM of surface water (rivers, streams, lakes, and springs) and wetlands.
- For BLM-permitted activities, no hazardous materials storage within 0.25 mile of centerline of designated WSRs.
- For BLM-permitted activities, no storage of hazardous materials would be allowed within the 100-year floodplain of rivers or streams or within 100 feet of high the water mark of surface waters not in a 100-year floodplain, such as lakes, ponds, springs, and wetlands. Exceptions could be allowed on a case-by-case basis when approved spill prevention practices are implemented to prevent accidental release of the hazardous materials. Activities excepted can include but are not limited to loading or unloading watercraft or floatplanes used to transport bulk or containerized hazardous materials; or refueling motorboats, float planes, ski planes, etc. Wildland fire management activities such as refueling equipment (pumps, drip torches, and chainsaws) and storage of the associated fuel, are specifically excepted from these prohibitions. Although fuels could be off-loaded from aircraft on ice, fuels shall not be stored on lake or river ice.
- All BLM-permitted activities using hazardous materials would have to comply with BMPs and SOPs (Appendix K).
- Compliance inspections/monitoring required for all BLM-permitted activities prior to permit closeout.
- All withdrawals relinquished to the BLM would be required to complete a Phase 1 Environmental Site Assessment documenting Recognized Environmental Conditions. If environmental liabilities are identified, the holder of the withdrawal would be required to complete cleanup prior to relinquishment. An updated Phase I Environmental Site Assessment would be completed to document cleanup and that there are no known environmental liabilities remaining on the property.
- The BLM would prioritize cleanup of hazardous materials sites with eminent or existing discharge of hazardous materials based on the following criteria:
  - Threatens public health and safety
  - Adversely impacts drinking water sources
  - Occurs within or adjacent to HVWs
  - Would affect Essential Fish Habitat

  - Would affect cultural resources
  - Are on lands priority selected for conveyance to Native corporations or the State of Alaska
- BLM permittees are responsible for cleanup of any hazardous materials resulting from their permit.

2. Health and Human Safety
   - The BLM State Aviation Plan will comply with FAA requirements for low-level flights, flights over sensitive resource areas, and use of UAS.
   - All motorized vehicles on BLM-managed public lands would have U.S. Forest Service-approved spark arrestors (see 43 CFR 8343.1(c)). The BLM would collaborate with rural communities and the State of Alaska in upgrading user exhausts to meet these standards.
   - All locatable and salable operations would have to comply with Mine Safety Health Administration requirements for noise and safety.

Description of Hazardous Materials Actions by Alternative

Table 2-21 describes proposed Hazardous Materials actions by alternative.

Table 2-21: Hazardous Materials and Health and Human Safety Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
No current management direction identified. Management direction is determined on a case-by-case basis.	Where feasible, facilities using oil for energy production at sites where complete cleanup is not possible in the event of a spill, implementation of alternative power or fuel (e.g., liquified petroleum gas [LPG], liquified natural gas [LNG], propane, solar, wind, off-site generated electricity) is required to eliminate the risk of spills. Both the need and feasibility would be identified at the site-specific project level and analyzed with implementation-level NEPA. Existing facilities using oil in areas where complete cleanup is not possible would be retrofitted for alternative power or fuel (e.g., LPG, LNG, propane, solar, wind, off-site generated electricity) to eliminate the risk of spills. This need would be identified at the site-specific project level at time of permit/lease/ROW renewal and analyzed with implementation-level NEPA.	Where feasible, facilities using oil for energy production at sites where complete cleanup is not possible in the event of a spill, implementation of alternative power or fuel (e.g., LPG, LNG, propane, solar, wind, off-site generated electricity) is required to eliminate the risk of spills. Both the need and feasibility would be identified at the site-specific project level and analyzed with implementation-level NEPA.	Same as Alternative A.

2.7.23 Support for BSWI Communities

For this planning effort, a "Support for BSWI Communities" theme was developed, which allows everyone to see, in one place, the measures designed to maintain and improve the quality of life in rural BSWI communities. In Chapter 3, this theme will allow the BLM to identify the net effects, beneficial and adverse, of each alternative on BSWI communities.

Actions Common to All Action Alternatives for Support for BSWI Communities

1. When making decisions about hunting guide/outfitter SRPs, include community interests and impacts in the selection criteria and capacity determinations for issuing commercial hunting guide permits.
2. Support community efforts to train residents as guides.
3. Encourage permitted hunting guide/outfitter businesses to coordinate with local communities, such as donating meat to the community and working cooperatively to identify and address conflicts.
4. The proposed restriction on inboard motorboats, airboats, and hovercraft on BLM-managed public lands and waters within the Unalakleet Wild River Corridor would not apply to subsistence users, and restrictions on summer OHV use are more lenient for subsistence uses than for casual uses.
5. Per Section 811 of ANILCA, the BLM would manage lands such that all rural residents engaged in subsistence uses would have reasonable access to subsistence resources on public lands, which allows for appropriate use for subsistence purposes of snowmobiles, motorboats, and other means of surface transportation traditionally employed for such purposes by residents, subject to reasonable regulations.
6. If summer use routes are designated during implementation-level travel management planning, the criteria for designating routes would include existing routes accessing subsistence resources. In sensitive resources areas, place fewer restrictions on subsistence use than on casual use.
7. Lands would be made available for lease or sale to benefit local communities per the criteria for R&PP. Public objectives such as expansion of communities and economic development would be included as criteria for land exchange or disposal. As required based on changes in climate, consider providing opportunities for community relocation through the use of ROW grants, permitting, exchanges, R&PP, leases, or other appropriate permitting actions as determined mutually beneficial for the community and the long-term sustainability of BLM-managed public lands.
8. No wind, solar, or hydropower is expected in the planning area and little opportunity exists due to the remoteness of the BLM-managed public lands to existing communities and their power grids. Any future action could be acted upon on a case-by-case basis throughout the planning area. Hydropower projects would be addressed by the Federal Energy Regulatory Commission (FERC).
9. Numerous communities within the planning area have considered biomass heating projects. While BLM-managed public lands are not the most accessible, there have been inquiries as to the availability of wood from these lands. BLM supports the need for biomass heating sources throughout the planning area as identified in the commercial woodland harvest management actions shown in Table 2-11.
10. Maintain habitat for intact wild stock fish populations to sustain the diverse and intact ecosystems that support subsistence lifestyles and provide for rural economic opportunity.

11. Where priority species are present, manage habitat to support self-sustaining populations. Priority species include SSS and those species utilized for subsistence.
12. Support local efforts to develop sources of energy that would help to decrease electricity costs for rural communities in the planning area.
13. Support community-lead development and maintenance of emergency shelter cabins in areas used for subsistence. Though the development could increase the size of the route network to provide access to these cabins, this management action would also provide additional safety for subsistence users.
14. Provide adequate and culturally appropriate notification to affected communities regarding BLM policies, regulations, and project implementation related to BLM-permitted activities such as proposed mining plans of operations and SRPs.
15. For BLM-permitted activities, incorporate appropriate levels and types of cultural sensitivity training for people unfamiliar with rural Alaska life and culture.
16. Encourage BLM-permitted operators to use local hire to the extent possible, which would include the commitment to use a local work force as a criterion in the allocation of permits. Commitment to use local work force would be judged by the operator's willingness to train local staff and, to the extent possible, develop work schedules to accommodate subsistence activities.
17. To the extent possible, the BLM would hire and train local workers to work in seasonal or day-to-day operations such as monitoring, surveying, and clearing easement and trail corridors
18. The BLM would work cooperatively with residents from rural communities to maintain existing trail systems on BLM land to be compatible with those on adjacent private lands.
19. The BLM would coordinate and collaborate with rural communities in the ongoing implementation of this RMP, as well as site-specific projects and BLM-permitted activities in the planning area. Avenues for this collaboration include the NEPA and ANILCA 810 processes and associated opportunities for public involvement. This would include the BLM taking an active role in coordinating management planning across federal agencies to avoid overburdening communities that currently have to participate in multiple planning processes.
20. The BLM would regularly monitor rural communities affected by implementation of the RMP to ensure that collaboration and coordination efforts are being effectively implemented. Based on input from this monitoring, the BLM would, if necessary, revise collaborative methods and timing to ensure that community input is considered, and the BLM is clearly communicating how community input is being integrated into both day-to-day management and specific BLM-permitted activities.
21. The BLM would support local community efforts to transfer village knowledge to younger generations through provision of BLM-managed public lands for cultural camps and activities, provision of support staff, and other appropriate methods identified by the communities.

22. The BLM could form partnerships with Alaska Native tribes and corporations, which have Tribal Employment Rights Ordinances to support the program to develop quality local workforce and provide employment/training opportunities, to establish a business environment that is conducive to future economic opportunities, and to strengthen and stabilize tribal governance.
23. The BLM would develop travel management plans to identify travel routes and corridors between communities. One of the criteria for Implementation-level travel planning is to meet connectivity and destination goals for rural communities which would allow opportunities for local rural communities to be involved in the consideration of alternatives for designation of travel routes and the determination of which transportation modes are allowed on those routes. Actions would include designation of winter trails system, identification of other safety cabin locations on BLM land that support inter-village travel, and winter trail system signage (see Section 2.7.18 for detailed travel and transportation management decisions).
24. As funding and workload permits, the BLM would consider hiring employees at strategic locations within in the planning area. This could include implementing a program similar to the USFWS Refuge Information Technician system, whereby community residents are hired as BLM employees (or through a similar mechanism) to develop a system of BLM representatives in BSWI rural communities. These representatives would coordinate management activities and conduct outreach between the BLM and the rural communities.

Description of Support of BSWI Communities Actions by Alternative

Table 2-22 provides a summary of other management decisions developed to provide a range of alternatives to support communities in the planning area. For details on those management decisions, see the respective alternatives section for that resource (Sections 2.7.1 through 2.7.22).

Table 2-22: Support of BSWI Communities Actions by Alternative

Alternative A	Alternative B	Alternative C	Alternative D
HVW Summary No current management direction was identified. Management direction is determined on a case-by-case basis.	**HVW Summary** (See Section 2.7.3 for detailed watershed management decisions) Designation and management of HVWs would support BSWI communities by increasing protection of vulnerable, higher-priority aquatic resources. Commercial woodland harvest in 100-year floodplains would be prohibited. All HVWs would be ROW avoidance areas. Subject to valid existing rights, HVWs would be closed to mineral leasing, withdrawn from locatable entry, and closed to salable mineral development.	**HVW Summary** (See Section 2.7.3 for detailed watershed management decisions) Same purpose and objectives for HVWs as under Alternative B. Alternative C generally provides a level of protection that is less stringent than Alternative B. Subject to valid existing rights, HVWs would be NSO leasable, open to locatable entry, and open to salable mineral development on a case-by-case basis. Commercial woodland timber harvest would be permitted in HVWs. All HVWs would be ROW avoidance areas.	**HVW Summary** (See Section 2.7.3 for detailed watershed management decisions) Same purpose and objectives for HVWs as under Alternative B. Alternative D generally provides the least stringent level of protection compared with Alternative B and C. HVWs would be Standard Stipulations leasable, open to locatable entry, and open to salable. Commercial woodland harvest would be permitted on a case-by-case basis based on BLM watershed monitoring. All HVWs would be ROW avoidance areas.

Alternative A	Alternative B	Alternative C	Alternative D
ACEC Summary The designation and management of ACECs supports BSWI communities by paying special management attention to identified areas to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards. Currently there are 11 existing ACECs covering 1,884,376 acres within the planning area; all from 1980-era land use plans.	**ACEC Summary** (See Section 2.7.19 and Appendix J for detailed ACEC management decisions) Five existing ACECs would still exist Seven additional ACECs would be established, two for cultural resources, three for fisheries, and two for both cultural resources and fisheries. Three existing ACECs would no longer be managed as ACECs although some of their acreage would be managed as part of a new ACEC established under Alternative B Three existing ACECs would no longer be managed as ACECs and none of their acreage would be managed as an ACEC. Total ACECs would encompass a total of 3,912,698 acres (29% of planning area). For nominated ACECs not found to be relevant and important for cultural resources, the BLM would work with tribes to gather more information on the particular areas and resources. The BLM would work with tribes to document them as either archaeological sites or Traditional Cultural Properties, as appropriate, and evaluate them for their eligibility for inclusion on the NRHP.	**ACEC Summary** Under Alternative C, there would be no ACECs.	**ACEC Summary** Under Alternative D, there would be no ACECs.
Wildlife Habitat Area Designation Summary No current management direction was identified. Management direction is determined on a case-by-case basis.	**Wildlife Habitat Area Designation Summary** (See Section 2.7.5 for detailed wildlife management decisions) To protect unique wildlife and subsistence resources, and minimize impacts to subsistence resources and reduce subsistence conflict, BLM-managed public land within the Innoko Bottoms Priority Wildlife Habitat Area would be managed with the following stipulations (subject to valid existing rights): • Pursue withdrawal from locatable mineral entry. • NSO for leasable development • Closed to salable development • NSO for surface-disturbing BLM-permitted activities • ROW exclusion area • Casual use airboats and hovercraft would not be allowed on non-navigable waterways on BLM-managed public lands.	**Wildlife Habitat Area Designation Summary** (See Section 2.7.5 for detailed wildlife management decisions) Innoko Bottoms Priority Wildlife Habitat Area would be managed with the following stipulations: • Open to locatable development • NSO for leasable development • Closed to salable development • ROW avoidance area • Casual use airboats and hovercraft would not be allowed on non-navigable waterways on BLM-managed public lands.	**Wildlife Habitat Area Designation Summary** (See Section 2.7.5 for detailed wildlife management decisions) Innoko Bottoms Priority Wildlife Habitat Area would be managed with the following stipulations: • Mineral decisions would be the same as Alternative C • ROW avoidance area • There would be no restrictions on motorized watercraft in non-navigable waters on BLM-managed public lands.

Alternative A	Alternative B	Alternative C	Alternative D
Proposed WSR Travel Management No current management direction was identified. Management direction is determined on a case-by-case basis.	**Proposed WSR Travel Management** (See Sections 2.7.18 and 2.7.21 for detailed management decisions) Casual Summer OHV Access would be prohibited. Subsistence Summer OHV Access would be limited to existing roads, primitive roads, and trails (as shown in the BLM's current route inventory once implementation planning occurs) and would include ATVs only. Snowmobiles only allowed for winter cross country casual and subsistence access.	**Unalakleet Wild River Corridor Travel Management** (See Sections 2.7.18 and 2.7.21 for detailed management decisions) Casual Summer OHV Access would be limited to existing roads, primitive roads, and trails (as shown in the BLM's current route inventory once implementation planning occurs) and would include ATVs only. Subsistence Cross Country Summer OHV Access would be allowed and would include ATVs only. Snowmobiles only allowed for winter cross country casual and subsistence access.	**Unalakleet Wild River Corridor Travel Management** (See Sections 2.7.18 and 2.7.21 for detailed management decisions) Casual Summer OHV Access would be limited to existing roads, primitive roads, and trails (as shown in the BLM's current route inventory once implementation planning occurs) and would include both UTVs and ATVs. Subsistence Cross Country Summer OHV Access would be allowed and would include both UTVs and ATVs. Winter Cross-country OHV Access allowed and would include snowmobiles.
Communications Sites ROW Communication sites evaluated on a case-by-case basis. Management direction is determined on a case-by-case basis.	**Communications Sites ROW** (See Section 2.7.16 for detailed management decisions) Allow expanded use on existing microwave towers that would increase safety along inter-village travel routes with appropriate stipulations to ensure minimal environmental changes to existing sites.	**Communications Sites ROW** (See Section 2.7.16 for detailed management decisions) Communications sites would be allowed at strategic locations along inter-village winter travel route corridors to improve communication and safety. Locations would be determined on a case-by-case basis with appropriate required operating procedures and stipulations.	**Communications Sites ROW** (See Section 2.7.16 for detailed management decisions) Communications sites would be identified on a case-by-case basis. The BLM would support development of cell phone towers and other communication infrastructure on BLM-managed public lands that would improve communication and internet connection for rural communities in the planning area.

Alternative A	Alternative B	Alternative C	Alternative D
Forestry and Woodland Resources *SWMFP (BLM 1981)* F-1.1 Provide for use of forestry products throughout the planning area with priority areas opened for settlement entry. *CYRMP (BLM 1986a)* Maximize opportunities for the harvest of forest products where feasible and practical.	**Forestry and Woodland Resources** See Section 2.7.12, Table 2-11, for forestry and woodland management decisions. Areas within 15 miles of a river, areas within 25 miles of a community, and burned areas outside of the above areas are open to commercial woodland harvest (including mushrooms, berries, bark, and other forest products) by permit on all BLM-managed public lands unless they are within the Unalakleet Wild River Corridor, 100-year floodplain of HVWs, the INHT NTMC, or lands managed for wilderness characteristics as a priority. Permits would be granted outside these areas on a case-by-case basis dependent upon resource concerns.	**Forestry and Woodland Resources** See Section 2.7.12, Table 2-11, for forestry and woodland management decisions. Areas within 15 miles of a river, areas within 25 miles of a community, and burned areas outside of the above areas are open to commercial woodland harvest (including mushrooms, berries, bark, and other forest products) by permit on all BLM-managed public lands unless they are within the Unalakleet Wild River Corridor. Permits would be granted on a case-by-case basis for HVWs, areas identified as important for cultural or fish resources, and other areas outside of those listed in the bullets above.	**Forestry and Woodland Resources** See Section 2.7.12, Table 2-11, for forestry and woodland management decisions. The areas closed under Alternative B and C would be open for commercial woodland harvest under Alternative D.
Reindeer Grazing Permits *SWMFP (BLM 1981)* RM-1.2: Provide seasonal grazing for reindeer or muskoxen on a level to protect other sources. Exclude the Unalakleet and Anvik Rivers and their major tributaries from grazing leases.	**Reindeer Grazing Permits** (See Section 2.7.13 for detailed management decisions) All BLM-managed public lands within the planning area would be closed to grazing.	**Reindeer Grazing Permits** (See Section 2.7.13 for detailed management decisions) Grazing permits would be authorized on a case-by-case basis. Areas with important fisheries and watershed values within the Nulato River watershed, Unalakleet Wild River Corridor, and INHT NTMC would be closed to grazing. Grazing in HVWs would be determined on a case-by-case basis once grazing standards and guidelines for riparian health are developed. Grazing permits would also be issued on a case-by-case basis in known caribou habitat. New applications submitted under the 1937 Reindeer Industry Act and the Alaska Livestock Grazing Act of 1927 would be considered on a case-by-case basis. New applications submitted under the 1937 Reindeer Industry Act would be considered if the applicant could (1) provide a management plan which includes management objectives and how the applicant would ensure separation between domestic and wild animals and (2) conduct all land health monitoring activates as determined appropriate by the BLM AO.	**Reindeer Grazing Permits** (See Section 2.7.13 for detailed management decisions) No areas would be closed to grazing and no caribou avoidance buffers would be required. Grazing would only be permitted in areas where ecological conditions could support that grazing according to the BLM.

Alternative A	Alternative B	Alternative C	Alternative D
Cultural Landscape Reports *SWMFP (BLM 1981)* CR-1 Objective: Protect and preserve cultural sites from damage or destruction. Rationale: The study of Alaskan history requires that the integrity of cultural and historical sites be maintained. The loss of sites due to damage or destruction caused by other land uses as well as natural causes could leave substantial gaps in the study of Alaskan history. Current federal law requires protection of antiquities. BLM policy also requires that the cultural resources are managed in a manner that will preserve and protect the resource.	**Cultural Landscape Reports** The BLM would support BSWI villages by working collaboratively with rural communities in the planning area and other partners to develop Cultural Landscape Reports. Cultural landscapes are "a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or that exhibit other cultural or aesthetic values." These reports would utilize traditional and other knowledge to give a contemporary picture of resources uses and their social and historical context and would help villages in their own planning efforts as well as allow the BLM and other agencies to assess impacts of proposed projects and plans. Cultural Landscape Reports would be developed for 2-3 high-priority villages in the planning area. Priority would be determined in conjunction with village representatives.	**Cultural Landscape Reports** Same as Alternative B, except Cultural Landscape Reports would be developed for 4-6 high-priority villages in the planning area.	**Cultural Landscape Reports** Same as Alternative B, except Cultural Landscape Reports would be developed that cover the entire planning area.
Providing Assistance with Cultural Tourism No current management direction was identified. Management direction is determined on a case-by-case basis.	**Providing Assistance with Cultural Tourism** The 2012 Memorandum of Understanding between the BLM (and other federal agencies) and the American Indian Alaska Native Tourism Association (AIANTA) provides for opportunities to mutually enhance tourism, travel, and recreation on federal and tribal lands. The 2016 Native American Tourism and Improving Visitor Experience Act (NATIVE Act) provides an additional mechanism to increase tourism capacity in Native communities and coordination with federal agencies. Under Alternative B, the BLM would cooperate with AIANTA to carry out activities that facilitate the development of sustainable projects and policies that promote the management of public and tribal lands in ways that enhance cultural tourism in the planning area.	**Providing Assistance with Cultural Tourism** Same as Alternative B.	**Providing Assistance with Cultural Tourism** Same as Alternative B, plus upon request from BSWI communities, the BLM would seek funding to provide grants, loans, and technical assistance to BSWI villages in order to increase cultural tourism capacity, spur associated important infrastructure development, and elevate living standards in BSWI communities.
Zones between Hunting Guide/Outfitter Operating Areas and Rural Communities No current management direction was identified. Management direction is determined on a case-by-case basis.	**Zones between Hunting Guide/Outfitter Operating Areas and Rural Communities** A CFZ would be applied within a 10-mile buffer surrounding BSWI communities 818,395 acres. SRPs for hunting guide/outfitters would not be authorized within CFZs.	**Zones between Hunting Guide/Outfitter Operating Areas and Rural Communities** A CFZ would be applied within a 5-mile buffer surrounding BSWI communities 95,307 acres. SRPs for hunting guide/outfitters would not be authorized within CFZs.	**Zones between Hunting Guide/Outfitter Operating Areas and Rural Communities** No CFZ would be applied, and therefore no management actions would apply.

Chapter 3. Affected Environment and Environmental Consequences

3.1 Introduction

This chapter describes the affected environment and environmental consequences of the alternatives being evaluated in this Draft RMP/EIS. Appendix M provides more detailed background information regarding existing conditions that provide the baseline for the analysis. Impact discussions provided below focus on the proposed management actions and associated impacts that serve as key differentiators across alternatives. Appendix N provides detailed background information used to develop the impact analysis including analytical assumptions and a complete description of the past, present, and reasonably foreseeable future actions used to evaluate cumulative effects. Appendix N also provides more detailed impact analyses for fisheries, vegetation, wildlife, cultural resources, locatable and salable minerals, ACECs, national trails, WSRs, support for BSWI communities, and subsistence. SOPs and BMPs that would be implemented under all the action alternatives are included in Appendix K of this Draft RMP/EIS.

3.2 Resources

3.2.1 Air- and Air Quality-Related Issues

Affected Environment

Existing air quality in the planning area is summarized in this section, and detailed information is found in Appendix M. The planning area is subarctic and located primarily within the transition climate zone, with influences of other climate zones in some portions. Climate variables in the transition zone lie between those of the continental and maritime zones; annual average temperature is 27 degrees F, ranging from approximately 0 degrees F in winter to the low 60s (degrees F) in summer, and annual average precipitation is approximately 30 inches.

The planning area is currently classified as attainment or unclassifiable/attainment for all criteria pollutants. Much of the area is remote and rural, and air quality is generally good; however, regional and local air quality is periodically affected by local, regional, and global natural events and human-caused activities. Typical permitted facility sources include small diesel-fired power plants (and other diesel power generation), asphalt plants, rock and gravel plants, bulk storage facilities, and mining. There are no known oil and gas development projects in the planning area (per public ADEC permitting records and ADNR, Division of Oil and Gas, data) (ADEC 2018; ADNR 2018a). Residential emissions include smaller sources, such as woodstoves, diesel generators, and mobile sources (vehicles and boats). The most substantial pollutants in the planning area are particulate matter: fugitive dust (primarily PM10) and wood smoke (primarily PM2.5)[6] (ADEC 2018).

The primary AQRV in Alaska is visibility. Data show that wildland fires are the largest source of haze-forming emissions, and the number of clear days is lowest in the summer months. Overall, Alaska's contribution of human-caused emissions contributing to visibility impairment at Class I areas is decreasing (ADEC 2015b). However, emissions from uncontrollable sources, including natural wildfires,

[6] Particulate matter (PM) less than or equal to 10 or 2.5 micrometers in diameter, respectively.

international sources, global transport of emissions, and offshore shipping in the Pacific are still prominent influences on visibility in Alaska.

The three most relevant greenhouse gases associated with this planning area are carbon dioxide (CO2), methane, and nitrous oxide. From about 1995 through 2003, GHG emissions were relatively stable at about 50 million metric tons (MMT) of CO2 emissions. Emissions peaked in 2005, and by 2009 had declined by about 23 percent. Some of this decline could be due to the relatively recent economic recession as emissions increased in 2010 (ADEC 2015c). The industrial sector, including the oil and gas industries, produces the most GHG emissions in the state, followed by the transportation, the residential and commercial, and the electric generation sectors. The waste, agriculture, and industrial process sectors each produce relatively small quantities of GHG in Alaska. A rough estimate of the net GHG emission rate for the planning area in 2010 was calculated to be 0.70 MMT (see Appendix N for more information).

Direct and Indirect Effects

Table 3.2.1-1 below summarizes the nature and types of beneficial or adverse effects that could occur to air quality and AQRVs, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.2.1-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives.

Table 3.2.1-1: Summary of Effects to Air Quality and Air Quality-Related Values by Management Action

Types of Effects	Management Actions	Indicators
Emissions of criteria pollutants (including particulates), hazardous air pollutants and GHGs from motorized vehicle and equipment used to support BLM management activities or BLM-approved activities in the planning area.	• Air Quality Management Decisions • Travel Management Decisions • Lands and Realty Management Decisions • Forestry and Woodland Products Decisions	• Acres accessible for transportation (e.g., roads/trails open to vehicles) • Acres open to new ROWs (e.g., access for commercial woodland harvest and mineral development)
Emissions of criteria pollutants (including particulates), hazardous air pollutants, and GHGs from commercial woodland harvest and mineral development activities.	• Forestry and Woodland Products Decisions • Air Quality Management Decisions • Mineral Management Decisions	• Acres open to commercial woodland harvest • Acres accessible to mineral development
Emissions of criteria pollutants (including particulates), hazardous air pollutants, and GHGs from wildland fires	• Air Quality Management Decisions • Vegetation Management Decisions	• Potential for removal or degradation of vegetation associated with fire and fuels treatments (qualitative discussion) • Air quality (including visibility) within Class I and Class II areas within the planning area (qualitative discussion)
Increased GHG emissions due to permafrost degradation from climate change and surface-disturbing activities.	• Soils Management Decisions	• Acres where BMPs could be required for allowable actions based on implementation-level decisions (qualitative discussion).

Table 3.2.1-2: Summary of Impacts to Air Quality and Air Quality-Related Values by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Summer casual OHV access prohibited	46,953 (<1%)	565,955 acres (4%)[1]	225,925 acres (2%)[1]	225,925 acres (2%)[1]
Acres open to commercial woodland harvest (air pollutant emissions primarily associated with timber harvesting and processing)	1,644,588 acres (12%)[1]	5,017,161 acres (37%)[1]	9,811,727 acres (73%)[1]	13,423,449 acres (>99%)[1]

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres open to locatable mineral development in areas of medium to high locatable mineral potential (LMP)	294,325 acres (52%)[2]	202,610 acres (36%)[2]	565,489 acres (100%)[2]	565,489 acres (100%)[2]
Air quality (including visibility) within Class I and Class II areas within the planning area.	Potential air quality impacts from wildland fires would remain unchanged throughout the planning area.	Specified management actions would not minimize extent or frequency of wildland fires or prescribed burns, and therefore are likely to have negligible effects on air quality and AQRVs. However, planned fire management actions within the airshed of Class I and Class II areas could have beneficial impacts by helping to ensure maintenance of air quality (including visibility) for recreation and subsistence use.		
Qualitative discussion regarding required BMPs to minimize degradation of permafrost areas	Negligible amounts of GHGs produced from surface-disturbing activities. Permafrost degradation due to climate change undetermined at this time.			

Notes:
1) Percentage is based on all BLM-managed lands in the planning area (13,465,894 acres).
2) Percentage is based on all medium and high LMP areas on BLM-managed land in the planning area.

Effects from Alternative A

Under Alternative A, existing air quality and AQRVs would not change substantially from current conditions. Emissions from commercial woodland harvest would be dispersed throughout the planning area and would be temporary, only occurring during the harvesting season. Alternative A would open the fewest acres to commercial woodland harvest (Table 3.2.1-2); however, it does allow commercial woodland harvest on 76 percent of the planning area by permit on a case-by-case basis (Table 2-1b), which could result in increased emissions from timber harvest and processing activities. Adverse impacts from mineral development are primarily tied to areas that are identified as having medium to high mineral potential. Increased emissions from mineral development would be higher under Alternative A than Alternative B, but less than under Alternatives C and D. Alternative A includes 46,953 acres with restrictions or prohibitions on summer casual OHV access and therefore has the most potential for vehicle travel and resultant air emissions. Potential air quality impacts from wildland fires and prescribed burns would remain unchanged. Permafrost degradation from other surface-disturbing activities would produce negligible amounts of GHGs. The existing good air quality within the planning area, BMPs/SOPs, and air regulations and permit requirements, as well as seasonal restrictions on certain activities, would ensure that there would be no violations of the NAAQS for any pollutants.

Effects Common to All Action Alternatives

Types of effects on air quality would be similar among alternatives. Applicable air quality regulations and permits would not prevent all emissions of criteria pollutants including particulates, hazardous air pollutants, and GHGs. Implementing BMPs/SOPs and mitigation measures for surface-disturbing activities and initiating restoration and reclamation activities following such activities would reduce air pollutant and GHG emissions. Impacts from BLM-authorized activities on air quality, GHGs, and AQRVs would be managed to a standard higher than those that would be achieved alone from compliance with federal and State air quality regulations. Temporary adverse effects on air quality from wildland fires and prescribed burns would not change. However, efforts to minimize adverse effects of planned fire management actions within the airshed of Class I and Class II areas could have a beneficial effect to ensure maintenance of air quality (including visibility) for recreation and subsistence use. Permafrost degradation from other surface-disturbing activities would produce negligible amounts of GHGs. The existing good air quality within the planning area, BMPs/SOPs, and air regulations and permit

requirements, as well as seasonal restrictions on certain activities, would ensure that there would be no violations of the NAAQS for any pollutants.

Effects from Alternative B

Alternative B allows commercial woodland harvest in more acres throughout the planning area than Alternative A, but in fewer acres than Alternatives C and D. However, Alternative B does close more acres to commercial woodland harvest than Alternative A, meaning that under Alternative A an extensive amount of the planning area is open to commercial woodland harvest on a case-by-case basis (Table 2-1b) where impacts could occur if commercial woodland harvest activity were allowed after a site-specific review. Alternative B would have the most restrictions on mineral development on medium and high locatable potential areas, which would result in the least potential for adverse air emissions from mineral development compared to Alternatives A, C, and D. Alternative B has the most acres with restrictions or prohibitions on summer casual OHV access and would therefore have the least potential for vehicle usage and the resultant emissions of air pollutants.

Effects from Alternative C

Alternative C has more acres open to commercial woodland harvest than Alternatives A and B, but fewer acres than Alternative D. However, Alternative C has fewer acres open to commercial woodland harvest on a case-by-case basis compared to Alternatives A, B, and D (Table 2-1b). Under Alternative C, all the medium and high LMP areas would be open to mineral development, as under Alternative D. This could result in higher air emissions from mineral development than Alternatives A and B. Alternative C has fewer acres with restrictions or prohibitions on summer casual OHV access than Alternative B and the same amount of prohibited access as Alternative D. The potential for air emissions would be less than Alternative A, greater than Alternative B, and similar to Alternative D.

Effects from Alternative D

Alternative D is the least restrictive alternative regarding commercial woodland harvest. Under Alternative D, all of the medium and high LMP areas would be open to mineral development, as under Alternative C. This could result in higher potential air emissions from mineral development with respect to emissions from mineral development compared to Alternatives A and B. Alternative D has fewer acres with restrictions or prohibitions on summer casual OHV access than Alternative B and the same amount of prohibited access as Alternative C. The potential for air emissions would be less than Alternative A, greater than Alternative B, and similar to Alternative C.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

The planning area is currently classified as attainment or unclassifiable/attainment for all criteria pollutants. No large industrial facilities exist, and residential emissions are concentrated within rural and remote communities. Commercial timber production and mineral development activities are limited. Regional and local air quality is periodically affected by local, regional, and global natural events and human-caused activities. Wildland fire is anticipated to increase due to climate change, which would result in increased air emissions. Commercial activities (mining specifically) have decreased considerably

in the last 100 years, and engineering of commercial operations is more efficient and subject to greater environmental regulation than in the past. **Trend: Improving or Level.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

The only commercial development anticipated is the Donlin Gold Project and, potentially, limited requests for other mining development. There would be increases in population, road ROWs, and potential for new mining projects. Reasonably foreseeable future actions do not include oil and gas development or substantially increased commercial timber production, grazing, or recreation. **Trend: Continues at current or similar rate.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternatives B, C, and D)

Management actions would provide some potential improvements to air quality over Alternative A. However, in consideration of past, present, and reasonably foreseeable future actions, they would not make a noticeable difference in the overall trend for air quality in the planning area. Variations in management actions would have little bearing on trends in air quality; therefore, the trend would be the same for all action alternatives. **Trend: Continues at current or similar rate.**

3.2.2 Climate Change

Affected Environment

The climate of the planning area is discussed in Section 3.2.1, Air Quality and Air Quality-Related Values, as climate and meteorology are essential to understanding the effects of natural and human-caused sources of air pollution on local and regional air quality. The planning area is subarctic, located primarily within the transition climatic zone. Climate variables in this zone lie between those of the continental and maritime zones. Average annual temperature is 27 degrees F, with average winter temperature of approximately 0 degrees F and an average summer temperature in the low 60 degrees F. Annual average precipitation is approximately 30 inches. Detailed climate information is included in Appendix M. Climatic normals include maximum, minimum, and average temperatures, precipitation, snowfall, and daily wind speed.

Direct and Indirect Effects

Table 3.2.2-1 below summarizes the nature and types of beneficial or adverse effects that could occur to climate change, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.2.2-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives.

Table 3.2.2-1: Summary of Effects to Climate Change by Management Action

Types of Effects	Management Actions	Indicators
GHG emissions from BLM activities such as OHV use, construction and maintenance equipment use, mineral development, commercial timber production, permafrost degradation, and fire would contribute to climate change. The following climate change scenarios are likely in the planning area: • Increased temperatures • Permafrost thaw • Decreased snow cover (albedo effect) • Increased wildfire intensity, size, and frequency • Increase in non-native invasive species presence/spread • Later freeze-up dates (river ice) • Sea level rise (salt intrusion, transportation changes) The only areas in the planning area expected to retain permafrost to a depth of 1 meter (which is the most influential on vegetation and surface conditions) in the future, aside from random pockets, are the Nulato Hills region. There is less agreement from researchers on the following two climate scenarios. There is empirical evidence of these scenarios already occurring, although the magnitude and rate are expected to increase in the future. • Shrub encroachment • Spruce trees replaced with aspen/birch hardwood trees	• Air Quality Management Decisions • Travel Management Decisions • Wildland Fire Management Decisions • Mineral Decisions	• Commercial woodland harvest • Casual and subsistence vehicle activity (OHV use) • Wildland fire management • Locatable and salable mineral development

Table 3.2.2-2: Summary of Impacts to Climate Change by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres of commercial woodland harvest permitted (GHG emissions primarily associated with timber harvesting and processing, which is only one of the types of woodland harvest that would occur)	1,644,588 acres (12%)[1]	5,017,161 acres (37%)[1]	9,811,727 acres (73%)[1]	13,423,449 acres (>99%)[1]
Acres of summer casual OHV access prohibited	46,953 acres (<1%)[1]	565,955 acres (4%)[1]	225,925 acres (2%)[1]	225,925 acres (2%)[1]
Acres of summer subsistence OHV access prohibited	46,953 acres (<1%)[1]	241,512 acres (2%)[1]	225,925 acres (2%)[1]	0 acres (0%)[1]
Wildland fire management	Wildland fire management actions are not specifically intended to minimize the extent or frequency of wildland fires and are therefore likely to have a negligible effect on minimizing GHG emissions. Wildland fire activity and associated GHG emissions are expected to increase as a result of climate change.			
Acres open to locatable mineral development in areas of medium to high LMP	294,325 acres (52%)[2]	202,610 acres (36%)[2]	565,489 acres (100%)[2]	565,489 acres (100%)[2]

Notes:
1) Percentage is based on all BLM-managed lands in the planning area (13,465,894 acres).
2) Percentage is based on all medium and high LMP areas on BLM-managed land in the planning area.

Effects from Alternative A

Emissions from commercial woodland harvest are primarily associated with timber production, would be dispersed throughout the planning area, and would be temporary and long term. Emissions from woodland harvest equipment would be temporary and only occur during the harvesting season, while long-term effects from the reduction of carbon sinks would continue until new, mature vegetation is established. Alternative A has the lowest potential for GHG emissions from commercial timber production of the four alternatives with respect to areas open to commercial harvest by permit, although it does allow commercial harvest in 76 percent of the planning area by permit on a case-by-case basis

(Table 2-1b). Adverse impacts from mineral development are primarily tied to areas that are identified as having medium to high mineral potential. Alternative A has the potential to have more mineral-related GHG emissions than Alternative B, but less than Alternatives C and D. Alternative A limits summer casual OHV access in less than 1 percent of the planning area and therefore has the most potential for vehicle travel and resultant GHG emissions. Thawing permafrost resulting from climate change would alter available cross-country routes in the summer. Additionally, snow depth and the periods when snow covers the ground could both decrease as a result of climate change. Both decreases would affect the areas in the planning area that are open to cross-country winter travel. Existing wildland fire and prescribed burn management actions are not specifically intended to minimize the extent or frequency of wildland fires and are therefore likely to have a negligible effect on minimizing GHG emissions. Wildland fire activity and associated GHG emissions are expected to increase from climate change. Alternative A has no soil management actions aimed specifically at reducing permafrost degradation from surface-disturbing activities. Permafrost thawing and degradation could result in long-term increases of GHG emissions.

Effects Common to All Action Alternatives

GHG emission effects on climate change would be similar among alternatives. The larger the area that is developed for commercial woodland harvest, the higher the potential for net GHG emissions related to activities and equipment used and the loss of vegetation that acts as carbon sink. All the action alternatives include management actions for vegetation reclamation related to locatable and salable mineral development, which would minimize impacts to climate change by restoring carbon-sequestering vegetation that would result in lower GHG emissions. Under the action alternatives, BLM would adaptively manage travel and transportation by limiting vehicle use to avoid and minimize impacts to sensitive vegetation cover types and habitats. Wildland fire management actions are not specifically intended to minimize the extent or frequency of wildland fires and are therefore likely to have a negligible effect on minimizing GHG emissions. Wildland fire activity and associated GHG emissions are expected to increase from climate change. Soil management actions under all the action alternatives include monitoring, assessing, and mitigating impacts to soils. BLM would adaptively manage areas where soils are prone to erosion and permafrost thawing by putting in place restrictions on motorized travel, surface disturbance, and the use of heavy equipment. The management actions for all action alternatives would slow the effects from climate change on soils, including reducing the rate of permafrost degradation, thereby reducing associated GHG emissions compared to Alternative A.

Effects from Alternative B

Alternative B allows commercial woodland harvest on more acres in the planning area than Alternative A, but fewer acres than Alternatives C and D. However, Alternative B does close more acres to commercial woodland harvest than Alternative A, meaning Alternative A has more acreage open to commercial woodland harvest on a case-by-case basis. Alternative B would allow for the least amount of mineral development on medium and high LMP areas, which would result in the least potential for emissions of GHGs compared to Alternatives A, C, and D. Alternative B has the most acres with limits on summer casual OHV access and therefore the least potential for vehicle usage and associated GHG emissions.

Effects from Alternative C

Alternative C has more acres open to commercial woodland harvest than Alternatives A and B, but fewer acres than Alternative D. However, Alternative C has fewer acres open to commercial woodland harvest on a case-by-case basis compared to Alternatives A, B, and D. Under Alternative C, 100 percent of medium and high LMP areas would be open to mineral development. This could result in the potential for higher GHG emissions from mineral development than Alternatives A and B. Alternative C has fewer acres with limits on summer casual OHV access than Alternative B, more acres with limits than Alternative A, and the same amount of limited access as Alternative D. The potential for GHG emissions would be less than Alternative A, greater than Alternative B, and the same as Alternative D.

Effects from Alternative D

Alternative D has more acres open to commercial woodland harvest than Alternatives A, B, and C and therefore has the potential to result in higher GHG emissions. Under Alternative D, 100 percent of medium and high LMP areas would be open to mineral development, similar to Alternative C. This could result in the highest GHG emissions from mineral development compared to Alternatives A and B, although emissions would be similar to Alternative C. Alternative D has fewer acres with limits on summer casual OHV access than Alternative B, more acres with limits than Alternative A, and the same amount of limited access as Alternative C. The potential for GHG emissions would be less than Alternative A, greater than Alternative B, and the same as Alternative C.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Much of the planning area is remote and rural, and GHG emissions from human-caused sources are generally low. No large industrial facilities exist, and residential emissions are concentrated within rural and remote communities. Commercial timber production is primarily focused on local consumers, and mineral development activities are limited. Wildland fires and permafrost thawing are both anticipated to increase due to climate change and will result in increased GHG emissions. **Trend: Degrade**.

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Increases in population, road ROWs, and potential for new mining projects (e.g., Donlin Gold) would increase GHG emissions compared to present conditions. Increased GHG emissions would contribute to global climate change. Reasonably foreseeable future actions do not include oil and gas development or substantially increased commercial timber production, grazing, or recreation. GHG emissions from these activities are therefore anticipated to be similar to present conditions. **Trend: Continues to degrade at a similar rate**.

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternatives B, C, and D)

Management actions would provide some reductions in potential GHG emissions over Alternative A. However, in consideration of past, present, and reasonably foreseeable future actions, they would have a negligible effect on the overall trend for potential GHG emissions in the planning area. Variations in management actions would have little effect on trends in climate change; therefore, the trend would be the same for all action alternatives. **Trend: Continues to degrade at a similar rate**.

3.2.3 Soils

Affected Environment

Soils in the planning area are depicted on Map 3.2.3-3. Many of the soils in the planning area are poorly developed because the cold climate impedes most soil-forming processes (aside from minor, shallow organic matter accumulation) and leads to the formation and preservation of permafrost. In the uplands, permafrost underlies most of the north slopes and the toe of south-facing slopes. The well-drained and relatively warm soils of upland south-facing slopes are generally permafrost-free, with deeper and more mineral-dominated soils. In the lowlands, permafrost underlies much of the landscape except for major river terraces, alluvial fans, and active floodplains. The upland portions of the planning area generally have thin, poorly formed soils comprising coarse colluvium, fine alluvial sediments, and eolian loess.[7] Lowland soils are more developed and consist of loess, sand and gravelly alluvium derived from mountainous regions, and higher amounts of organic matter. Large areas of wet organics form extensive plains within the lowland areas, particularly in the Yukon and Kuskokwim delta regions.

Permitted land use is limited on the BLM-managed lands within the planning area, with one airport lease, five FLPMA permits or leases, and 19 ROWs granted with 15 ROW applications pending.

Direct and Indirect Effects

Table 3.2.3-1 summarizes the nature and types of effects that could occur to soils, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.2.3-2 summarizes the impacts to soils by indicator.

Table 3.2.3-1: Types of Effects to Soils

Types of Effects	Management Actions	Indicators
Potential impacts to soils (including permafrost) could occur from mineral extraction, travel, development, and climate change. Surface disturbance from OHV use could occur where OHV use is unrestricted. Increased erosion and sedimentation to surface waters could occur when riparian areas and soils are disturbed. Water- and wind-induced erosion could increase following abrupt disturbances to vegetative communities and biological soil crust as a result of surface-disturbing activities or wildfire. Impacts to soils could be minimized by soils management decisions, HVW designation, and ACEC designation.	• Woodland Harvest Management Decisions • Travel Management Decisions • Soils Management Decisions • Grazing Decisions • Mineral Decisions • Lands and Realty Decisions • HVW Decisions • ACEC decisions	• Acres open to commercial woodland harvest • Minimization of impacts to soils associated with acres of OHV restrictions • Minimization of impacts to soils associated with soils management • Acres open to livestock grazing • Acres open to mineral leasing subject to standard stipulations • Acres open to locatable mineral development in areas of high or medium LMP, open to salable minerals, NSO for mineral actions, or open to mineral leasing • Acres open to ROW authorization • Acres and RM designated as HVW • Acres affected by ACEC designations

[7] Silt-sized sediment formed by the accumulation of wind-blown dust.

Table 3.2.3-2: Summary of Impacts to Soils by Indicator and Management Decision

Resource Indicator	Alternative A[1]	Alternative B[1]	Alternative C[1]	Alternative D[1]
Soil disturbance from woodland harvesting areas	• Open to commercial harvest: 1,644,588 acres (12%) • Open to commercial harvest on a case-by-case basis: 10,237,555 acres (76%)	• Open to commercial harvest: 5,017,161 acres (37%) • Open to commercial harvest on a case-by-case basis: 29,829 acres (<1%)	• Open to commercial harvest: 9,811,727 acres (73%) • Open to commercial harvest on a case-by-case basis: 3,607,214 acres (27%)	• Open to commercial harvest: 13,423,449 acres (>99%) • Open to commercial harvest on a case-by-case basis: 42,445 acres (<1%)
Minimization of soil disturbance due to OHV use	• Summer casual OHV access prohibited: No acres specified • Summer subsistence OHV access prohibited: No acres specified • Summer casual OHV access limited to existing trails: No acres specified • Summer subsistence OHV access limited to existing trails: No acres specified	• Summer casual OHV access prohibited: 565,955 acres (4%) • Summer subsistence OHV access prohibited: 241,512 acres (2%) • Summer casual OHV access limited to existing trails: 12,899,939 acres (96%) • Summer subsistence OHV access limited to existing trails: 324,443 acres (2%)	• Summer casual OHV access prohibited: 225,925 acres (2%) • Summer subsistence OHV access prohibited: 225,925 acres (2%) • Summer casual OHV access limited to existing trails: 13,239,969 acres (98%) • Summer subsistence OHV access limited to existing trails: 363 acres (<1%)	• Summer casual OHV access prohibited: 225,925 acres (2%) • Summer subsistence OHV access prohibited: 0 acres (0%) • Summer casual OHV access limited to existing trails: 46,953 acres (<1%) • Summer subsistence OHV access limited to existing trails: 225,925 acres (2%)
Acres open to livestock grazing on a case-by-case basis	• 13,304,555 acres (99%)	• 0 acres (0%)	• 7,742,975 acres (58%)	• 13,465,894 acres (100%)
Soil disturbance from locatable mineral development	• Open to locatable mineral development: 8,661,406 acres (64%) • Open in high and medium LMP: 294,325 (52%[2])	• Open to locatable mineral development: 3,623,397 acres (27%) • Open in high and medium LMP: 202,610 acres (36%[2])	• Open to locatable mineral development: 13,418,941 acres (>99%) • Open in high and medium LMP: 565,489 acres (100%[2])	• Open to locatable mineral development: 13,418,941acres (>99%) • Open in high and medium LMP: 565,489 acres (100%[2])
Soil disturbance from leasable mineral development	• Open under NSO: 17,521 acres (<1%) • Open subject to standard stipulations: 8,246,152 acres (61%)	• Open under NSO: 1,597,599 acres (12%) • Open subject to standard stipulations: 2,517,414 acres (19%)	• Open under NSO: 6,824,035 acres (51%) • Open subject to standard stipulations: 6,594,906 acres (49%)	• Open under NSO: 236,556 acres (2%) • Open subject to standard stipulations: 13,182,385 acres (98%)
Soil disturbance from ROWs	• Exclusion acres: 0 (0%) • Avoidance acres: 0 (0%) • Case-by-case acres: 13,465,894 (100%) • Open acres: 0 (0%)	• Exclusion acres: 1,464,069 (11%) • Avoidance acres: 8,824,848 (66%) • Case-by-case acres: 0 (0%) • Open acres: 3,176,977 (24%)	• Exclusion acres: 0 (0%) • Avoidance acres: 7,069,494 (52%) • Avoidance acres for linear actions: 576,038 (4%) • Case-by-case acres: 0 (0%) • Open acres: 5,820,362 (43%)	• Exclusion acres: 0 (0%) • Avoidance acres: 5,130,927 (38%) • Case-by-case acres: 100,644 (7%) • Open acres: 8,234,323 (61%)
Soil disturbance minimization from HVW decisions	No acres or RM designated	8,294,053 acres (62%) and 21,382 RMs in HVWs	5,560,642 acres (41%) and 14,888 RMs in HVWs	4,891,935 acres (36%) and 12,982 RMs in HVWs
Soil disturbance minimization from designation of ACECs	1,884,376 acres (14%)	3,912,698 acres (29%)	0 acres (0%)	0 acres (0%)

Notes:
1) Unless otherwise specified, percentages are based on BLM-managed land in the planning area.
2) Percentages based on all areas of medium or high LMP on BLM-managed land in the planning area.

Effects from Alternative A

Under Alternative A, current rates of soil degradation on BLM-managed land in the planning area would be maintained because existing management would continue, and land use is generally low. Alternative A poses no ROW restrictions, including in permafrost areas or floodplains. There are no specific BMPs for

river crossings to limit river bank disturbance and accelerated erosion. About 12 percent of BLM-managed lands in the planning area would be open to commercial woodland harvest, and 76 percent would be open on a case-by-case basis. New ROWs would be allowed anywhere in the planning area on a case-by-case basis; no identified sensitive areas would be identified as exclusion or avoidance areas. No surface disturbance buffers for streams would be required to limit erosion and sediment deposition into streams. The lack of management for these activities could result in increased soil compaction, which could reduce the soil's ability to support vegetation and reduce soil porosity, which could in turn inhibit root growth and reduce infiltration capacity of the soil. Increased erosion could contribute to increased turbidity in streams and sediment deposition on stream bottoms. Vegetation loss could also contribute to permafrost thaw. Additionally, 294,325 acres of medium or high LMP would remain open for locatable mineral development, which could lead to erosion, compaction, and changes to soil layers.

Effects Common to All Action Alternatives

Most management decisions impact soils in some way because a primary impact to soils is human activity. Impacts could intensify due to the sensitive nature of the soils in the region (e.g., thin, poorly developed, permafrost). Disturbances often result in increased rates of erosion, permafrost thaw, and overall soil destabilization. Alternatives that promote soil disturbance (e.g., overland transportation, energy and mineral development, recreation use) would have a corresponding impact on soil resources. However, specific management actions within each alternative could further increase soil disturbances within alternatives (exchange or disposal of BLM land allowing more land to be developed without restriction, a reduction of management restrictions or adaptive management strategies, etc.) or mitigate soil disturbances (lands managed for wilderness characteristics; special designated areas, such as ACECs, INHT segments, and HVWs, etc.).

Surface-disturbing activities and surface occupancy could impact soil resources by compacting soil or removing soil. As soil compaction increases, the soil's ability to support vegetation could diminish because the resulting increase in soil strength and change in soil structure (loss of porosity) inhibit root system growth and reduce or increase water infiltration. As vegetative cover, water infiltration, and soil stability are diminished or disrupted, the surface water runoff rates increase, further accelerating rates of soil erosion. This erosion could contribute or worsen turbidity in nearby streams and impact water quality as well as degrade soils. Vegetation loss and erosion could also contribute to thawing of permafrost. Travel across land by any means could result in vegetation loss, soil compaction, and soil erosion. Management approaches that designate travel to specified routes could result in more predictable, localized, and manageable impacts.

All the action alternatives would be subject to management actions to avoid and minimize impacts to HVWs from actions associated with development that could impact soils. Management actions vary among the action alternatives and include allowing differing levels of surface-disturbing activity in caribou and moose calving and wintering areas, the Innoko Bottoms Priority Wildlife Habitat Area, and connectivity corridors. These actions would serve to minimize impacts on soils as well.

All action alternatives incorporate decisions for activities that would increase or decrease impacts to soils. Conditional requirements under each action alternative that minimize surface disturbances through management actions and/or increased planning requirements are less likely to result in potential soil disturbances and associated impacts.

Effects from Alternative B

Under Alternative B, potential impacts would be minimized, more so than any other alternative, through management actions that would limit land uses and/or increase planning requirements. Under Alternative B, permafrost areas would be excluded from new ROW development, and there would be no development within 100 feet of springs. BMPs would be in place to avoid stream alteration and other impacts associated with new stream crossings. These measures would prevent soil impacts including compaction, erosion, and vegetation loss in areas that could experience the most damage from soil impacts, such as near waterbodies and in areas of permafrost. Additionally, Alternative B would have fewer acres than all other alternatives open to commercial woodland harvesting (either open or open on case-by-case basis), mineral development (including in areas with medium or high potential), and new ROWs (Table 3.2.3-2); these are all actions that would result in soil compaction, erosion, degradation of permafrost, and vegetation loss. Compared to all other alternatives, Alternative B would result in the smallest geographic extent of impacts to soils, including soil compaction, erosion, degradation of permafrost, and vegetation loss.

Effects from Alternative C

Alternative C has fewer management actions that limit land uses and/or increased planning requirements than Alternative B, but more than Alternative D. Under Alternative C, permafrost areas would be avoidance areas for new ROWs, and development near springs would be allowed on a case-by-case basis. BMPs for river crossings would be the same as Alternative B. Alternative C would have more acres open to commercial woodland harvesting, mineral development (including in areas with medium or high mineral potential), and new ROWs than Alternative B (Table 3.2.3-2). Alternative C would still include management actions that would limit activities that would result in soil compaction, erosion, degradation of permafrost, and vegetation loss, though these restrictions would cover a smaller geographic extent than Alternative B. Therefore, Alternative C would have the potential to result in more impacts to soils than Alternative B.

Effects from Alternative D

Alternative D has some management actions that limit land uses and/or increase planning requirements, but many of these are simply better definitions and clarifications of the rules already present under Alternative A. Alternative D would result in slightly fewer impacts to soils than Alternative A, but more than Alternatives B and C. The amount of surface disturbance expected under this alternative is tempered by the generally low mineral potential of BLM-managed lands in the planning area. As shown in Table 3.2.3-2, the amount of medium or high locatable mineral open for development is the same as Alternative C. Additionally, the limited amount of non-winter transportation and recreation also tempers potential impacts to soils.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Soil resources in the planning area predominantly consist of naturally occurring undisturbed conditions. The area is sparsely populated, and minimal human-caused disturbances exist from limited commercial

facilities, roads, and trails. No large-scale commercial crop, livestock, or grazing activity exists in the planning area.

Climate change will continue to lead to increased soil temperatures in the planning area, which could in turn result in active layer destabilization (permafrost thaw), increased soil and streambank erodibility, and increased nutrient cycling and decomposition. The lowland portions of the planning area are extensively and intermittently affected by permafrost and their degradation often exhibits a thermokarst landscape. **Trend: Degrading**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Management needs for soils in the planning area are predicted to be low in the foreseeable future, based on the remoteness of the area, lack of infrastructure, and low development potential. However, the lifting of the ANCSA 17(d)(1) withdrawals in the area, in combination with the present/reasonably foreseeable projects (such as the Donlin Gold Project and its associated infrastructure), could result in an increase in soil disturbance in certain areas.

Over time, climate change could affect the accessibility or impacts to soils in the planning area; however, the nature and extent of these impacts cannot be confidently predicted with currently available data. **Trend: Continue to Degrade**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Management needs for soils in the planning area are predicted to be low in the foreseeable future based on the remoteness of the area, lack of infrastructure, and low development potential. However, the lifting of the ANCSA 17(d)(1) withdrawals in the area, in combination with the present/reasonably foreseeable projects (such as Donlin Gold Project and its associated infrastructure), could result in an increase in soil disturbance in certain areas. These impacts are concentrated in a small number of watersheds.

Over time, climate change could affect the accessibility or impacts to soils in the planning area. Management actions would prevent or minimize impacts to soils by limiting soil-disturbing activities in certain areas. These management actions are not expected to counteract degradation of soils from climate change but could slow the rate of degradation compared to Alternative A. **Trend: Continue to Degrade**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

Cumulative impacts and trends for soils within the planning area would be similar to Alternative B. Because Alternative C would not have as many restrictions for soil disturbance as Alternative B, soil conditions would continue to degrade at a lesser rate than Alternative D but at a greater rate than Alternative B. **Trend: Continue to Degrade**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

Cumulative impacts and trends for soils would be similar to the other alternatives, except that fewer management actions limiting land use could exacerbate the potential adverse long-term trends associated with climate change. **Trend: Continue to Degrade**

3.2.4 Water Resources

Affected Environment

Surface Water

There are approximately 32,932 miles of streams and rivers and 53,798 acres of lakes and ponds present on the 13.5 million acres of BLM-managed public lands within the planning area (BLM 2015e). Major rivers within the planning area include the Yukon, Kuskokwim, Anvik, and Unalakleet (see Map 1-2). Tributaries of the upper Yukon emanate from glaciated areas and carry heavy natural loads of sediment during summer. Except for suspended sediment, water quality is good to excellent, with low dissolved solids, dissolved oxygen near saturation, and neutral to moderately basic pH. Runoff containing natural or human-caused sediment and/or other pollutants could occur during spring snowmelt and heavy rainfall events. Abandoned non-reclaimed placer gold mining, active placer mining with erosion control issues, and runoff from wildfire areas could contribute additional sediment and other pollutants to local streams. During summer, surface waters are typically less than 14 degrees C (57.2 degrees F). Flows in larger rivers are usually at a minimum in March and maximum in June through August. Winter flows are generally about 20 percent of peak summer flows.

Groundwater

About half of Alaska's population and 90 percent of the state's rural residents depend primarily on groundwater (ADEC 2008). Unconsolidated alluvial deposits or glacial outwash form the most productive aquifers. The groundwater level generally reaches a seasonal low during late winter months (March or April). Permafrost in the planning area is discontinuous. Where the permafrost is shallow, groundwater can be located near the land surface and promote rapid runoff to streams. Most of the groundwater in unconsolidated deposits is suitable for domestic uses with moderate or minimal treatment. The most common treatment problems in groundwater systems are naturally occurring concentrations of arsenic, antimony, iron, and manganese in excess of the federal drinking-water standards (ADEC 2008). Alluvial groundwater is typically a calcium bicarbonate or calcium magnesium bicarbonate type and is hard to moderately hard and may require treatment for some uses.

Water Quality

Water quality in most of the lakes and rivers is in a natural state, and existing impairments are due to natural conditions. Turbidity levels are naturally elevated in most Alaska streams during high-flow events, regardless of land use. According to Alaska's *Final 2012 Integrated Water Quality Monitoring and Assessment Report* (ADEC 2013), segments of Red Devil Creek and Kuskokwim River are on Alaska's list of impaired waterbodies (i.e., Clean Water Act Section 303(d) list). Both are in the Kuskokwim watershed in the vicinity of the Red Devil mine site and exceed water quality standards for antimony, arsenic, and mercury.

Direct and Indirect Effects

Table 3.2.4-1 summarizes the nature and types of beneficial or adverse effects that could occur to water resources, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.2.4-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives.

Table 3.2.4-1: Summary of Effects to Water Resources by Management Action

Types of Effects	Management Actions	Indicators
Mining activities could adversely affect water quality by increasing erosion, sedimentation, and water temperature; causing alterations in river/stream flows; and adding point and non-point discharges to streams, rivers, and groundwater.	• Water Resources and Fisheries Decisions • Visual Resources Decisions • Mineral Decisions • Lands and Realty Decisions • ACEC Decisions	• RM designated as HVWs • Acres of VRM Class I and II lands • Acres open to locatable mineral development and open to salable minerals • RM and acres of waterbodies open to locatable mineral development • RM and acres of waterbodies open to salable mineral development • Acres open/closed to mineral leasing • Acres designated NSO leasable • Acres designated ACEC
Timber harvesting activities could adversely affect water quality by removing vegetation and increasing erosion, sedimentation, water temperature, and causing alterations in river/stream flows.	• Water Resources and Fisheries Decisions • Visual Resources Decisions • Forestry and Woodland Products Decisions • ACEC Decisions	• RM designated as HVWs • Acres of VRM Class I and II Lands • Acres open to commercial woodland harvest • Acres designated ACEC
OHV access could adversely affect water quality by increasing erosion, sedimentation, altering river/stream flows, and increasing point and non-point discharges to streams, rivers, and groundwater.	• Water Resources and Fisheries Decisions • Visual Resources Decisions • Lands and Realty Decisions • Travel and Transportation Management Decisions • ACEC decisions	• RM designated as HVWs • Acres of VRM Class I and II lands • Acres of ROW exclusion and avoidance areas • Acres open to OHV travel • Acres designated ACEC
ROW grants, permits, and leases could affect water quality by removing vegetation and increasing erosion and sedimentation, altering river/stream flows, and increasing point and non-point discharges to streams, rivers, and groundwater.	• Water Resources and Fisheries Decisions • Visual Resources Decisions • Lands and Realty Decisions • ACEC Decisions	• RM designated as HVWs • Acres of VRM Class I and II lands • Acres of ROW exclusion and avoidance areas • Acres designated ACEC

Table 3.2.4-2: Summary of Impacts to Water Resources by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
RM within HVWs	0	21,382 (65%)[1]	14,888 (45%)[1]	12,982 (39%)[1]
Acres of VRM Class I and II lands	Class I: 46,953 (<1%)[1]	• Class I: 1,335,771 (10%)[2] • Class II: 6,490,087 (48%)[2]	• Class I: 46,953 (<1%)2 • Class II: 2,766,229 (21%)2	• Class I: 46,953 (<1%)[2] • VRM Class II: 679,553 (5%)[2]
Acres of medium or high LMP lands open to locatable mineral development	294,325 (52% of medium or high LMP on BLM land in the planning area)	202,610 (36% of medium or high LMP on BLM land in the planning area)	565,489 (100% of medium or high LMP on BLM land in the planning area)	565,489 (100% of medium or high LMP on BLM land in the planning area)
RM and acres of waterbodies open to locatable mineral development in areas of medium or high locatable potential	• 609 RM (2%)[1] • 712 acres (1%)[3]	• 409 RM (1%)[1] • 609 acres (1%)[3]	• 1,173 RM (4%)[1] • 1,040 acres (2%)[3]	• 1,173 RM (4%)[1] • 1,040 acres (2%)[3]
Acres open to leasable mineral development with standard stipulations	8,246,152 acres (61%)[2]	2,517,414 acres (19%)[2]	6,594,906 acres (49%)[2]	13,182,385 (98%)[2]
Acres designated ACEC	1,884,376 (14%)[2]	3,912,698 (29%)[2]	0	0
Acres open to commercial woodland harvest	• Open: 1,644,588 (12%)[2] • Case-by-Case Basis: 10,237,555 (76%)[2]	• Open: 5,017,161 (37%)[2] • Case-by-Case Basis: 29,829 (<1%)[2]	• Open: 9,811,727 (73%)[2] • Case-by-Case Basis: 3,607,214 (27%)[2]	• Open: 13,423,449 (>99%)[2] • Case-by-Case Basis: 42,445 (<1%)[2]

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres of ROW designated exclusion and avoidance areas	0	• Exclusion: 1,464,069 (11%)[2] • Avoidance: 8,824,848 (66%)[2]	• Exclusion: 0 • Avoidance: 7,069,494 (52%)[2] • Avoidance for Linear Actions: 576,038 (4%)[2]	• Exclusion: 0 • Avoidance: 5,130,927 (38%)[2]
Acres closed to OHV travel or limited to existing trails	0 designated OHV regions	• Summer Casual OHV Access Cross-Country Access Allowed: 0 acres (0%)[1] • Summer Subsistence OHV Cross-Country Access Allowed: 12,899,939 acres (96%)[1] • Summer Casual OHV Access Limited to Existing Trails: 12,899,939 acres (96%)[1] • Summer Subsistence OHV Access Limited to Existing Trails: 324,443 acres (2%)[1]	• Summer Casual Cross-Country OHV Access Allowed: 0 acres (0%)[1] • Summer Subsistence Cross-Country OHV Access Allowed: 13,239,606 acres (98%)[1] • Summer Casual OHV Access Limited to Existing Trails: 13,239,969 acres (98%)[1] • Summer Subsistence OHV Access Limited to Existing Trails: 363 acres (<1%)[1]	• Summer Casual Cross-Country OHV Access Allowed: 13,193,016 acres (98%)[1] • Summer Subsistence Cross-Country OHV Access Allowed: 13,239,969 acres (98%)[1] • Summer Casual OHV Access Limited to Existing Trails: 46,953 acres (<1%)[1] • Summer Subsistence OHV Access Limited to Existing Trails: 225,925 acres (2%)[1]

Notes:
1) Percentage based on total miles of streams on BLM-managed land in the planning area.
2) Percentage based on all BLM-managed land in the planning area.
3) Percentage based on total acres of waterbodies on BLM-managed land in the planning area.

Water resources (i.e., streams, rivers, and groundwater) within the planning area could be affected by erosion, sedimentation, water temperature changes, alterations in river/stream flows, and various types of point and non-point discharges as a result of a range of management actions applied to mining, timber harvesting, grazing, roadbuilding, OHV access, and the issuance of ROW grants, permits, and leases on BLM-managed lands. These management actions could impact water resources on BLM-managed lands to varying degrees depending on the amount and location of areas open to such uses and any conditions applied to such uses, particularly in proximity to water resources.

Table 3.2.4-2 identifies the indicators used to quantify the magnitude of potential impacts to water resources for each alternative. The HVW designation would minimize impacts to water resources by requiring all surface-disturbing activity in HVWs to comply with soil, vegetation, riparian, and stream disturbance/reclamation requirements to minimize impacts from soil erosion, sedimentation, and water quality and quantity changes. Lands designated VRM Class I, VRM Class II, and ACECs would include management actions that would limit activities that could result in major landscape changes, surface disturbance, and vegetation removal that could result in erosion, sedimentation, and adverse impacts to water quality. Therefore, the more river miles designated as HVW and the more acreage designated as VRM Class I and II and ACECs, the smaller the magnitude and extent of impacts on water resources. Appendix J includes all management actions that would apply to ACECs that would minimize erosion, sedimentation, and adverse impacts to water quality.

Similarly, the greater the acreage of BLM-managed lands withdrawn from locatable mineral development, closed to leasable mineral development, stipulated as NSO for leasable minerals, closed to commercial woodland harvest, grazing, and OHV access, or designated as ROW avoidance and exclusion areas, the lower the probability that water resources in those areas would be adversely affected by surface-disturbing activities. If not properly managed, such activities could degrade water quality by

accelerating erosion and sedimentation, altering stream flows, or releasing pollutants to surface and groundwater. Note that even though large portions of BLM-managed lands would be open to certain types of activities such as commercial woodland harvesting, grazing, and leasable mineral development, it is unlikely the entire area would be used for such purposes. A relative comparison of the impacts on water resources associated with each alternative is presented below.

Effects from Alternative A

Under Alternative A, none of the 13.5 million acres of BLM-managed lands in the planning area would be designated as HVWs, and 1 percent would be designated VRM Class I, providing limitations to surface-disturbing activities (the remaining BLM-managed lands would be undesignated). About 14 percent of the planning area would be designated as ACECs, providing some management to limit impacts on water quality and fisheries relevant and important values (R&Is). Approximately two-thirds of all BLM-managed lands in the planning area and about half of the river miles on BLM-managed lands with medium to high mineral potential would be open to locatable mineral development. Surface-disturbing activities in these areas could impact water quality by increasing erosion, sedimentation, and water temperature; causing alterations in river/stream flows; and adding point and non-point discharges to streams, rivers, and groundwater. Similar impacts could result from leasable mineral development, which is allowed on about 61 percent of BLM-managed lands in the planning area, although the likelihood for those impacts is less due to lower potential for development. Approximately 12 percent of BLM-managed lands would be open to commercial woodland harvest, although 76 percent would be open on a case-by-case basis, where impacts could still result. The magnitude of impacts would likely be less since permits would be issued considering site-specific conditions.

Surface disturbance from new ROW and OHV use would also occur due to a general lack of management direction for those uses. Except for the SOPs and BMPs that all alternatives would be required to follow or implement, Alternative A would continue to allow activities that would impact water resources that could cause erosion, sedimentation, changes in temperature and stream flows, and point and non-point discharges that could adversely affect water quality compared to the action alternatives with few limitations.

Effects Common to All Action Alternatives

While each of the action alternatives would result in similar types of impacts to water resources, the magnitude of those impacts would be different. Those differences are shown in Table 3.2.4-2 and further described below.

Effects from Alternative B

Under Alternative B, fewer acres would be open to surface-disturbing activity than all other alternatives, including mineral development. Approximately 65 percent of the total river miles on BLM-managed lands would be managed within HVW designation, which would be withdrawn from locatable mineral development and closed to salable and leasable mineral development. Therefore, impacts to streams within HVWs from mineral activity would be avoided under Alternative B. Additionally, considering all mineral decisions throughout the planning area, under Alternative B about 1 percent of the river miles on BLM-managed land in the planning area would be open to locatable mineral development in areas of medium or high locatable mineral potential. This is the lowest of all alternatives and consequently would have the smallest magnitude and extent of associated water quality impacts compared with the other

alternatives. Approximately 58 percent of BLM-managed lands would be designated VRM Class I or II, which allow up to a low level of change to the characteristic landscape. This would limit activities with large areas of surface disturbance and thereby minimize associated impacts to water resources, such as increased erosion and sedimentation. Approximately 29 percent of BLM-managed lands in the planning area would be designated as ACECs, which under Alternative B would limit surface-disturbing activities (see Appendix J for details). Approximately 37 percent of BLM-managed lands would be open to commercial woodland harvest. Disturbance by activities authorized by ROW permits would be avoided or minimized on the 77 percent of BLM-managed lands designated as ROW exclusion and avoidance areas. Summer casual OHV access would be allowed on 96 percent of BLM-managed lands but limited to use of existing trails. For most resource indicators, Alternative B would result in fewer impacts on water resources on BLM-managed lands such as accelerated erosion and sedimentation, variations in temperature and stream flows, and potential discharges of pollutants to streams, rivers, and groundwater than Alternatives A, C, and D.

Effects from Alternative C

Under Alternative C, more acres would be open to development than Alternative B, including mineral development. Approximately 45 percent of river miles on BLM-managed lands would be managed with HVW designation, which under Alternative C would be open to locatable entry. All river miles on BLM-managed lands in areas of medium to high LMP would be open to locatable mineral development; however, these areas only represent about 4 percent of streams on BLM-managed land in the planning area. Therefore, impacts from locatable mineral development on streams would be likely, but to a small geographic extent. Approximately one half of BLM-managed lands would be open to mineral leasing, which is more than Alternative B but less than Alternatives A and D. However, likelihood of impacts to water quality from leasable mineral activity is small due to lower potential for development compared to locatable mineral development in the planning area. Under Alternative C, about 21 percent of lands would be designated VRM Class I or II, which allow up to a low level of change to the characteristic landscape. This would limit activities with large areas of surface disturbance and thereby minimize associated impacts to water resources, such as increased erosion and sedimentation. About 73 percent of BLM-managed lands would be open to commercial woodland harvest and nearly all BLM-managed lands when considering areas open on a case-by-case basis. Disturbance by activities authorized by ROW permits would be avoided or minimized on the 56 percent of BLM-managed lands designated as ROW avoidance areas. Summer casual OHV access would be allowed on 98 percent of BLM-managed lands but would be limited to use of existing trails. For most resource indicators, Alternative C would result in a greater magnitude, extent, and likelihood of impacts to water resources on BLM-managed lands from activities that could cause accelerated erosion and sedimentation, variations in temperature and stream flows, and potential discharges of pollutants to streams, rivers, and groundwater than Alternative B, but less than Alternative D. Alternative C would result in a greater magnitude, extent, and likelihood of impacts to water resources than Alternative A from mineral development and commercial woodland harvest but fewer impacts associated with ROW development and OHV travel.

Effects from Alternative D

Under Alternative D, more acres would be open to development than Alternatives A, B, and C, including mineral development. Approximately 39 percent of river miles on BLM-managed lands would be managed with HVW designation, which would be open to locatable and salable mineral development and

leasable mineral development under standard stipulations. All river miles on BLM-managed lands with medium to high LMP would be open to locatable mineral development so impacts to streams from locatable mineral development would be likely and the same as Alternative C. Approximately 98 percent of BLM-managed lands would be open to mineral leasing, which is more than Alternatives A, B, and C. However, the likelihood of impacts to water quality from leasable mineral activity is small due to lower potential for development compared to locatable mineral development in the planning area. About 5 percent of BLM-managed lands would be designated VRM Class I or II, providing limitations on surface-disturbing activities in a smaller area than Alternative B or C but more than Alternative A. All BLM-managed lands in the planning area would be open to commercial woodland harvest under Alternative D. Disturbance by activities authorized by ROW permits would be avoided or minimized on 38 percent of BLM-managed lands managed as ROW avoidance areas. Summer casual OHV access would be allowed on 98 percent of BLM-managed lands, with nearly no limitations requiring use of existing trails. For most resource indicators, Alternative D would result in a greater magnitude, extent, and likelihood of impacts to water resources on BLM-managed lands from activities that could cause accelerated erosion and sedimentation, variations in temperature and stream flows, and potential discharges of pollutants to streams, rivers, and groundwater than Alternatives B or C. Alternative D would result in a greater magnitude, extent, and likelihood of impacts to water resources than Alternative A from mineral development and commercial woodland harvest, fewer impacts associated with ROW development, and similar impacts associated with OHV travel.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

The lack of development and access to the planning area has minimized impacts to water resources on BLM-managed lands, and the extent of disturbances in the planning area is forecast to remain stable. Activities that occur within the planning area that would have the highest potential to affect water resources include mining, timber harvesting, grazing, transportation route use, and development of ROWs that cross or are within the vicinity of water resources. Impacts from these potential activities are not quantified, though they are not expected to substantially increase in the near future. **Trend: Stabilized.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

There would be continued resource use and community development as further expanded on in Appendix N. Reasonably foreseeable actions (see Appendix N) have the potential to impact water resources. Reasonably foreseeable actions include potential mineral development such as the Donlin Gold Project, access road development, and potential new energy development. These could impact water quality, floodplain health, water quantity, and timing and magnitude of high flow events. **Trend: Degrading.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Alternative B would consistently limit access or require substantially more consideration of water quality than the other alternatives to gain access for development. The inclusion of larger and more numerous HVWs would avoid and minimize impacts to water resources. **Trend: Improving due to the potential to show improvement in water quality over time.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

Alternative C would be a middle ground between Alternatives B and D. There would be continued resource use and community development as discussed in Section 2 of Appendix N, although management actions would keep impacts limited. **Trend: Improving due to the potential to show improvement in water quality over time, though to a lesser degree than Alternative B.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

Alternative D would open increasingly more acres and river miles to resource use (e.g., timber harvesting, locatable mineral entry, mining, grazing), resulting in impacts to water resources. **Trend: Degrading, at a lesser rate than Alternative A but at a greater rate than Alternatives B or C.**

3.2.5 Fisheries

Affected Environment

There are approximately 133,853 miles of streams and rivers and 3.91 million acres of lakes and ponds within the planning area. Of these, 17,962 miles of streams and 414,967 acres of lakes and ponds have been cataloged as important for the spawning, rearing and migration of anadromous fish (Johnson and Litchfield 2016 a–c). Of the habitats catalogued in the AWC within the planning area, the majority are catalogued as Essential Fish Habitat for Pacific salmon, including spawning habitats. Approximately 25 percent (32,932 miles) of all streams and 1.4 percent (53,798 acres) of pond/lake habitats in the planning area occur on BLM-managed public lands. Similarly, about 22 percent (3,997 miles) of anadromous streams, less than 1 percent (34 acres) of anadromous lakes and ponds in the AWC are on BLM-managed public lands in the planning area (see Map 3.2.5-1). However, it is recognized that the AWC is a subset of important anadromous fish habitats, because the AWC reflects the extent of anadromous fish (including salmon) documented through fish surveys and not necessarily the actual limits of anadromous habitat.

The planning area is composed of three basins: the Unalakleet and Kuskokwim Rivers and the lower portion of the Yukon River. The Yukon and Kuskokwim drainages have the highest overall available fish habitat for both resident and anadromous fish, including spawning for salmon, whitefishes, and smelt. Appendix M provides a breakdown of available fish habitats by drainage.

Native species are widely distributed and occur in a variety of habitats. Forty native species are known to be supported by the planning area (USFWS 2004). Twenty-eight freshwater fish species occur within the planning area, possibly including two BLM sensitive species, Alaskan brook lamprey and Arctic char. All five Pacific salmon (Chinook, chum, pink, sockeye, and coho salmon) occur within the planning area. Eight additional anadromous fish species are present within the freshwaters of the planning area: Pacific lamprey, broad whitefish, humpback whitefish, least cisco, Bering cisco, sheefish, Dolly Varden, and rainbow smelt.

Fish species in the planning area can be described by the following four general groupings: subsistence, commercial, sport, and forage. In rural Alaska, subsistence fish species are extremely important for both diet and culture and include all five Pacific salmon species and non-salmon species such as whitefish, sheefish, burbot (also known as lush), northern pike, Alaska blackfish, Dolly Varden, rainbow trout, rainbow smelt, and Arctic lamprey. Sport fish species include Arctic grayling, northern pike, burbot, rainbow trout, Dolly Varden, sheefish, and salmon. Forage species are important prey for other species and include longnose suckers, slimy sculpin, lake chub, and ninespine stickleback. The Alaska Board of

Fisheries listed Yukon River Chinook salmon as a stock of yield concern in 2000, and Unalakleet River Chinook salmon as stock yield concern in 2004 (5 Alaska Administrative Code [AAC] 39.222; Kent and Bergstrom 2009).

Appendix M shows a comprehensive listing of fish species in freshwater habitats in the planning area and outlines important seasonal activities for fish species that are important for subsistence, commercial, and sport fishing.

Human activity has been minimal in the majority of the watersheds in the planning area, and most riparian and stream habitats are in natural condition. The major activities that have affected fish habitat and aquatic productivity are activities that cause surface disturbances near waterbodies and activities that occur within waterbodies, including placer mining, hard rock mining, and gravel mining within or near important fish habitats; timber harvests near important fish habitats; and stream crossings of roads, trails, and utility corridors in important fish habitats. These activities affect fish productivity by causing increased turbidity, sedimentation, erosion, substrate embeddedness, and a loss of lower trophic level production.

Direct and Indirect Effects

Table 3.2.5-1 below summarizes the nature and types of relative beneficial or adverse effects that could occur to fisheries resources, the proposed management actions that could influence those effects, and the indicators used to evaluate the potential magnitude and extent of those effects among alternatives. Table 3.2.5-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives. The analysis presented in this section is a summary. A detailed analysis, including analysis by HUC 6, is included in Appendix N.

Table 3.2.5-1: Summary of Effects to Fisheries by Management Action

Types of Effects	Management Actions	Indicators
Development and associated surface disturbance within the 100-year floodplain could potentially increase sediment loading in streams, alter stream processes, and degrade fish habitat.	• Water Resources and Fisheries Decisions • Lands and Realty Decisions, including ROW avoidance and exclusion	• RM ROW open, avoidance, or exclusion areas • Waterbodies acreage within ROW open, avoidance, or exclusion areas
Timber harvest and associated surface disturbance could potentially increase sediment loading in streams, alter stream processes, and degrade fish habitat.	• Forest and Woodland Harvest Decisions	• RMs open or closed to commercial woodland harvest • Acres of waterbodies within areas open or closed to commercial woodland harvest
Changes to stream processes and water quality from grazing activities could eliminate riparian habitats, altering watershed vegetation characteristics, and increasing nitrogen inputs to the aquatic environment.	• Livestock Grazing Decisions	• RMs within areas open and closed to grazing • Acres of waterbodies within areas open and closed to grazing
Mining within streams and watersheds could alter stream processes and fish habitat directly by affecting riparian function: removing pools and overwintering areas, destroying spawning beds, and impacting short- and long-term water quality.	• Mineral Decisions	• Acres open to locatable, salable, and leasable mineral development

Types of Effects	Management Actions	Indicators
Stream crossings at ROW intersections for roads, trails, and/or utility corridors could increase sedimentation, affect fish passage, and alter fish habitat directly or indirectly by affecting riparian function, and/or access to fish habitat. Concentrated recreational use could increase nutrient inputs to streams and could alter aquatic productivity either beneficially or adversely. Summer stream crossings with ATVs and UTVs could create localized degradation of fish habitat and affect fish passage. Winter stream crossings with UTVs could affect sensitive fish overwintering habitat (including eggs of summer/fall spawning species).	• Lands and Realty Decisions, including ROW avoidance and exclusion • Recreation and Visitor Services Decisions • Transportation and Travel Management Decisions	• Linear miles of potential stream/acres of potential pond/lake habitat potentially affected • Linear miles of documented anadromous stream/acres of documented anadromous pond/lake habitat potentially affected, including all documented anadromous fish spawning habitats potentially affected
Designation of ACECs would indirectly reduce effects on fisheries by reducing development and associated stream alteration by increasing management prescriptions for such areas.	• Designation of ACECs	• Acres of designated ACECs

Table 3.2.5-2: Summary of Impacts to Fisheries by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Streams [RM (%)][1]				
From Water Resources and Fisheries Management Practices (management decisions influence areas open and closed to ROW)				
ROW – Open	[3]	6,454 (20)	11,985 (36)	19,151 (58)
ROW – Avoidance	[3]	21,887 (66)	19,420 (59)	13,518 (41)
ROW – Avoidance for Linear Realty Actions	[3]	-	1,526 (5)	-
ROW – Exclusion	[3]	4,590 (14)	-	-
ROW – Permitted on a Case-by-case Basis	[3]	-	-	262 (1)
From Forestry and Woodland Products Management Actions				
Commercial – Closed	2,969 (9)	23,934 (73)	204 (1)	-
Commercial – Open case-by-case	26,963 (82)	54 (<1)	16,605 (50)	82 (<1)
Commercial – Open	3,000 (9)	8,893 (27)	16,122 (49)	32,850 (100)
From Grazing Management Actions				
Grazing – Closed	639 (2)	32,932 (100)	1,449 (4)	-
Grazing – Open on a Case-by-case Basis	32,294 (98)	-	17,648 (54)	32,932 (100)
Grazing – Areas Closed to Grazing until Standards are Developed	-	-	13,835 (42)	-
From Locatable Mineral Management Actions				
Locatable – Total Open – High LMP	85 (<1)	40 (<1)	92 (<1)	92 (<1)
Locatable – Total Open – Medium LMP	524 (2)	369 (1)	1082 (3)	1082 (3)
Locatable – Total Withdrawn – High LMP	7 (<1)	52 (<1)	-	-
Locatable – Total Withdrawn – Medium LMP	558 (2)	712 (2)	-	-
From Travel and Transportation Management				
Travel – Lands with Wilderness Characteristics TMA	[3]	666 (2)	-	-
Travel – Summer Casual OHV Limited	[3]	31,367 (95)	32,293 (98)	204 (<1)
Travel – Summer Casual OHV Prohibited	[3]	1,565 (5)	639 (2)	639 (2)
Travel – Summer Subsistence OHV Limited	[3]	871 (2)	-	639 (2)
Travel – Summer Subsistence OHV Prohibited	[3]	694 (2)	639 (2)	-
Travel – Winter Casual Snowmobiles	[3]	32,931 (100)	7,133 (22)	639 (2)
Travel – Winter Subsistence Snowmobiles	[3]	9,989 (30)	7,133 (22)	639 (2)
Travel – Summer OHV Subsistence Allowed	[3]	31,367 (95)	32,293 (98)	32,087 (97)

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Travel – Summer OHV Subsistence Denied	[3]	1,565	844 (3)	844 (3)
Travel – Winter Subsistence – Allowed	[3]	32,265 (98)	32,931 (100)	32,931 (100)
Travel – Winter Subsistence – Prohibited	[3]	666 (2)	-	-
Waterbodies [acres (%)][2]				
From Water Resources and Fisheries Management Practices				
ROW – Open	[3]	13,748 (26)	31,015 (58)	36,969 (69)
ROW – Avoidance	[3]	29,520 (55)	17,287 (32)	16,486 (31)
ROW – Avoidance for Linear Realty Actions	[3]	-	5,494 (10)	-
ROW – Exclusion	[3]	10,528 (20)	-	-
ROW – Open on a Case-by-case Basis	[3]	-	-	341 (<1)
From Forestry and Woodland Products Management Actions				
Commercial – Closed	372 (<1)	20,595 (38)	131 (<1)	-
Commercial – Open case-by-case	51,225 (95)	56 (<1)	9,015 (17)	56 (<1)
Commercial – Open	2,199 (4)	33,144 (62)	44,650 (83)	53,740 (100)
From Grazing Management Actions				
Grazing – Closed	352 (<1)	53,798 (100)	1,264 (2)	-
Grazing – Open on a Case-by-case Basis	53,446 (99)	-	40,152 (75)	53,798 (100)
Grazing – Areas Closed Until Standards are Developed	-	-	12,380 (23)	-
From Locatable Minerals Management Actions				
Locatable – Total Open – High LMP	6 (<1)	1 (<1)	6 (<1)	6 (<1)
Locatable – Total Open – Medium LMP	706 (1)	608 (1)	1033 (2)	1033 (2)
Locatable – Total Withdrawn – High LMP	0 (0)	5 (<1)	-	-
Locatable – Total Withdrawn – Medium LMP	328 (<1)	426 (<1)	-	-
From Travel and Transportation Management				
Travel – INHT TMA	[3]	1,298 (2)	1,250 (2)	1,250 (2)
Travel – Lands with Wilderness Characteristics TMA	[3]	2,878 (2)	-	-
Travel – Summer Casual OHV Limited	[3]	49,623 (92)	52,678 (98)	131 (<1)
Travel – Summer Casual OHV Prohibited	[3]	4,175 (8)	1,118 (2)	1,118 (2)
Travel – Summer Subsistence OHV Limited	[3]	3,009 (6)	-	1,118 (2)
Travel – Summer Subsistence OHV Prohibited	[3]	1,167 (2)	1,118 (2)	-
Travel – Winter Casual Snowmobiles	[3]	53,796 (100)	6,301 (12)	1,118 (2)
Travel – Winter Subsistence Snowmobiles	[3]	15,929 (30)	6,301 (12)	1,118 (2)
Travel – Summer OHV Subsistence Allowed	[3]	49,621 (92)	52,678 (98)	52,547 (98)
Travel – Summer OHV Subsistence Denied	[3]	4,175 (8)	1,250 (2)	1,250 (2)
Travel – Winter Subsistence – Allowed	[3]	50,918 (95)	53,796 (100)	53,796(100)
Travel – Winter Subsistence – Prohibited	[3]	2,878 (5)	-	-
Designation Acres and RMs within Designated ACECs[1]				
From Areas of Critical Environmental Concern Management Actions				
Anvik River ACEC	114,386 acres 433 RMs (1%)	13,438 acres within existing Anvik River ACEC would no longer be managed as an ACEC 52 RM no longer managed as ACEC	[4]	[4]
Anvik River Watershed ACEC	Not managed as an ACEC.	248,867 acres 760 RM (2%)	[4]	[4]
Gisasa River ACEC	278,055 acres 521 RM (2%)	278,241 acres 521 RM (2%)	[4]	[4]

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Inglutalik River ACEC	71,713 acres 116 RM (<1%)	70,888 acres 116 RM (<1%)	[4]	[4]
Kateel River ACEC	568,083 acres 1,032 RM (3%)	692,659 acres 1,262 RM (4%)	[4]	[4]
Nulato River ACEC	Not managed as an ACEC.	344,182 acres 605 RM (2%)	[4]	[4]
Shaktoolik River ACEC	192,591 acres 393 RM (1%)	191,067 acres 396 RM (1%)	[4]	[4]
Sheefish ACEC	Not managed as an ACEC.	696,901 acres 2,208 RM (7%)	[4]	[4]
Swift River Whitefish Spawning ACEC	Not managed as an ACEC.	220,032 acres 598 RM (2%)	[4]	[4]
Ungalik River ACEC	112,719 acres 393 RM (1%)	113,454 acres 183 RM (1%)	[4]	[4]
North River ACEC	132,200 acres 322 RM (1%)	64,855 acres no longer managed as an ACEC. 156 RM no longer managed as ACEC	[4]	[4]
Unalakleet River Watershed ACEC	Not managed as an ACEC.	733,995 acres 1,926 RM (6%)	[4]	[4]

Notes:
1) Percentage based on total RMs on BLM-managed land in the planning area.
2) Percentage based on total acres of waterbodies on BLM-managed land in the planning area.
3) There are no current management decisions identified for Alternative A.
4) There are no ACECs proposed under this alternative.

Effects from Alternative A

Under Alternative A, management actions, including forestry and woodland products management, grazing, mineral management, and travel/transportation, have the potential to result in development and associated surface disturbance within the 100-year floodplain, which could increase sediment loading in the streams, alter stream processes, and degrade aquatic habitat. Alternative A does not limit development of aquatic habitat within the 100-year floodplain.

Timber harvest and associated surface disturbance resulting from forest and woodland harvest decisions have the potential to increase sediment loading in streams, alter stream processes, and degrade fish habitat. Alternative A includes about 3,000 miles of streams and 2,199 acres of other waterbodies open to commercial woodland harvest and an additional 26,963 miles of streams and 51,225 acres of other waterbodies open to commercial woodland harvest on a case-by-case basis. Commercial woodland harvest activities have the potential to affect up to 91 percent of river miles and up to about 99 percent of pond and lake habitat on BLM-managed land in the planning area.

Livestock grazing decisions have the potential to change stream processes and water quality by degrading or eliminating riparian habitat, altering watershed vegetation characteristics, and increasing nitrogen inputs to the aquatic environment. Under Alternative A, areas open to grazing activities do not include measurable streams and other waterbodies. Areas that could be open on a case-by-case basis include 32,294 miles of streams (about 98 percent of BLM-managed stream habitats in the planning area) and 53,446 acres of other waterbodies (about 99 percent of other waterbodies in the planning area on BLM-managed land) that could be affected. Areas closed to grazing would avoid effects from grazing on 639 miles of streams and 352 acres of other waterbodies in the planning area. Alternative A excludes the

Unalakleet and Anvik Rivers and their major tributaries from grazing leases to avoid or minimize impacts on important fisheries resources within these drainages.

Mineral extraction within streams and watersheds could alter stream processes and fish habitat directly by removing pools and overwintering areas, destroying spawning beds, and impacting short- and long-term water quality. Locatable mineral development would be open on about 85 miles of streams (less than 1 percent of BLM-managed stream habitats in the planning area) and 6 acres of other waterbodies (less than 1 percent of other waterbodies in the planning area on BLM-managed lands) in lands with high LMP. This would include about 524 miles of streams (about 2 percent of BLM-managed stream habitats in the planning area) and 706 acres of other waterbodies (about 1 percent of other waterbodies in the planning area on BLM-managed land) open to development within medium or high LMP, where potential for mineral development and associated impacts would be most likely.

Stream crossings at ROW intersections for roads, trails, and/or utility corridors could increase sedimentation, affect fish passage, and alter fish habitat directly or indirectly by affecting riparian function and/or access to fish habitat. Concentrated vehicle use could increase nutrient inputs to streams and could alter aquatic productivity either beneficially or adversely. Summer stream crossings with ATVs and UTVs could create localized degradation of fish habitat and affect fish passage. Winter stream crossings with UTVs could affect sensitive fish overwintering habitat (including eggs of summer/fall spawning species). Alternative A includes no management decisions with regards to transportation and travel.

Designation of ACECs would indirectly reduce potential effects on fisheries by reducing potential development and associated stream alteration by increasing management prescriptions for such areas. Alternative A would maintain the current ACEC designations on BLM lands; there would be no changes to current ACECs or the addition of new ACECs. Current ACECs that meet relevance and importance criteria for fisheries include Anvik River ACEC (114,386 acres); Gisasa River ACEC (278,055 acres); Inglutalik River ACEC (71,713 acres); Kateel River ACEC (568,083 acres); Shaktoolik River ACEC (192,591 acres); Ungalik River ACEC (112,719 acres); and North River ACEC (132,200 acres). Protection of fisheries is the primary relevance and importance for Anvik River ACEC, Inglutalik River ACEC, Kateel River ACEC, Shaktoolik River ACEC, Ungalik River ACEC, and North River ACEC.

Alternative A could result in more impacts to fish habitat from new ROW, grazing, and OHV use than the other alternatives.

Although Alternative A would have fewer acres open to commercial woodland harvest and locatable mineral development in medium and high LMP areas compared to Alternative C and D, it would not include BMPs, SOPs, and detailed reclamation requirements to minimize associated impacts that would be included under Alternative C and D.

Effects Common to All Action Alternatives

The effects of the proposed management actions are similar among alternatives but do vary in the magnitude of potential miles of stream habitat that could be affected. Under all action alternatives, permanent structures and disturbance over 5 acres would be avoided within floodplains, which would minimize impacts to fish habitat such as sediment loading and alteration of stream processes that could occur from disturbance in floodplains.

Effects from Alternative B

Under Alternative B, management actions, including forestry and woodland products management, grazing, mineral development, and travel/transportation, have the potential to result in development and associated surface disturbance within the 100-year floodplain, which could increase sediment loading in the streams, alter stream processes, and degrade aquatic habitat.

Timber harvest and associated surface disturbance resulting from forest and woodland harvest decisions have the potential to increase sediment loading in streams, alter stream processes, and degrade fish habitat. Alternative B would permit commercial timber harvest activities potentially affecting 8,893 miles of streams and 33,144 acres of other waterbodies.

Livestock grazing activity decisions have the potential to affect changes to stream processes and water quality by degrading or eliminating riparian habitat, altering watershed vegetation characteristics, and increasing nitrogen inputs to the aquatic environment. Alternative B would close all areas to grazing, preventing potential livestock grazing effects on approximately 32,932 miles of streams and 53,798 acres of other waterbodies.

Mineral extraction within streams and within watersheds could alter stream processes and fish habitat directly by removing pools and overwintering areas, destroying spawning beds, and impacting short- and long-term water quality. Under Alternative B, locatable mineral development has the potential to affect about 40 miles of streams (less than 1 percent of streams in the planning area on BLM-managed lands) and about 1 acre of other waterbodies (less than 1 percent of other water bodies in the planning area on BLM-managed lands) in high LMP areas and approximately 369 miles of streams (about 1 percent of BLM-managed stream habitats in the planning area) and 608 acres of other waterbodies (about 1 percent of other waterbodies in the planning area on BLM-managed lands) in medium LMP areas.

Stream crossings at ROW intersections for roads, trails, and/or utility corridors could increase sedimentation, affect fish passage, and alter fish habitat directly or indirectly by affecting riparian function and/or access to fish habitat. Concentrated vehicle use could increase nutrient inputs to streams and could alter aquatic productivity either beneficially or adversely. Summer stream crossings with ATVs and UTVs could create localized degradation of fish habitat and affect fish passage. Winter stream crossings with UTVs could affect sensitive fish overwintering habitat (including eggs of summer/fall spawning species). Areas open to ROW include 6,454 miles of streams (about 20 percent of planning area river miles) and 13,748 acres of other waterbodies (about 26 percent of planning area pond and lake habitat) that could be affected (Table 3.2.5-2).

Designation of ACECs would indirectly reduce potential effects on fisheries by reducing potential for surface-disturbing development in the ACEC as well as requiring development within the 100-year floodplain to not adversely affect the condition and function of aquatic and riparian systems and habitats.

Alternative B would maintain the current designations for ACECs that meet relevant and importance criteria for fish on BLM lands with the exception of the elimination of the North River ACEC and shifting of management of some of those lands to new ACECs and additional ACECs. ACEC management would include the following: Anvik River ACEC would be expanded (248,867 acres); Gisasa River ACEC would be expanded (278,241 acres); Inglutalik River ACEC would be reduced (70,888 acres); Kateel River ACEC would be expanded (692,659 acres); Nulato River ACEC would be added (344,182 acres); Shaktoolik River ACEC would be reduced (191,067 acres); Sheefish Spawning ACEC would be added (696,901 acres); Swift River Whitefish Spawning ACEC would be added (220,032 Acres), Ungalik River ACEC would be expanded (113,454 acres); North River ACEC would be

removed (however, approximately 50 percent of the existing acreage (67,315 acres) would be maintained and managed as ACECs within the new Nulato River and Unalakleet River Watershed ACECs and within the existing Shaktoolik ACEC); and Unalakleet River Watershed ACEC would be added (733,995 acres). Fisheries is the primary relevance and importance value for the ACECs listed above, with the exception of Nulato River ACEC and Gisasa River ACEC.

Compared to the other alternatives, Alternative B would manage the most river miles and acres of waterbodies to minimize potential impacts from forestry and woodland products, grazing, mineral management, and travel and transportation. Alternative B provides the most measures to avoid and minimize impacts on fish and aquatic habitats and would therefore have the lowest likelihood to result in substantial impacts at any scale to fish and aquatic habitats in the planning area.

Effects from Alternative C

Under Alternative C, management actions, including forestry and woodland products management, grazing, mineral management, and travel/transportation, have the potential to result in development and associated surface disturbance within the 100-year floodplain, which could increase sediment loading in the streams, alter stream processes, and degrade aquatic habitat. This alternative emphasizes adaptive management at the planning level to ensure long-term sustainability of resources while providing for multiple uses. No ACECs would be managed under Alternative C.

Timber harvest and associated surface disturbance resulting from forest and woodland harvest decisions have the potential to increase sediment loading in streams, alter stream processes, and degrade fish habitat. Alternative C would permit commercial woodland harvest activities in areas that could affect up to about 16,122 miles of streams and 44,650 acres of other waterbodies. Alternative C would open an additional 16,605 miles of streams and 9,015 acres of other waterbodies to commercial woodland harvest on a case-by-case basis. Most stream and waterbody habitats would be susceptible to potential adverse impacts from commercial woodland harvest in these areas. Only about 1 percent of river miles and less than 1 percent of other waterbody acres would be closed to commercial woodland harvest under Alternative C.

Livestock grazing activity decisions have the potential to affect changes to stream processes and water quality by degrading or eliminating riparian habitat, altering watershed vegetation characteristics, and increasing nitrogen inputs to the aquatic environment. Areas open to grazing under Alternative C would do not include areas with aquatic habitat, and therefore, would have no associated impacts. Areas open to grazing on a case-by-case basis have the potential to affect 17,648 miles of streams and 40,152 acres of other waterbodies. Areas closed to grazing under Alternative C (1,449 miles of streams and 1,264 acres of other waterbodies) would not experience impacts from grazing.

Mineral extraction within streams and watersheds could alter stream processes and fish habitat directly by removing pools and overwintering areas, destroying spawning beds, and impacting short- and long-term water quality. Alternative C would open all medium and high LMP areas on BLM-managed land in the planning area to locatable mineral development increasing the potential for impacts to aquatic habitat where present. Open areas would encompass almost 92 miles of streams (3 percent of streams in the planning area on BLM-managed lands) and 6 acres of other waterbodies (less than 1 percent) in lands with high LMP and about 1,082 miles of streams (3 percent of streams in the planning area on BLM-managed lands) and 1,033 acres of waterbodies (about 2 percent) in medium LMP areas.

Stream crossings at ROW intersections for roads, trails, and/or utility corridors could increase sedimentation, affect fish passage, and alter fish habitat directly or indirectly by affecting riparian function and/or access to fish habitat. Concentrated recreational use could increase nutrient inputs to streams and could alter aquatic productivity either beneficially or adversely. Summer stream crossings with ATVs and UTVs could create localized degradation of fish habitat and affect fish passage. Winter stream crossings with UTVs could affect sensitive fish overwintering habitat (including eggs of summer/fall spawning species). Areas open to ROW under Alternative C include about 11,985 river miles and 31,015 acres of other waterbodies that could be affected (Table 3.2.5-2).

Designation of ACECs could indirectly reduce potential effects on fisheries by reducing potential development and associated stream alteration by increasing management prescriptions for such areas; however, Alternative C removes all management of ACECs, including currently managed ACECs. This would indirectly result in potential for greater disturbance because management prescriptions would not be applied.

Alternative C ranks second in terms avoiding and minimizing impacts on river miles and acres of other waterbodies from management actions associated with water resources, grazing, and travel and transportation. With respect to mineral management actions and forestry and woodland products, Alternative C would open more of the planning area up to these activities than Alternatives A and B, which would increase the geographic extent of associated impacts. However, the magnitude of associated impacts would likely be less than Alternative A due to BMPs, SOPs, and detailed reclamation requirements outlined in Appendix K and Chapter 2 of this Draft RMP/EIS.

Effects from Alternative D

Management actions, including forestry and woodland products management, grazing, mineral management, and travel/transportation, have the potential to result in development and associated surface disturbance within the 100-year floodplain, which could increase sediment loading in the streams, alter stream processes, and degrade aquatic habitat.

Timber harvest and associated surface disturbance resulting from forest and woodland harvest decisions have the potential to increase sediment loading in streams, alter stream processes, and degrade fish habitat. Alternative D would permit commercial woodland harvest activities in areas encompassing about 32,850 miles of streams and 53,740 acres of other waterbodies. Alternative D would also permit commercial woodland harvest on a case-by-case basis in areas encompassing an additional 82 miles of streams and 56 acres of other waterbodies.

Livestock grazing activity decisions have the potential to affect changes to stream processes and water quality by degrading or eliminating riparian habitat, altering watershed vegetation characteristics, and increasing nitrogen inputs to the aquatic environment. Lands open to grazing activities under Alternative D do not include areas with aquatic habitat. Areas open on a case-by-case basis include 32,932 miles of streams and 53,798 acres of other waterbodies, which each account for 100 percent of BLM-managed aquatic habitats in the planning area, that could be affected.

Mineral extraction within streams and watersheds could alter stream processes and fish habitat directly by removing pools and overwintering areas, destroying spawning beds, and impacting short- and long-term water quality. Alternative D would open all medium and high LMP areas on BLM-managed land to locatable mineral development. These open areas are the same as Alternative C; therefore, impacts to streams and waterbodies would be the same as described previously for Alternative C.

Stream crossings at ROW intersections for roads, trails, and/or utility corridors could increase sedimentation, affect fish passage, and alter fish habitat directly or indirectly by affecting riparian function and/or access to fish habitat. Concentrated vehicle use could increase nutrient inputs to streams and could alter aquatic productivity either beneficially or adversely. Summer stream crossings with ATVs and UTVs could create localized degradation of fish habitat and affect fish passage. Winter stream crossings with UTVs could affect sensitive fish overwintering habitat (including eggs of summer/fall spawning species). Areas open to new ROW that could experience associated impacts include 19,151 miles of streams and 36,969 acres of other waterbodies. ROW avoidance could avoid or minimize impacts on 13,518 miles of streams and 16,486 acres of other waterbodies. Areas permitted for ROW on a case-by-case basis encompass 262 river miles and 341 acres of other waterbodies that could incur impacts from surface-disturbing activities (Table 3.2.5-2).

Designation of ACECs could indirectly reduce potential effects on fisheries by reducing potential development and associated stream alteration; however, Alternative D would remove all management of ACECs, including currently managed ACECs. This would indirectly result in potential for greater disturbance because management prescriptions would not be applied.

Alternative D provides the greatest opportunity for multiple uses in the planning area and therefore the greatest potential for impacts to streams and fish habitat from forestry and woodland product harvest, grazing, ROW, and mineral development. of all management alternatives. Areas open to new ROW development in areas with streams and waterbodies is greater than Alternative B and C, and therefore could result in a greater extent of impacts to aquatic habitat. ROW impacts would be less than Alternative A however since Alternative A includes no ROW avoidance areas. As shown in Map 3.3.3-4, the majority of known lode deposits (placer) are not located on BLM lands, and any that are have generally been dual selected for State and Native ownership. Therefore, impacts to fish habitat on BLM-managed lands from placer mining are unlikely despite fewer management prescriptions from ACECs and HVWs under Alternative D, compared with Alternatives B and C. Alternative D could impact the largest geographic extent of fish habitat in terms of river miles and acres of waterbodies located in areas open to surface-disturbing activities; however, Alternative D would include BMPs, SOPs, and detailed reclamation requirements as described in Appendix K and Chapter 2 of this Draft RMP/EIS that are not included under Alternative A.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Based on past commercial, subsistence, and personal use fisheries harvest data, resident fish production is generally forecast to remain stable in the planning area. The forecasted extent of disturbances to habitat is expected to remain minimal throughout the majority of the watersheds in the planning area. Activities that occur within the planning area that have the highest potential to affect fish production include placer mining, hard rock mining, gravel mining, timber harvests, and stream crossings of roads, trails, and utility corridors in important fish habitats. Impacts from these potential activities are unknown, though not expected to substantially increase in the near future. In terms of past and likely foreseeable activities within the management actions evaluated throughout this document and the total fish habitat available within the planning area and on BLM-managed lands, all alternatives would likely produce similar overall low level of impact to fish resources in the drainages evaluated—the exception being that alternatives that

fail to provide adequate protections to whitefish spawning areas could have higher magnitude and longer lasting effects. **Trend: Stabilized**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Alternative A represents the status quo. Any activities or actions that could degrade or remove fish and aquatic habitat could result in impacts to the resource. However, current forecasts do not indicate substantial increases in development throughout the planning area, and fish resources throughout the planning area are anticipated to remain stable. **Trend: No contribution to existing trend (remain stabilized)**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Alternative B would avoid and minimize impacts to fish habitat throughout the planning area more than any other alternative. The inclusion of larger and more numerous HVWs and ACECs would minimize and prevent impacts to aquatic habitat, and fish resources would maintain healthy populations. The inclusion of the Sheefish and Swift River Whitefish Spawning ACECs would provide incrementally more protective measures specific to aquatic habitats important for sheefish and whitefishes that rely on these habitats for spawning. **Trend: Counters existing trend (improving)**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

The effectiveness of Alternative C to minimize impacts to fish and aquatic resources falls between Alternative B (least impactful) and Alternative D (potentially most impactful) with respect to acreage of impacts. The inclusion of a greater number of HVWs would minimize and prevent impacts to fish habitat and allow aquatic species to maintain healthy populations; however, Alternative C would allow more surface-disturbing activities that could affect fish habitat than Alternative B. There would be no ACECs considered under this alternative that would manage aquatic species—specifically, important subsistence species such as chum and Chinook salmon, sheefish, or whitefish. BMPs, SOPs, and detailed reclamation requirements included under Alternative C would help to maintain fish habitat and healthy populations. **Trend: Counters existing trend (improving but at a lesser rate than Alternative B)**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

Alternative D consistently allows more development with fewer restrictions, decreases protected aquatic habitat, and opens more areas to activities that could potentially degrade fish and aquatic resource habitats. There would be no ACECs considered under this alternative that could minimize impacts to habitat for aquatic species—specifically, important subsistence species such as chum and Chinook salmon, sheefish, or whitefish. Furthermore, the substantially smaller areas managed as HVWs compared to Alternatives B and C further compound the potential for future cumulative impacts. **Trend: Counters existing trend (degrading)**

3.2.6 Vegetation

Affected Environment

Vegetation Communities

Vegetation community types are shown in Map 3.2.6-1, and described in detail in Appendix M. Based on available vegetation data, approximately a third of the planning area is forested and a third supports shrub communities. Upland and lowland black spruce forests are common in the eastern side of the planning area. White spruce is found on warmer, well-drained sites and often occurs at treeline. White spruce is a late-succession seral stage that is typically preceded by deciduous forest. Pure deciduous forests are relatively uncommon, typically occurring on south-facing slopes or well-drained sites on other aspects. Non-forested lowland bogs occur where shallow permafrost impedes drainage and the soil remains too wet for tree growth. Shrub types occur in a variety of habitats and may be abundant following wildland fire. Above treeline, low shrub grades into dwarf shrub tundra, and wet areas above treeline often support herbaceous communities. Steep south-facing slopes may support steppe-like communities dominated by drought-tolerant species, which are typically sites of high species diversity and may support Sensitive and Watch species. Vegetation communities of interest regarding divergence from potential natural conditions include: 1) tall shrub, low shrub, and floodplains (generalized moose habitat); 2) lichen habitats (generalized caribou habitat); 3) white spruce on well-drained floodplains; 4) dwarf shrub and sparsely vegetated areas (generalized BLM sensitive plant species habitat); and 5) herbaceous wetlands. Ecosystems that are considered rare or of special conservation value include pingos that support forests, tamarack-dominated associations, dunes that have been stabilized by forests, limestone geologic substrate areas, and serpentine geologic substrate areas.

Sensitive Plant Species

Four BLM-Alaska Sensitive plant species occur in the planning area (Map 3.2.6-2): Arctic dwarf primrose (*Douglasia beringensis*), Eurasian junegrass (*Koeleria asiatica*), pearshaped smeloskia (*Smelowskia pyriformis*), and Siberian false-oats (*Trisetum sibiricum* ssp. *Torale*). The first three have been found on BLM-managed lands. All four species occur primarily in bare ground, sparsely vegetated mesic herbaceous areas, dwarf shrub, and persistently snow-covered areas. Locations on BLM-managed land are primarily in higher elevation areas, on mountain side slopes of the Lime Hills, Nulato Hills, Terra Cotta Mountains, Kuskokwim Mountains, and Alaska Range.

Vegetation and Wildland Fire

Northern boreal forests are adapted to wildland fires; vegetation recovers by sprouting from roots, seed banks, or seed transported from outside the burned area. Sites with more severe fire and lower soil moisture typically convert from spruce-dominated to deciduous-dominated forests (Johnstone and Hollingsworth 2007). Some later successional species, especially lichens, are scarce in post-fire stands for long periods. Black spruce often replaces itself as the dominant tree in the absence of competition from other tree species. Post-fire recovery of white spruce stands depends on the stage of seed production and the distance to unburned spruce as sources of new seed and/or the presence of dispersal agents.

Direct and Indirect Effects

Table 3.2.6-1 below summarizes the nature and types of beneficial or adverse effects that could occur to vegetation and special status plants, proposed management actions that could influence those effects, and

indicators used to measure the potential magnitude and extent of the effects. Table 3.2.6-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives.

Table 3.2.6-1: Summary of Effects to Vegetation by Management Action

Types of Effects	Management Actions	Indicators
Removal of or damage to vegetation could occur with commercial woodland harvest, livestock grazing, ROW authorization, OHV use, mineral actions, and fire and fuels treatments. If SSS flora occur in these areas, they could also be removed or damaged ll. Damage to individual plants (i.e., crushing, removal or breaking of leaves or branches, damage to roots, etc.), could occur with surface-disturbing actions such as certain types of mineral actions, personal use/subsistence woodland harvest, fire and fuels treatments, OHV use, or livestock grazing.	• Wildland Fire Management Decisions • Woodland Harvest Decisions • Livestock Grazing Management Decisions • Mineral Decisions • Lands and Realty Decisions • Transportation and Travel Management Decisions • Recreation and Visitor Services Decisions	• Acres open to commercial woodland harvest • Acres open to livestock grazing • Acres open to mineral leasing subject to standard stipulations • Acres open to ROW authorization
Conditions of vegetative communities and SSS flora habitat could be improved through requirements to avoid and minimize impacts, monitor, and mitigate for unavoidable impact, and/or adhere to cited standards associated with management actions for vegetation and other resources.	• Buffers Associated with Soils and Vegetation Decisions • Mineral Decisions • Woodland Harvest Decisions • VRM Class Designations • Lands with Wilderness Characteristics Decisions • ACEC Designations • Lands and Realty Decisions • Transportation and Travel Management Decisions • Designation of the INHT NTMC	• Minimization of impacts to vegetation associated with soils management • Minimization of impacts to vegetation associated with vegetation management • Total VRM Class I and II acreages • Acres managed with wilderness characteristics as a priority • Acres managed for multiple uses while applying restrictions to reduce impacts on wilderness characteristics • Acres closed to commercial woodland harvest • Acres open to locatable mineral development in areas of high or medium LMP, open to salable minerals, NSO for mineral actions, or open to mineral leasing • Acres affected by ROW restrictions (i.e., avoidance or exclusion areas) • Acres of OHV restrictions • Acres affected by ACEC designations • Designation of the INHT NTMC

Table 3.2.6-2: Summary of Impacts to Vegetation by Indicator

Resource Indicator	Alternative A[1]	Alternative B[1]	Alternative C[1]	Alternative D[1]
Acres open to commercial woodland harvest	1,644,588 acres (12%)	5,017,161 acres (37%)	9,811,727 acres (73%)	13,423,449 acres (>99%)
Acres open to commercial woodland harvest on a case-by-case basis	10,237,555 acres (76%)	29,829 acres (<1%)	3,607,214 acres (27%)	42,445 acres (<1%)
Acres open to livestock grazing on a case-by-case basis	13,304,555 acres (99%)	0 acres (0%)	7,742,975 acres (58%)	13,465,894 acres (100%)
Acres open to locatable mineral entry	8,661,406 acres (64%)	3,623,397 acres (27%)	13,418,941 acres (>99%)	13,418,941 acres (>99%)
Acres open to locatable mineral development in areas identified to have medium to high LMP in the planning area	294,325 acres of medium or high LMP (52%)[2]	202,610 acres of medium or high LMP (36%)[2]	565,489 acres of medium or high LMP (100%)[2]	565,489 acres of medium or high LMP (100%)[2]
Acres open to salable mineral entry on a case-by-case basis	0 acres (0%)	0 acres (0%)	6,536,635 acres (49%)	0 acres (0%)
Acres open to salable mineral entry	8,661,406 acres (64%)	3,623,397 acres (27%)	6,645,750 acres (49%)	13,182,385 acres (98%)

Resource Indicator	Alternative A[1]	Alternative B[1]	Alternative C[1]	Alternative D[1]
Acres open to mineral leasing subject to standard stipulations	8,246,152 acres (61%)	2,517,414 acres (19%)	6,594,906 acres (49%)	13,182,385 acres (98%)
NSO for leasable mineral actions	17,521 acres (<1%)	1,597,599 acres (12%)	6,824,035 acres (51%)	236,556 acres (2%)
Acres open to ROW location	No acres specified	3,176,977 acres (24%)	5,820,362 acres (43%)	8,234,323 acres (61%)
ROW permitted on a case-by-case basis	13,465,894 acres (100%)	0 acres (0%)	0 acres (0%)	100,644 acres (<1%)
ROW exclusion areas	No acres specified	1,464,069 acres (11%)	0 acres (0%)	0 acres (0%)
ROW avoidance areas	No acres specified	8,824,848 acres (66%)	7,069,494 acres (52%)	5,130,927 acres (38%)
Minimization of impacts to vegetation associated with soils management	Limit disturbance in floodplains and springs (protections not specific)	ROW exclusion in permafrost areas and restrictions of surface-disturbing activities within 100-year floodplains and within 100 feet of natural springs	ROW avoidance in permafrost areas	ROW authorization in permafrost areas on a case-by-case basis
Minimization of impacts to vegetation associated with vegetation management	No acres specified	OHV use limitations, trail relocation, trail hardening, or trail closure in: • Dwarf shrub and lichen: 2,711,156 acres (20%) • Sparse vegetation: 139 acres (<1%) 300-foot setback for SSS flora habitat Limestone or serpentine geologic substrate (no acreage available)	OHV use limitations, trail relocation, trail hardening, or trail closure in: • Dwarf shrub and lichen habitats: 2,711,156 acres (20%) • Sparse vegetation types: 139 acres (<1%) 100-foot setback for SSS flora habitat	None specified
VRM Class I (natural ecological changes allowed)	46,953 acres (<1%)	1,335,771 acres (10%)	46,953 acres (<1%)	46,953 acres (<1%)
VRM Class II (low-level changes allowed)	0 acres (0%)	6,490,087 acres (48%)	2,766,229 acres (21%)	679,553 acres (5%)
Lands with wilderness characteristics TMA	No acres specified	277,489 acres (2%)	0 acres (0%)	0 acres (0%)
Managed for multiple uses while applying restrictions to reduce impacts on wilderness characteristics	No acres specified	12,040,490 acres (89%)	8,105,979 (60%)	0 acres (0%)
Summer casual OHV access prohibited	46,953 acres (<1%)	565,955 acres (4%)	225,925 acres (2%)	225,925 acres (2%)
Summer subsistence OHV access prohibited	46,953 acres (<1%)	241,512 acres (2%)	225,925 acres (2%)	0 acres (0%)
Summer casual OHV access limited to existing trails	No acres specified	12,899,939 acres (96%)	13,239,969 acres (98%)	46,953 acres (<1%)
Summer subsistence OHV access limited to existing trails	No acres specified	324,443 acres (2%)	0 acres (0%)	225,925 acres (2%)
ACEC designations	1,884,376 acres (14%)	3,912,698 acres (29%)	0 acres (0%)	0 acres (0%)
Designation of the INHT NTMC	NTMC not designated	288,466 acres (2%)	273,242 acres (2%)	273,242 acres (2%)

Notes:
1) Unless otherwise specified, percentages are based on BLM-managed land in the planning area.
2) Percentages based on all areas of medium or high LMP on BLM-managed land in the planning area.

Effects from Alternative A

Under Alternative A, management of livestock grazing, surface-disturbing mineral actions, commercial woodland harvest, ROW authorization, and OHV use could adversely impact vegetation due to actions that could remove or damage individual plants. These actions could be authorized on various acreages in

the planning area (Table 3.2.6-2). In general, extents of land that could be subject to these actions are identified less precisely than under the action alternatives and rely more on case-by-case authorization. OHV use could theoretically occur anywhere in the planning area except for the Unalakleet Wild River Corridor, though it would more likely be restricted to commonly used travel, subsistence, and recreation routes.

Conversely, impacts to vegetation would be minimized in specific areas (Table 3.2.6-2), where lands are designated as VRM Class I; being managed as ACECs; closed to locatable, salable, or leasable mineral development; being designated as NSO for mineral entry; or being closed to commercial woodland harvest. These management actions would continue to minimize impacts to vegetation and SSS flora in these areas from implementation of transportation or utility projects, surface-disturbing mineral actions, or authorizations of other ROWs. Minimization of impacts would generally occur to lesser extent than under Alternative B or C but, in most cases, to a greater extent than under Alternative D.

Impacts to vegetation and SSS flora under Alternative A would be minimized due to management guidance in existing management plans that limits disturbance in floodplains, springs, wetlands, riparian areas, threatened and endangered plant habitat, and caribou habitat (lichen-rich areas) and provides guidance for avoiding impacts to wildlife species and for sustainable yield of forest resources. However, guidance is inconsistent between plans and often does not provide specific actions or specific acreages; thus, minimization of impacts to vegetation is generally less extensive and defined than under the action alternatives.

Under Alternative A, management associated with NNIS, wildland fire, and recreation would continue to impact vegetation in various ways. NNIS, including noxious weeds, would continue to be managed under State and federal laws and policy, which would continue to limit their impact on vegetation communities and SSS flora. Wildland fire and fuels treatments, when they occur, would adversely impact vegetation in the local area over the short term but would also benefit vegetation over a larger area in the long term by reducing the potential spread of wildland fires and supporting maintenance of appropriate vegetation community seral stages. Recreation in the planning area has the potential to impact vegetation via trampling by recreators in any vegetated area.

Effects Common to All Action Alternatives

Under all action alternatives, existing vegetation would be retained as much as possible when implementing proposed actions, and disturbed or burned areas would be restored or reclaimed as closely as possible to previous conditions. These requirements would minimize impacts to vegetation communities from these actions or events. Avoidance of ROW authorization in tundra areas; requirements for preservation of tundra mats, vegetative mats, and topsoil for use in reclamation; and specific reclamation cover requirements would reduce long-term impacts to vegetation in disturbed areas. Using existing roads and trails where feasible would minimize direct loss of vegetation from construction of new roads and trails. Avoiding the use of heavy equipment and overland travel in snow-free months, avoiding creation of new roads and trails in wetlands and floodplains, and minimization of disturbance to riparian communities would minimize the adverse effects of these actions on vegetation. Actions to reduce impacts to permafrost areas under all action alternatives would simultaneously reduce impacts to vegetation. Conservation and maintenance of areas near NWRs and connectivity corridors would minimize impacts to vegetation in these areas. Implementation of a monitoring plan for vegetation, including rare ecosystems, would minimize impacts to vegetation by identifying areas appropriate for rapid reclamation response actions in degraded areas. Prioritization of reclamation and mitigation in

riparian zones, lichen-rich habitat, SSS flora habitat (including BLM sensitive plant species habitat or rare ecosystems), HVWs, and areas with potential for permafrost degradation would reduce impacts from actions in these areas.

As under Alternative A, NNIS, including noxious weeds, would continue to be managed under State and federal laws and policy; therefore, adverse impacts of these species on vegetation and SSS flora would continue to be minimized. Additional NNIS control and eradication measures common to all action alternatives would further minimize the establishment and spread of NNIS infestations. These measures would generally benefit vegetation communities and habitat for SSS flora by providing more stringent NNIS management than measures under Alternative A. Requirements to minimize impacts to vegetation from the effects of commercial woodland harvest action include seasonal restrictions (e.g., requiring timber harvest to occur during the winter), surveys for sensitive species (including SSS flora) for surface-disturbing harvest actions, and reclamation of disturbed areas. This action would minimize impacts to vegetation and SSS flora associated with woodland harvest compared to Alternative A. Impacts of recreation and visitor services management and wildland fire management under all action alternatives would be the same as under Alternative A.

Effects from Alternative B

This alternative would have the fewest areas open to surface-disturbing activities including OHV use, woodland harvest, mineral development, and livestock grazing under all the alternatives and would therefore result in the least potential for impacts to vegetation and SSS flora (Table 3.2.6-2). ROW exclusion in permafrost areas and restrictions of surface-disturbing activities within 100-year floodplains and within 100 feet of natural springs would eliminate potential removal or damage of vegetation due to surface-disturbing activities in these areas. The 300-foot avoidance buffers for SSS flora habitat would minimize impacts to SSS flora and other vegetation in these areas from the effects of long-term surface-disturbing actions. VRM designations (Class I or Class II) and managing wilderness characteristics as a priority under Alternative B would minimize impacts to vegetation associated with surface-disturbing actions. Management for woodland harvesting would including more limitations under this alternative, which would limit associated removal of and damage to vegetation. Livestock grazing would not be authorized in the planning area, which would eliminate all grazing-related impacts to vegetation and/or SSS flora. Leasing subject to standard stipulations would be permitted on fewer acres than Alternative A, C, or D, which would reduce potential removal of vegetation associated with this type of action compared to other alternatives. Alternative B would also allow new ROW authorization over the smallest acreage and therefore minimize impacts to the greatest extent of vegetation and SSS flora. The greatest extents of OHV use limitations would be implemented under this alternative, thereby allowing some minimization of impacts to vegetation from removal or crushing due to OHV use. The greatest extent of ACECs would be designated under Alternative B; as such, vegetation would benefit the most under this alternative from associated management of ACEC resources. Designation of the INHT NTMC would provide the greatest extent and degree of benefit to vegetation in the trail corridor by closing this area to commercial woodland harvest, minerals exploration, and ROW actions.

Management of surface-disturbing mineral actions (extraction of salable minerals or locatable minerals in high or medium potential areas), commercial woodland harvest, ROW authorization, and OHV use could adversely impact vegetation due to authorization of actions that could remove or damage plants. These actions could be authorized on various acreages in the planning area under Alternative B (Table 3.2.6-2). The amount of land that could be subject to these actions is smaller than under the other action

alternatives and generally smaller than under Alternative A; therefore, Alternative B is the least detrimental to vegetation resources in the planning area.

Coordinating with USFWS to sustain and strengthen landscape-level ecosystem resiliency through managing connectivity of neighboring NWRs would also benefit vegetation in these areas. Requirements for use of native and ecologically adapted species (i.e., species that are well-suited to the ecological conditions of an area) for reclamation are likely to reduce impacts to vegetation (in terms of changes to community composition and function) from surface-disturbing activities or fire in reclaimed or restored areas. Minimization of impacts to wildlife habitat (discussed in Section 3.2.7) would simultaneously minimize impacts to vegetation that composes wildlife habitat.

Effects from Alternative C

Management of surface-disturbing activities including commercial woodland harvest, ROW authorization, mineral development, and OHV use could adversely impact vegetation due to authorization of actions that could remove or damage individual plants. These actions could be authorized on various lands in the planning area under Alternative C (Table 3.2.6-2). Overall, areas open to these types of surface-disturbing activities would be greater under Alternative C than Alternative B. Generally, Alternative C would have fewer acres open to surface-disturbing activities that could affect vegetation than Alternative A, apart from locatable mineral development. Livestock grazing would be permitted in areas determined to have ecological conditions that support grazing (outside of caribou habitat protection areas), which would result in some impacts to vegetation due to forage utilization, trampling, transportation of plant propagules, and soil disturbance. Ecological conditions that support grazing include areas with at least 20 percent lichen cover based on vegetation classes from the REAs. Forage utilization would be managed at a maximum threshold of Grazing Class 4 (50–75 percent of lichen utilized), which could result in visible reductions in lichen cover, although not enough to inhibit regeneration (Swanson and Barker 1992). Impacts to vegetation due to grazing under this alternative would be greater than under Alternative B. Comprehensive Grazing Management Plans or Range Conservation Plans required to be developed and submitted with permit applications would specify practices and mitigations to minimize impacts to vegetation.

There would be fewer restrictions to surface-disturbing mineral actions, OHV use, and woodland harvest that would minimize impacts to vegetation and SSS flora than under Alternative B (Table 3.2.6-2). Additionally, minimization of impacts to vegetation and SSS flora as a result of reducing or eliminating disturbance in permafrost areas, floodplains and natural springs, SSS flora habitat, visual resources, wilderness characteristics, and the INHT NTMC would be less extensive and/or less stringent than under Alternative B. No ACECs would be designated under this alternative; therefore, impacts to vegetation would not be minimized due to associated management of ACEC as they would be under Alternative B. As such, potential impacts to vegetation and SSS flora would be higher under Alternative C than under Alternative B, but still lower than under Alternative A.

As described under Alternative B, coordinating with the USFWS to sustain and strengthen landscape-level ecosystem resiliency would generally benefit vegetation, although measures to minimize impacts to wildlife habitat would be less extensive and therefore would minimize impacts to vegetation to a lesser degree than under Alternative B. The allowed use of nonnative seed and propagules where native species are not available or unable to establish could result in changes to vegetation community composition and function as compared to pre-disturbance or pre-fire conditions.

Effects from Alternative D

Management of surface-disturbing actions including commercial woodland harvest, ROW authorization, mineral development, and OHV use could adversely impact vegetation due to authorization of actions that could remove or damage individual plants. These actions could be authorized on various lands in the planning area under Alternative D (Table 3.2.6-2). Overall, management under Alternative D would minimize impacts to vegetation to a lesser degree than under Alternative B or C but would still minimize impacts slightly more than under Alternative A. Grazing effects would be similar to those described for Alternative C, though grazing could be permitted on a case-by-case basis over the entire planning area. Forage utilization would be managed at a maximum threshold of Grazing Class 5 (75–100 percent of lichen utilized), which could result in visible trampling, craters, and reductions in lichen cover, though not enough to inhibit regeneration (Swanson and Barker 1992). Overall, impacts to vegetation under this alternative would be greater than under all other action alternatives.

Restrictions to surface-disturbing mineral actions, OHV use, woodland harvest, and livestock grazing that would benefit vegetation and SSS flora would occur to a smaller extent than under Alternative B or C (Table 3.2.6-2). Additionally, minimization of impacts to vegetation and SSS flora as a result of reducing or eliminating disturbance in permafrost areas, floodplains and natural springs, SSS flora habitat, visual resources, wilderness characteristics, and the INHT NTMC would occur to a lesser extent and/or be less stringent than under Alternative B or C. As under Alternative C, no ACECs would be designated and lands would be managed to prioritize other resource values and multiple uses over wilderness characteristics under this alternative; therefore, vegetation would not benefit from associated management of ACEC or wilderness resources. Additionally, no measures to address OHV-related degradation of SSS flora or lichen areas would be required under this alternative. Potential impacts to vegetation and SSS flora would be higher under Alternative D than under Alternative B or C, but still lower than under Alternative A in some cases.

As described for Alternative B, coordinating with the USFWS to sustain and strengthen landscape-level ecosystem resiliency would generally benefit vegetation, although measures to minimize impacts to wildlife habitat would be less extensive and less beneficial to vegetation than under all other action alternatives, but still slightly more beneficial than under Alternative A. Requirements that propagules used in reclamation be suited to existing climatic condition and ecosystem function would benefit disturbed areas, though reclamation could result in changes to vegetation community composition and function as compared to pre-disturbance or pre-fire conditions.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Vegetation communities in the planning area are maintaining proper functioning condition. Trends for special status plant species are unknown. **Trend: No Change.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Due to continued adherence to State and federal regulations, such as requirements for project-specific NEPA analysis, impacts to SSS flora and vegetation communities are likely to be limited, though impacts are still likely to occur due to increasing resource use in the planning area. Construction and operation of the Donlin Gold Project would be expected to increase impacts to vegetation and SSS flora in the planning area, within the footprint of the Donlin Gold Project transportation corridor and mine site. The

Donlin Gold Project construction and operation would result in removal of vegetation for access and operations infrastructure and could impact habitat that supports SSS. **Trend: Counter the existing trend by resulting in increased impacts to vegetation and SSS flora over time.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternatives B, C, and D)

Continued adherence to State and federal regulations, as well as restrictions to the extents of surface-disturbing actions, would reduce impacts to vegetation and SSS flora species and habitats, though minimal impacts to vegetation and SSS flora are still likely to occur. **Trend: Counter the existing trend by resulting in increased impacts to vegetation and SSS flora over time, though impacts would be lowest under Alternative B, highest under Alternative D, and intermediate under Alternative C.**

3.2.7 Wildlife and Special Status Species

Affected Environment

Appendix M provides lists of amphibian, mammal, and bird species in the planning area. Species that are the focus of monitoring and management include game and subsistence species and SSS. Habitats of high value to wildlife are also an important management concern.

Game Management and Subsistence Species

Important game management and subsistence species include caribou (*Rangifer tarandus*), moose (*Alces alces*), wood bison (*Bison bison athabascae*), muskox (*Ovibos moschatus*), brown bear (*Ursus arctos*), black bear (*Ursus americanus*), plains bison (*Bison bison bison*), furbearers, marine mammals, and waterfowl. The planning area includes winter and summer ranges and migratory habitat for two major caribou herds (Map 3.2.7-4). Moose occur predominantly in lower elevations, along major rivers and recently burned areas where they forage on early successional trees and shrubs (Map 3.2.7-5). Wood bison and plains bison occur as two closely related subspecies that have been introduced into the planning area (Map 3.2.7-6). Muskox occur in the southern Nulato Hills, between Shaktoolik and Unalakleet. Brown bear and black bear are found throughout the planning area. Furbearers include a variety of species that occupy various habitats. Marine mammals occur adjacent to coastal portions of the planning area. Numerous species of waterfowl occur in association with lowlands, rivers and floodplains, coastal areas, and other aquatic habitats.

Special Status Species

One BLM sensitive mammal species occurs in the planning area: the Alaska hare, which is found in western Alaska and the Seward Peninsula in open and upland tundra areas (ADF&G 1994). The wood bison is ESA-listed as threatened; however, the reintroduced population in the planning area is a nonessential experimental population.

Migratory birds occupy every habitat type within the planning area, including riparian areas, wetland, forest, shrub, and alpine tundra. Bird species of concern are listed in Appendix M. These species have small populations or ranges, or declining populations, depend on habitats susceptible to human disturbance or development, or are considered worthy of more intensive monitoring.

High-value Wildlife Habitats

Current and nominated ACECs in the planning area provide important wildlife habitats for a variety of breeding and nesting birds and game/subsistence species. The Western Alaska and Northwest Interior Forest Bird Conservation regions (USGS 2016) overlap the boundaries of the planning area, as do three Audubon Important Bird Areas (Audubon 2016). The Innoko Bottoms area in the floodplains of the Yukon and Innoko Rivers is an important waterfowl production area of statewide importance, supports known winter concentrations of moose, and provides important connectivity corridors between the Innoko and Yukon Delta NWRs.

Direct and Indirect Effects

Table 3.2.7-1 summarizes the nature and types of beneficial or adverse effects that could occur to wildlife and SSS, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. The table focuses on resource uses with the greatest potential to impact wildlife and SSS. Table 3.2.7-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives. The effects analysis focuses on important wildlife and SSS habitats for which information is available (moose and caribou calving and wintering areas, wood bison and muskox range, riparian areas, the Innoko Bottoms area, proposed connectivity corridors, and Audubon Important Bird Areas) and on areas where land uses with the greatest potential to impact wildlife (mineral development, ROW, commercial forest harvest) have the least restrictions and are likely to occur.

Table 3.2.7-1: Summary of Effects to Wildlife by Management Action

Types of Effects	Management Actions	Indicators
OHV use, surface disturbance, commercial woodland harvest, and other human actions associated with various resource uses could impact wildlife and SSS through disturbance, loss, degradation, and fragmentation of wildlife habitat. Management actions that prohibit or limit these human actions would reduce the potential for adverse effects by removing the human actions or reducing their magnitude and extent.	• Mineral Decisions • Commercial Woodland Harvest • ROW Decisions • Travel and Transportation Management Decisions	• Acres of the planning area in which there are no restrictions on mineral development, commercial woodland harvest, ROW, and OHV use. • Acres of the planning area in which there are no restrictions on mineral development, commercial woodland harvest, ROW, and OHV use, that overlap riparian areas; caribou, moose, wood bison, and muskox ranges; Audubon Important Bird Areas; and Innoko Bottoms.
Changes in the effectiveness of wildlife habitat management could result in a reduction or improvement of wildlife habitat quality on BLM lands by removing or adding management actions that target key wildlife habitats.	• Wildlife Management Decisions	• Acres of the planning area covered by management that targets key wildlife habitat: connectivity corridors, Innoko Bottoms, riparian areas, caribou and moose calving and wintering areas, moose and caribou crucial winter habitat

Potential impacts to wildlife and SSS include disturbance, displacement, mortality, or injury of individuals; alteration, elimination, or fragmentation of habitat; reduction in availability of food and water; interference with breeding; reduction in reproductive success; and increased susceptibility to predation, among other possible impact mechanisms. Activities that involve surface disturbance could alter the structure, composition, and productivity of vegetation communities, which provide the foundation of wildlife habitats. Development actions could lead to new roads with the potential to fragment wildlife habitat and impede migration and other types of movement. Removal of forest and woodland products could modify habitats of forest-dwelling species by reducing the components of

wildlife physical habitat and food sources. OHV use could degrade wildlife habitats through surface disturbance, crush nests and small terrestrial species, and lead to the creation of new trails that could cause an increase in human use. ROW development could lead to habitat loss, degradation, and fragmentation through vegetation removal over long linear areas. Domestic livestock (reindeer) grazing could result in removal of lichen and biomass of other plants, trampling, transportation of plant propagules, and soil disturbance. Management actions for wildlife and other resources and resource uses could affect wildlife by allowing resource uses with the potential to cause impacts, or by implementing restrictions on those resource uses that prevent or reduce impacts.

The alternatives would vary in terms of the indicators shown in Table 3.2.7-2: the number of connectivity corridors that the BLM would manage to maintain movement between two NWRs; the timing, extent, and magnitude of allowable mineral activities, ROW, commercial woodland harvest, and other resource uses in important wildlife habitats; and the extent and magnitude of additional management for wildlife and SSS. Additional differences among the alternatives are discussed in Chapter 2 of this Draft RMP/EIS.

Table 3.2.7-2: Summary of Impacts to Wildlife and SSS by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres of the planning area in which there are no restrictions on mineral development that overlap important wildlife habitat.[1]	• Open to locatable mineral development (high and medium potential): 294,325 acres (2%) • Riparian areas: 609 RMs (2%) • Caribou calving habitat: 0 acres (0%) • Caribou wintering habitat: 14,001 acres (<1%) • Moose calving habitat: 0 acres (0%) • Moose wintering habitat: 294,325 acres (33 percent) • Innoko Bottoms: 0 acres (0%) • Important Bird Areas: 0 acres (0%) • Muskox range: 0 acres (0%) • Wood bison range: 8,402 acres (<1%)	• Open to locatable mineral development (high and medium potential): 202,610 acres (2%) • Riparian areas: 409 RMs (1%) • Caribou calving habitat: 0 acres (0%) • Caribou wintering habitat: 133,467 acres (1%) • Moose calving habitat: 5,414 acres (1%) • Moose wintering habitat: 8,213 (1%) • Innoko Bottoms: 0 acres (0%) • Important Bird Areas: 0 acres (0%) • Muskox range: 0 acres (0%) • Wood bison range: 4,639 acres (<1%)	• Open to locatable mineral development (high and medium potential): 565,489 acres (4%) • Riparian areas: 1,173 RMs (4%) • Caribou calving habitat: 0 acres (0%) • Caribou wintering habitat: 403,146 acres (4%) • Moose calving habitat: 5,529 (1%) • Moose wintering habitat: 16,404 (2%) • Innoko Bottoms: 0 acres (0%) • Important Bird Areas: 0 acres (0%) • Muskox range: 0 acres (0%) • Wood bison range: 9,672 acres (<1%)	• Open to locatable mineral development (high and medium potential): 565,489 acres (4%) • Riparian areas: 1,173 RMs (4%) • Caribou calving habitat: 0 acres (0%) • Caribou wintering habitat: 403,146 (4%) • Moose calving habitat: 5,529 (1%) • Moose wintering habitat: 16,404 (2%) • Innoko Bottoms: 0 acres (0%) • Important Bird Areas: 0 acres (0%) • Muskox range: 0 acres (0%) • Wood bison range: 9,672 acres (<1%)

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Areas open to commercial woodland harvest that overlap important wildlife habitat.[1]	• Commercial woodland harvest: 1,644,588 acres (12%) • Riparian areas: 3,000 RMs (9%) • Caribou calving habitat: 160,096 acres (100%) • Caribou wintering habitat: 1,644,569 (16%) • Moose calving habitat: 0 acres (0%) • Moose wintering habitat: 0 acres (0%) • Innoko Bottoms: 0 acres (0%) • Important Bird Areas: 0 acres (0%) • Muskox range: 1,576,325 acres (48%) • Wood bison range: 0 acres (0%)	• Commercial woodland harvest: 5,017,161 acres (37%) • Riparian areas: 8,534 RMs (26%) • Caribou calving habitat: 152,078 acres (95%) • Caribou wintering habitat: 5,821,005 acres (54%) • Moose calving habitat: 283,561 acres (74%) • Moose wintering habitat: 438,198 (49%) • Innoko Bottoms: 202,988 acres (86%) • Important Bird Areas: 272,578 acres (86%) • Muskox range: 1,047,863 acres (31%) • Wood bison range: 2,882,497 acres (61%)	• Commercial woodland harvest: 9,811,727 acres (73%) • Riparian areas: 16,122 RMs (49%) • Caribou calving habitat: 158,602 (99%) • Caribou wintering habitat: 6,516,009 acres (67%) • Moose calving habitat: 325,506 acres (85%) • Moose wintering habitat: 549,375 acres (61%) • Innoko Bottoms: 209,795 acres (89%) • Important Bird Areas: 276,474 acres (87%) • Muskox range: 1,428,102 acres (43%) • Wood bison range: 2,995,404 acres (81%)	• Commercial woodland harvest: 13,423,449 (>99%) • Riparian areas: 32,850 RMs (100%) • Caribou calving habitat: 160,069 acres (100%) • Caribou wintering habitat: 9,752,211 acres (95%) • Moose calving habitat: 374,631 acres (98%) • Moose wintering habitat: 88,640 acres (99%) • Innoko Bottoms: 236,556 acres (100%) • Important Bird Areas: 314,373 acres (100%) • Muskox range: 3,269,799 acres (99 percent) • Wood bison range: 3,686,168 acres (>99%)
Areas open to ROW that overlap important wildlife habitat.[1]	• ROW (on a case-by-case basis): 13,465,894 (100%) • Riparian areas: 32,932 RMs (100%) • Caribou calving habitat: 160,096 acres (100%) • Caribou wintering habitat: 10,251,780 acres (100%) • Moose calving habitat: 380,799 acres (100%) • Moose wintering habitat: 894,809 acres (100%) • Innoko Bottoms: 236,556 acres (100%) • Important Bird Areas: 314,373 acres (100%) • Muskox range: 3,295,578 acres (100%) • Wood bison range: 3,693,676 acres (100%)	• ROW: 3,106,134 acres (23%) • Riparian areas: 0 RMs (0%) • Caribou calving habitat: 84,657 acres (53%) • Caribou wintering habitat: 2,173,376 acres (21%) • Moose calving habitat: 48,746 acres (13%) • Moose wintering habitat: 93,264 acres (10%) • Innoko Bottoms: 0 acres (0%) • Important Bird Areas: 44,074 acres (14%) • Muskox range: 843,052 acres (26%) • Wood bison range: 736,928 acres (20%)	• ROW: 5,785,508 acres (43%) • Riparian areas: 0 RMs (0%) • Caribou calving habitat: 112,609 acres (70%) • Caribou wintering habitat: 4,182,673 acres (41%) • Moose calving habitat: 107,684 acres (28%) • Moose wintering habitat: 216,665 acres (24%) • Innoko Bottoms: 0 acres (0%) • Important Bird Areas: 87,447 acres (28%) • Muskox range: 1,361,245 acres (41%) • Wood bison range: 1,231,414 acres (33%)	• ROW: 8,201,597 acres (61%) • Riparian areas: 19,151 RMs (58%) • Caribou calving habitat: 150,380 acres (94%) • Caribou wintering habitat: 5,924,308 (58%) • Moose calving habitat: 130,740 acres (34%) • Moose wintering habitat: 282,198 acres (60%) • Innoko Bottoms: 0 acres (0%) • Important Bird Areas: 97,014 acres (31%) • Muskox range: 1,988,298 acres (60%) • Wood bison range: 2,011,664 acres (54%)
Area open to OHV use that overlap important wildlife habitat.[1]	OHV use: 13,465,894 (100%)	OHV use: 0 acres (0%), with TMAs over 565,955 (4%) and additional prohibitions and restrictions	OHV use: 0 acres (0%), with TMAs over 273,242 acres (2%) and fewer land use restrictions than Alternative B	OHV use: 0 acres (0%), with TMAs over 273,242 acres (2%) and fewer land use restrictions than Alternatives B and C
Acres of the planning area covered by management actions that target key wildlife habitat (type of management varies by alternative).[2]	None specified	• Riparian areas: 32,932 RMs (17%) • Caribou and moose calving and wintering habitat: 10,251,780 acres (76%) • Innoko Bottoms: 236,556 acres (2%) • Connectivity Corridors: two corridors: 845,670 acres (6%)	• Riparian areas: 32,932 RMs (17%) • Caribou and moose calving habitat: 540,896 acres (4%) • Innoko Bottoms: 236,556 acres (2%) • Connectivity corridors: one corridor: 576,038 acres (4%)	• Riparian areas: 32,932 RMs (17%) • Innoko Bottoms: 236,556 acres (2%)

Notes:
1) Percentages listed for the total area with no restrictions are the percent of BLM-managed lands in the planning area. Percentages listed for important habitat types are the percent of the total amount of that habitat type on BLM-managed lands in the planning area.
2) Percentages listed are the percent of BLM-managed lands in the planning area.

Effects from Alternative A

Under Alternative A, the BLM would continue to follow all laws, regulations, and policies, which predominantly pertain to listed species, sensitive species, rare habitats, subsistence resources, and migratory birds. Actions to prevent or mitigate for adverse effects would generally be reactive and tied to specific projects or permits, and there would be no adaptive management to respond to climate change effects on wildlife habitats, no consideration of wildlife movements through the establishment of connectivity corridors, and no management to minimize impacts to HVW habitat in the Innoko Bottoms area from land uses with the potential to impact wildlife. Therefore, this alternative could have a long-term impact on migration and other species movement across the landscape if future development occurs in areas where it could fragment species ranges and reduce habitat connectivity. However, the proposed connectivity corridors under Alternatives B and C occur in areas that do not have medium or high LMP, so future development could have a low impact on migration under this alternative even without the corridors. This alternative would have no restrictions on where ROW could be developed or where OHV use could occur, and nearly all of the planning area (99%) would be open to livestock grazing, which could lead to habitat degradation and fragmentation and interfere with wildlife movement throughout the planning area, including in important habitats such as riparian areas, caribou and moose calving and wintering areas, and habitats used by muskox and wood bison. This alternative would have the smallest portion of the planning area open to commercial woodland harvest with respect to areas open to commercial harvest by permit, although it does allow commercial woodland harvest on 76 percent of the planning area by permit on a case-by-case basis (Table 2-1b). Alternative A could result in less short- or long-term habitat loss and degradation for forest-dwelling wildlife and SSS than the other alternatives. Overall, Alternative A, as compared to the action alternatives, would lead to a greater extent and magnitude of impacts to wildlife and SSS for all indicators except 1) areas open to commercial woodland harvest that overlap important wildlife habitat, and 2) areas open to locatable mineral development in areas of high and medium potential that overlap important wildlife habitat. For both indicators, affected acres would be greater under Alternatives C and D.

Effects Common to All Action Alternatives

All action alternatives would include management considerations that focus on ESA-listed species, BLM sensitive species, caribou, moose, muskox, Dall sheep, mountain goats, migratory birds, raptors, bats, wood bison, and pollinators. Additionally, the BLM would use adaptive management that considers climate change and shifts in habitat or timing of crucial portions of species' life cycles. The BLM would also implement numerous BMPs/SOPs (Appendix K) designed to avoid and minimize impacts to sensitive species and habitats, including buffer requirements, design features, seasonal restrictions, aircraft height restrictions, and location restrictions for activities with the potential to impact species and habitats of management concern from habitat loss, degradation, and fragmentation; noise and human disturbance; spread of diseases; and direct harm of individuals.

Effects from Alternative B

Compared to other action alternatives, management actions under Alternative B would result in the least impacts to wildlife and SSS and would target important species and habitats in the planning area. Management for other resources, as described throughout this chapter, could also minimize the potential for impacts to wildlife from resource uses in the planning area, as compared to the other alternatives. Management actions pertaining to locatable mineral entry, surface-disturbing BLM-permitted activities, OHV use, ROW development (ROW exclusion areas), and others would apply to wildlife and SSS in the Innoko Bottoms Priority Wildlife Habitat Area and two proposed connectivity corridors (North Connectivity Corridor and South Connectivity Corridor—see Map 3.2.7-3), which would reduce disturbance to wildlife and SSS and reduce the potential for habitat loss, degradation, and fragmentation. Additionally, no BLM-managed lands in the planning area would be open to livestock grazing. Creating two connectivity corridors between the Innoko and Yukon Delta NWRs would allow for landscape connectivity at multiple locations. As shown in Table 3.2.7-2, management actions under Alternative B would result in reduced impacts over a greater or similar extent of all important wildlife habitats analyzed, compared to the other alternatives. This alternative would generally have the least extent of overlap between areas in the planning area in which there are no restrictions on locatable mineral development (in areas of medium and high mineral potential) and ROW and important wildlife habitat and would limit OHV use to the greatest extent. Overall, the extent and magnitude of impacts to wildlife and SSS, including impacts to important wildlife habitats, from resource uses would be lower than under Alternatives A, C, and D.

Effects from Alternative C

Under Alternative C, potential impacts on wildlife and SSS from management actions would be of higher magnitude and greater extent than those under Alternative B, as reflected by the indicators in Table 3.2.7-2. There would be fewer management prescriptions to minimize impacts in the Innoko Bottoms Priority Wildlife Habitat Area than under Alternative B, which could result in greater impacts to wildlife and SSS from disturbance, habitat loss, and fragmentation from resource uses. Management actions for connectivity corridors under Alternative C would be similar to those under Alternative B, with the exception of ROW (ROW avoidance for linear realty actions rather than exclusion), locatable mineral development (which would be allowed under Alternative C), and salable mineral development (which would be allowed on a case-by-case basis under Alternative C). Grazing would result in some impacts to vegetation due to forage utilization, trampling, transportation of plant propagules, and soil disturbance. Additionally, the BLM would manage one connectivity corridor, the South Connectivity Corridor, rather than the two proposed under Alternative B. This alternative would maintain the same long-term benefits to wildlife movement in the Innoko Bottoms area as Alternative B but would potentially result in greater impacts to wildlife in the area identified as the North Connectivity Corridor, which intersects the range of the Western Arctic Caribou Herd. Because neither proposed connectivity corridor under Alternative B occurs in an area of medium or high LMP, the probability of future development in key movement areas could be low and having only one corridor under Alternative C, which would allow locatable mineral development, would not have a sizable difference on wildlife movement and habitat connectivity. As shown in Table 3.2.7-2, management actions under Alternative C could have a greater extent of impacts on important wildlife habitats analyzed than Alternative B, but generally to a lesser extent than Alternatives A and D. Important wildlife habitats would have more overlap with areas where there are no restrictions on locatable mineral development (in medium and high potential areas) and ROW than

Alternatives A and B, indicating a higher likelihood for associated impacts to wildlife in these areas, but a similar amount of overlap as Alternative D. Potential impacts from OHV use would be of a greater extent and magnitude than those under Alternative B, a similar extent but lesser magnitude than Alternative D, and a lesser extent and magnitude than Alternative A. Overall, the extent and magnitude of impacts to wildlife and SSS, including important wildlife habitats, from resource uses would be greater than under Alternative B but lower than under Alternatives A and D.

Effects from Alternative D

The geographic extent of impacts on wildlife for most resource uses would be greater under Alternative D than under Alternatives B and C and smaller than under Alternative A, as reflected in Table 3.2.7-2. Similar to Alternative A, the BLM would not manage connectivity corridors, but because the connectivity corridors proposed under Alternatives B and C occur in areas that do not have medium or high LMP, future mineral development would have a low impact on wildlife movement under this alternative even without the corridors. Grazing management would allow greater utilization over a larger geographic area than under Alternative C, potentially resulting in greater impacts to wildlife and SSS habitats. Management actions under Alternative D would result in potential impacts over a greater extent of important wildlife habitats analyzed, compared to Alternatives B and C, but over a lesser extent than Alternative A, which could lead to higher likelihood of impacts to certain species and groups, such as migratory birds and wintering caribou and moose. The amount of overlap of important wildlife habitats with areas where there are no restrictions on locatable mineral development (in medium and high potential areas) would be the same as Alternative C, but there would be more overlap with areas open to ROW development than Alternatives B and C, indicating a higher risk for associated impacts to wildlife in these areas. Potential impacts from OHV use would be of a similar extent but lesser magnitude than those under Alternative C. Overall, the extent and magnitude of potential impacts to wildlife and SSS, including impacts to important wildlife habitats, from resource uses would be greater than under Alternatives B and C, but less than under Alternative A. However, in some locations and for some species (e.g., forest and woodland species), the extent and magnitude of impacts would be similar to those under Alternative C and similar to or greater than those for Alternative A.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Wildlife populations appear to be fluctuating within what is likely a natural range but are variable by species. Both the Western Arctic and the Mulchatna Caribou herds are in decline. The other small non-migratory herds near the Kuskokwim River are stable or declining. Some species populations appear stable, such as Alaskan hare and many furbearers. Some populations could be increasing, such as plains bison, brown bear, black bear, and peregrine falcon. Other populations could be decreasing, such as muskox, Dall sheep, olive-sided flycatcher, and other migratory birds. For some species, such as lynx, red fox, and little brown bat, current trends are not known. Migratory bird species appear to be experiencing declines associated with impacts on winter ranges or migration routes outside of Alaska. **Trend: No change overall for habitat but degrading for some species and improving for others.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Reasonably foreseeable future actions with the greatest potential to affect wildlife and SSS, based on likelihood of occurrence or predicted increases from current levels, include the Donlin Gold Project, other mineral exploration and mining activity, and development of transportation corridors. While reasonably foreseeable future actions generally would have localized impacts on wildlife and SSS habitats, climate change would continue to alter habitats throughout the planning area, and cumulative impacts to certain populations or species could occur if key habitats are degraded or fragmented. Under this alternative, adherence to existing regulations and internal BLM guidance should continue to help prevent impacts to sensitive species and habitats. **Trend: Existing trends would continue, with no trend overall, but degrading for some species and improving for others. With increased development in the planning area, species with affected habitat could experience a trend of increased degradation or lessened improvement.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Management under Alternative B would include BMPs/SOPs and additional prescriptions that would minimize impacts to wildlife and SSS and habitats. Management specifically designed to prevent cumulative impacts to wildlife and SSS, including cumulative management decisions, adaptive management, and establishment of two connectivity corridors, would help offset landscape-level impacts to wildlife habitats. **Trend: Improving. It is expected that implementing Alternative B would result in an improved trend for most wildlife and SSS. For species with habitat or populations that are degrading, this alternative would lessen the rate of degradation or stabilize or counter the existing trend. For species with habitat or populations that are improving, this alternative would allow the improvement to continue at a similar or greater rate.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

Management under Alternative C would include BMPs/SOPs and additional prescriptions to minimize impacts to wildlife and SSS and habitats, but to a lesser degree than under Alternative B. More decisions would be on a case-by-case basis than under Alternative B. Management specifically designed to prevent cumulative impacts to wildlife and SSS, including cumulative management decisions, adaptive management, and establishment of one connectivity corridor, would help offset landscape-level impacts to wildlife habitats. **Trend: Varies between species. It is expected that implementing Alternative C would result in an improved trend for most wildlife and SSS. For species with habitat or populations that are degrading, the degradation could continue but at a lesser rate and could be stabilized. For forest and woodland species and species in areas of medium to high mineral development potential, there could be a trend of increased degradation or lessened improvement. For species with habitat or populations that are improving, this alternative would allow the improvement to continue at a similar or greater rate.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

Management under Alternative D would include BMPs/SOPs and additional prescriptions to minimize impacts to wildlife and SSS and habitats, but to a lesser degree than under Alternative B and for most resources to a lesser degree than Alternative C. Many decisions would be made on a case-by-case basis. Alternative D would include cumulative management decisions and adaptive management, but no connectivity corridors. In most cases, management would be somewhat more restrictive than under

Alternative A. However, Alternative D would allow more unmanaged commercial woodland harvest and mineral development that would have the potential to impact forest and woodland-dwelling wildlife, and wildlife occurring in areas of medium to high mineral potential, to a greater degree than Alternative A. **Trend: Varies between species, stable or declining. For forest and woodland species and species in areas of medium to high mineral development potential, trends could degrade as a result of the cumulative effects of future development, climate change, and fragmentation of habitats. These species would experience a trend of increased degradation or lessened improvement.**

3.2.8 Nonnative Invasive Species (Wildlife and Plant)

Affected Environment

Nonnative Invasive Terrestrial Plant Species

There are 50 nonnative invasive terrestrial plant species representing 15 families with 758 total occurrences within the planning area, with risk rankings from 32 to 81 as described in more detail in Appendix M. Map 3.2.8-1 illustrates locations and numbers of known nonnative invasive terrestrial plant species in the region based on 2016 Alaska Exotic Plants Information Clearinghouse data. At all known locations, between one and 16 species were recorded. Areas with greater concentrations of species could be sources of potential invasion into neighboring areas and could be target areas for focused control or eradication efforts. Highest concentrations of species are found in developed areas including villages, roadways, boat landings, airstrips, and trails.

Nonnative Invasive Aquatic Species

Fourteen nonnative invasive fish species have been identified as occurring in Alaska, including Atlantic salmon (*Salmo salar*) and yellow perch (*Perca flavescens*) (McClory and Gotthardt 2008). None of the listed fish species is known to have established breeding populations in Alaska. Only one nonnative invasive freshwater plant genus, elodea or waterweed (*Elodea canadensis, E. nuttallii*, and hybrids), is known within the state of Alaska. These species could survive in habitats within the planning area, although elodea is not currently known to occur within the planning area. Only one nonnative invasive marine species, the seasquirt *(Didemnum vexillum*), is known to occur within the state of Alaska near Sitka.

Nonnative Invasive Mammal Species

Alaska currently has few nonnative invasive mammal species that have spread to the point of causing major ecological effects, except on the Aleutian Islands (ADF&G 2015). Norway rats (*Rattus norvegicus*) are a nonnative invasive terrestrial mammal species that has colonized numerous cities and islands in Alaska, including Dutch Harbor, Nome, and Fairbanks (ADF&G 2015). Rats have not persisted or established known colonies in any coastal communities or the Port of Bethel within the planning area. Under Alaska law (5 AAC 92.141), it is illegal for any property owner or vessel operator to knowingly transport Muridae rodents (including Norway rats) into Alaska, and it is the responsibility of the property or vessel owner to develop and implement ongoing rodent control and eradication plans if any such rodents are discovered.

Other Nonnative Invasive Species

Nonnative invasive bird and invertebrate species have been detected in Alaska but are not known within the planning area (ADF&G 2015). Nonnative invasive insect species are forest pests tracked by the Alaska Forest Health Protection Program of ADF&G, in cooperation with the U.S. Forest Service, including the introduced birch leaf miner (*Fenusa pusilla*). Birch defoliation has been detected within the planning area in aerial insect and disease detection surveys (USDA Forest Service 2015), which could indicate presence of the nonnative invasive birch leaf miner but could also be attributed to native insects such as aphids (superfamily *Aphidoidea*). Currently, no serious nonnative invasive pathogens are known to occur in Alaska.

Direct and Indirect Effects

Table 3.2.8-1 below summarizes the nature and types of beneficial or adverse effects that could occur to NNIS, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.2.8-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives.

Table 3.2.8-1: Summary of Effects to NNIS Resource by Management Action

Types of Effects	Management Actions	Indicators
Management actions that would result in vegetation removal or soil disturbance have the potential to increase colonization and spread of nonnative invasive plants where propagules of these species are present. Removal of native vegetation reduces competition for sunlight, water, and soil resources (Hobbs and Huennekke 1992). Soil disturbance could also increase nutrient availability due to complex effects of disturbance on soil microbial activity (van der Heijden et al. 2008). Increased resource availability leads to increased invisibility of an ecosystem by nonnative invasive plants (Davis et al. 2000; Hobbs and Huennekke 1992), including cold environments such as those in the planning area (Lembrechts et al. 2016).	• Forestry and Woodland Product Decisions • Wildland Fire Decisions • Livestock Grazing Decisions • Mineral Decisions • Lands and Realty Decisions • Recreation and Visitor Services Decisions • Travel and Transportation Decisions	• Acres open to commercial woodland harvest • Acres open to personal/subsistence use harvest • Potential for increased nonnative invasive terrestrial plant species with fire and fuels treatments and firefighting actions (qualitative) • Acres open to livestock grazing • Acres open to locatable, salable, and leasable minerals • Acres open to ROW authorization • Acres without OHV use restrictions
Management actions that would increase human movement could increase the transportation of nonnative invasive plants and animals, facilitating colonization and spread of these species. Nonnative invasive plant propagules (predominantly seeds, but also other plant organs or parts such as spores, buds, or stem fragments that can propagate a new plant) could be transported to new areas by being attached to clothing, pets, livestock, or vehicles (including aircraft). Nonnative invasive aquatic plant and animal species are frequently inadvertently transported in the ballast water of boats and ships (National Research Council 1996) and intentionally as live fish bait, horticultural and water-garden plants, biological supplies, pets, and as live food (Keller and Lodge 2007).	• Forestry and Woodland Product Decisions • Livestock Grazing Decisions • Mineral Decisions • Recreation and Visitor Services Decisions • Travel and Transportation Decisions	• Acres open to commercial woodland harvest • Acres open to personal/subsistence woodland harvest • Acres open to livestock grazing • Acres open to locatable, salable, and leasable minerals • Acres open to OHV use • Potential increased invasive terrestrial plant species with other travel, transportation, and recreation uses (qualitative)

Table 3.2.8-2: Summary of Impacts to NNIS by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Open to commercial woodland harvest[1]	1,644,588 acres (12%)	5,017,161 acres permitted (37%)	9,811,727 acres (73%)	13,423,449 acres (>99%)
Open to commercial woodland harvest on a case-by-case basis[1]	10,237,555 acres (76%)	29,829 (<1%)	3,607,214 (27%)	42,445 acres (<1%)

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Open to personal/subsistence woodland harvest[1]	13,465,894 acres (100%)	• 13,465,894 acres (100%) – permit required • Non-subsistence house log harvest prohibited: 9,332,481 acres (69%)	• 13,423,449 acres (>99%) • Non-subsistence house log harvest prohibited: 3,044,073 acres (23%)	13,465,894 acres (100%)
Open to livestock grazing on a case-by-case basis[1]	13,304,555 acres (99%)	0 acres (0%)	7,742,975 (58%)	13,465,894 acres (100%)
Areas open to locatable mineral development in areas identified to have medium to high LMP in the planning area[2]	• 258,015 acres of medium LMP (2%) • 36,310 acres of high LMP (<1%)	• 185,578 acres of medium LMP (1%) • 17,032 acres of high LMP (<1%)	• 522,825 acres of medium LMP (4%) • 42,663 acres of high LMP (<1%)	• 522,825 acres of medium LMP (4%) • 42,663 acres of high LMP (<1%)
Open to salable minerals[1]	8,661,406 acres (64%)	3,623,397 acres (27%)	6,645,750 acres (49%)	13,182,385 acres (98%)
Open to salable minerals on a case-by-case basis[1]	0 acres (0%)	0 acres (0%)	6,536,635 acres (49%)	0 acres (0%)
Open to mineral leasing subject to standard stipulations[1]	8,246,152 acres (61%)	2,517,414 acres (19%)	6,594,906 acres (49%)	13,182,385 acres (98%)
Open to ROW location[1]	0 acres (0%)	3,176,977 acres (24%)	5,820,362 acres (43%)	8,234,323 acres (61%)
Open to ROW on case-by-case basis[1]	13,465,894 acres (100%)	0 acres (0%)	0 acres (0%)	100,644 acres (1%)
Summer casual OHV access prohibited[1]	46,953 acres (<1%)	565,955 acres (4%)	225,925 acres (2%)	225,925 acres (2%)
Summer subsistence OHV access prohibited[1]	46,953 acres (<1%)	241,512 acres (2%)	225,925 acres (2%)	0 acres (0%)
Summer casual OHV access limited to existing trails[1]	0 acres (0%)	12,899,939 acres (96%)	13,239,969 acres (98%)	46,953 acres (<1%)
Summer subsistence OHV access limited to existing trails[1]	0 acres (0%)	324,443 acres (2%)	363 acres (<1%)	225,925 acres (2%)

Notes:
1) Percentage based on all BLM-managed land in the planning area.
2) Percentage based on all medium to high LMP areas on BLM-managed land in the planning area.

Effects from Alternative A

Management of commercial woodland harvest, livestock grazing, locatable and salable mineral entry, leasable mineral actions, ROW authorization, and OHV use are likely to continue facilitating colonization and spread of NNIS due to actions that would increase surface disturbance and transportation of these species. These actions could be authorized on various lands in the planning area (Table 3.2.8-2). In general, extents of land that could be subject to these actions are identified less precisely than under the action alternatives. OHV use could theoretically occur anywhere in the planning area, though it would more likely be restricted to commonly used travel, subsistence, and recreation routes.

Control of NNIS would continue to be required under applicable federal, State, county, and municipal regulations. BLM-issued permits for certain types of activities are likely to require some degree of control of nonnative plant species, though these requirements are not specifically described under current plans.

No specific limitations on development in floodplains would be implemented; therefore, these actions would have a greater potential to result in NNIS transportation or invasion than under the action alternatives. Measures intended to minimize the impacts of woodland harvest on vegetation under current land use plans would minimize the potential for increased nonnative plant establishment and spread in ACECs and RNAs. Wildland fire and fuels treatments (including prescribed fire), when they occur, could

increase the potential for nonnative invasive plant invasion in the local area over the short term, though these impacts would be minimized through implementation of avoidance and mitigation measures. Livestock grazing would adhere to the State of Alaska requirement that a Grazing Management Plan be submitted prior to grazing on State lands, which would include an assessment of invasive plants as an indicator of loss of biotic integrity, potentially minimizing NNIS spread as a result of livestock grazing. Revegetation of areas disturbed by minerals actions could occur but would not be required under this alternative; as a result, colonization and spread of NNIS in these areas is likely to be greater than under the action alternatives. As there would be no specific management actions pertaining to recreation applicable to the effects of recreation on spread of NNIS, potential transport of NNIS could occur throughout the planning area wherever recreation occurs.

Effects Common to All Action Alternatives

Potential establishment and spread of nonnative invasive plants would be minimized under the action alternatives as compared to Alternative A. All actions implemented or authorized by the BLM in the planning area would include measures to prevent the introduction and spread of NNIS, such as requiring projects to develop NNIS management plans based on the type of work to be performed and to adhere to NNIS BMPs from the BLM Alaska NNIS Management Policy. SOPs and BMPs listed in Appendix K would be followed that would minimize the transportation of nonnative invasive plant propagules via machinery and other materials (i.e., seed, mulch, and erosion control). SOPs and BMPs would also require planning, inventory, treatment, and monitoring to prevent the introduction of highly invasive species for all permitted actions.

Requirements that commercial woodland harvest occur during the winter and requiring reclamation of disturbed areas would minimize potential establishment and spread of nonnative plants. For livestock grazing, requirements for use of weed-free feed would help to minimize establishment and spread of nonnative invasive plants due to grazing. Areas where surface disturbance could occur, such as those open to locatable or salable mineral exploration, location, development, and extraction; mineral leasing; or ROW development are likely to be subject to nonnative invasive plant establishment and spread. Reclamation of vegetation in areas subject to soil disturbance would minimize some of the potential establishment and spread of nonnative invasive plants in these areas. Requirements for reclamation in surface disturbance areas, including preservation of tundra mats, vegetative mats, and topsoil for use in reclamation and specific reclamation cover requirements would generally minimize potential for establishment and spread of nonnative invasive plants. While there could be increased use of recreation areas under the action alternatives, the proposed restrictions to OHV use would allow the BLM to reduce the impacts that recreation could have on NNIS establishment and spread. Aircraft and watercraft use for subsistence purposes would be unrestricted under the action alternatives; therefore, the potential for transport of NNIS via these mechanisms is the same under all action alternatives.

Effects from Alternative B

Alternative B would authorize the smallest acreage of land as open for surface-disturbing actions or removal or damage of vegetation (commercial woodland harvest, livestock grazing, locatable and salable mineral entry, and ROW authorization) under the action alternatives. The acreage of these authorizations would be smaller than under Alternative A, with the exception of commercial woodland harvest, which would be authorized over a larger area. However, Alternative A would have a larger area where commercial woodland harvest would be permitted on a case-by-case basis. As such, Alternative B could have fewer potential impacts to NNIS from commercial woodland harvest, depending on the number of

permits granted on a case-by-case basis under Alternative A. Compared to all other alternatives, Alternative B would open the least amount of land to OHV overland travel and locatable mineral development in areas of high and medium LMP (Table 3.2.8-2). The overall potential for NNIS colonization and spread associated with surface-disturbing actions or removal or damage of vegetation would be lower under Alternative B than under all other alternatives.

Under Alternative B, requirements for use of native and ecologically adapted species for reclamation are likely to increase the long-term ecological stability of reclamation actions, thereby minimizing the potential spread of nonnative invasive plants to a greater degree than under Alternative A.

Effects from Alternative C

Under Alternative C, a larger acreage of lands would be designated as being available for surface-disturbing actions or removal or damage of vegetation (i.e., commercial woodland harvest, livestock grazing, locatable and salable mineral entry, leasable mineral actions, ROW authorization, OHV overland travel) compared to Alternative B (Table 3.2.8-2). For livestock grazing, requirements for use of weed-free feed would help to minimize establishment and spread of nonnative invasive plants due to grazing. Acreage available for surface-disturbing actions or removal or damage of vegetation would be higher than Alternative A for commercial woodland harvest, locatable mineral development, and salable mineral development (when including areas open case-by-case) but lower for ROW development (when considering areas open case-by-case under Alternative A) and OHV overland travel (Table 3.2.8-2). Under Alternative C, the overall potential for NNIS colonization and spread associated with surface-disturbing actions or removal or damage of vegetation would be higher than under Alternative B and lower than under Alternative D. Although Alternative C would have more areas open to certain activities that could increase the spread of NNIS than Alternative A, it would also include additional prevention measures that would not be required under Alternative A. Requirements to use native and ecologically adapted species for reclamation would be similar to that under Alternative B, though some nonnative seed and propagules would be allowed if necessary. Allowing nonnative species to be used in reclamation of disturbed areas could have implications for the potential for spread of nonnative invasive plants in these areas, though the outcomes are uncertain.

Effects from Alternative D

Under Alternative D, a larger acreage of land would be designated as being available for surface-disturbing actions or removal or damage of vegetation (commercial woodland harvest, livestock grazing, locatable and salable mineral entry, and leasable mineral actions) than under all other alternatives (Table 3.2.8-2). Restrictions for OHV use would be less extensive than under Alternatives B and C, though OHV use restrictions would be more extensive than under Alternative A. Alternative D would have more areas open for ROW development than Alternative B and C, but fewer than Alternative A when considering areas open case by case. All areas of medium and high locatable mineral potential would be open to locatable mineral development, the same as Alternative C. Under Alternative D, the overall potential for NNIS colonization and spread associated with surface-disturbing actions or removal or damage of vegetation would be higher than under Alternatives B and C, but lower than under Alternative A due to more extensive OHV restrictions and reclamation requirements.

Requirements for reclamation would be similar to those under Alternative C, though native species would not be given preference in reclamation areas, thereby increasing the potential for spread of nonnative invasive plants.

Cumulative Effects

Cumulative adverse effects from potential increase of NNIS invasion and spread under the action alternatives would generally be less and beneficial effects greater under Alternative A than under Alternatives B, C, and D because of restrictions on surface-disturbing actions and OHV use. The degree of adverse impact or beneficial effect from controlling NNIS is related to the relative levels of measures intended to minimize impacts under the various action alternatives.

Trends and Forecasts: Past and Present Actions

NNIS infestations are low in the planning area but are anticipated to increase over time due to human activity and the effects of climate change. Construction and operation of the Donlin Gold Project could increase impacts from introduction and spread of NNIS within the planning area, within the footprint of the Donlin Gold mine transportation corridor and mine site, if BMPs and mitigation measures are not followed. The Donlin Gold Project construction and operation would result in an increase of equipment, vehicles, materials, travel, and access routes that could contribute to a trend of increasing the presence of NNIS within the planning area. **Trend: Degrading.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

NNIS infestations are likely to increase in the planning area over time, even with continued implementation of State and federal regulations. **Trend: Stabilize the existing trend.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternatives B, C, and D)

Continued adherence to State and federal regulations as well as restrictions to the extents of surface-disturbing actions and requirements for revegetation of disturbed areas and control of NNIS would minimize establishment and spread of these species. **Trend: Counter the existing trend (slightly improving), though Alternative B would minimize NNIS establishment and spread to the greatest degree, Alternative D would minimize NNIS establishment and spread to the lowest degree, and Alternative C would minimize NNIS establishment and spread to an intermediate degree.**

3.2.9 Wildland Fire

Affected Environment

Wildland fires are ignited predominantly by lightning. Human-caused wildland fires are ignited by campfires, burning debris, vehicles, and other ignition sources. Wildland fires are rare within 100 miles of the coast and increase toward the interior (BLM 2015e). Fire data on large wildland fires reported by BLM show that a total of 8,875,141 acres burned from 1977 to 2016 within the planning area. The number of burned acres has continued to exceed 2 million acres for each 10-year period from 1990 through 2010 (BLM 2016d). Approximately 61 percent of the planning area is in Fire Regime Groups III, IV, and V (NIFIT 2010). The rest of the planning area is classified as unburnable surface material (14 percent) and areas where the fire regime has not been determined (25 percent) (Barrett et al. 2010).

Fuels include vegetation ranging from boreal hardwood and conifer forests to shrub and sedge dominated tundra. Of 40 fuel models, 20 are represented in the planning area (Scott and Burgan 2005). The 20 models include grasses, shrubs, timber, and unburnable vegetation (Map 3.2.9-3). Black spruce forests,

which are adapted to fire, are the most common forest type and form mosaics with quaking aspen-birch, white spruce, and mixed wood (spruce-hardwood) stands. The major shrub fuel component is birch, willow, or ericaceous (acid soil) shrub communities. The major grass fuel models are grass-sedge tundra communities.

Spruce beetle (*Dendroctonus rufipennis*) infestations were documented in the late 1990s and early 2000s, and impacted forest cover primarily in the Kenai Peninsula (ADNR 2018b; USDA Forest Service 2018). Current and prior outbreaks have been attributed to warming winters that allow the species to overwinter, increasing population size. Infestations can change fuel types and contribute to increased large woody debris accumulation. However, there is little evidence that dead or diseased trees have greatly increased the intensity, size, or duration of wildland fires in the planning area. Minimal restrictions on hazardous fuels treatments and prescribed fires are currently in place in the planning area, although there have been few hazardous fuels treatments and no prescribed fires other than pile burning. BLM uses an integrated vegetation management approach to meeting hazardous fuels management objectives and improving vegetative health. Management actions could include hazardous fuels removal, prescribed fire, mechanical manipulation (e.g., mowing), applying herbicides, seeding, and biological treatments to reduce fuels or create fuel breaks. Vegetative health is improved by enhancing species diversity and sustainability. Treatments are strategically placed to support suppression operations and minimize impacts to human communities and important resource values (BLM 2014b).

Post-wildland fire, ES&R management includes planned actions to minimize threats to life and property and stabilize and prevent unacceptable degradation of natural and cultural resources (BLM 2007b). Treatments could include installing erosion control structures, removing hazardous trees, replacing burned or damaged values, and implementing soil stabilization treatments such as seeding, planting, mulching, trail stabilization, invasive plant and weed control, and use closures. See Appendix M for more details.

Smoke is managed in consultation with the ADEC. Wildland fire smoke is not regulated but considered in control tactics. Prescribed fire smoke is addressed in burn plans, which are developed in consultation with the ADEC and the Alaska Enhanced Smoke Management Plan, which was written and adopted by the Alaska Wildland Fire Coordinating Group (2015). Prescribed burns are planned to be implemented when atmospheric conditions are favorable to smoke dispersion.

Fire prevention involves agencies, partners with the BLM, affected groups, and individuals working together to prevent unauthorized ignition of wildland fires. The primary goal is to reduce human-caused fires through education. Prevention education efforts are challenged by the remoteness of communities. Prevention education is provided in conjunction with local fire crew training, Community Wildland Fire Protection Plans, and FireWise planning, and by organized workshops and conferences in larger communities.

Direct and Indirect Effects

Table 3.2.9-1 summarizes the nature and types of beneficial or adverse effects on wildland fire, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.2.9-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives.

Table 3.2.9-1: Summary of Effects to Wildland Fire by Management Action

Types of Effects	Management Actions	Indicators
Fuels treatments would be used to alter vegetation to facilitate fire management to help meet desired conditions for land cover or in areas prioritized for wildland fire management (i.e., generalized moose habitat, generalized caribou habitat, white spruce on well-drained floodplains, generalized BLM-sensitive plant species habitat, herbaceous wetlands, and areas with known or high probability of cultural and/or paleontological resources). In the long term, fuels treatments could reduce the potential risk and intensity of wildland fires within treated vegetation communities. Vegetation treatments could impact fuel model acres and related fire behavior, although the levels of impacts would depend on the condition of the larger landscape and the total area treated.	• Wildland Fire Management Decisions • Vegetation Management Decisions • Cultural Resources Management Decisions • Paleontological Management Decisions	Areas where treatments are prioritized
Potential restrictions on fire and fuels treatments associated with streambank and riparian areas and habitat buffers, seasonal restrictions for SSS and sensitive wildlife habitat areas, use of Minimum Impact Suppression Techniques (MISTs), and BMPs/SOPs that stipulate the use of aerial fire retardant near lakes, wetlands, streams, rivers, sources of human water consumption, and areas adjacent to water sources could limit size, timing, and location of fuels treatments on a site-specific basis. Depending on treatment location, these restrictions could diminish the effectiveness of fire as a management tool. For all actions restricting the fuels treatments described above, potential exists for long-term changes to fuel models and fire behavior and related changes to burned acres. Impacts would depend on the level of restrictions and the current fuel models impacted.	• Wildland Fire Management Decisions • Water Resources and Fisheries Decisions • Wildlife Management Decisions • Woodland Harvest Management Decisions	• Areas/acreages of treatment restrictions • Potential changes to extent and severity of wildland fires • Potential for changes to fuel model acres and fire behavior, including burn severity
Areas open to public land use including, but not limited to, ROW corridors, areas open to forest product harvest, and recreation areas could be at greater risk for human-caused fires due to increased human presence, transport of chemicals or fuel, and use of vehicles and equipment. Proposed SRMAs would increase the potential for human-caused fires by encouraging visitation. Increases in motorized use could increase potential for human-caused fires. Requiring compliance with terms and conditions of BLM permits could reduce impacts from public use by imposing regulations of exhaust systems or other BMPs to reduce ignition potential.	• Woodland Harvest Management Decisions • Lands and Realty Management Decisions • Recreation and Visitor Services Management Decisions • Transportation and Travel Management Decisions	Potential for human-caused fire

Table 3.2.9-2: Summary of Impacts to Wildland Fire Resource by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Fire and fuels treatment areas would be prioritized to avoid and minimize impacts to resources or prevent divergence from natural variability in land cover composition.	None specified	• Generalized moose habitat • Generalized caribou habitat • White spruce on well-drained floodplains • Generalized BLM sensitive plant species habitat • Herbaceous wetlands • Areas with known or high probability of cultural resources or paleontological resources • BSWI Communities	Areas with known or high probability of cultural resources or paleontological resources	Areas with known or high probability of cultural resources or paleontological resources

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Areas/acreages of treatment restrictions	• Cultural resources • Paleontological resources • SSS habitat • VRM Class I areas (along Unalakleet River): 46,953 acres (<1%)	• Cultural resources • Paleontological resources • SSS habitat (300-foot buffer) • VRM Class I areas: 1,335,771 acres (10%) • VRM Class II areas: 6,490,087 acres (48%) • Lands managed for wilderness characteristics as a priority: 277,489 acres (2%) • Within 100 feet of 100-year floodplains • Migratory bird and raptor habitat	• Cultural resources • Paleontological resources • SSS habitat (100-foot buffer) • VRM Class I areas: 46,953 acres (<1%) • VRM Class II areas: 2,766,229 acres (21%) • Within 100 feet of 100-year floodplains • Migratory bird and raptor habitat	• Cultural resources • Paleontological resources • SSS habitat (flexible implementation) • VRM Class I areas: 46,953 acres (<1%) • VRM Class II areas: 679,553 acres (5%) • Within 100 feet of 100-year floodplains • Migratory birds and raptors (flexible implementation)
Requiring various measures to avoid and minimize impacts to other resources could increase suppression time and result in increased fire size and/or severity.	Requirements: • BMPs for NNIS control	Requirements: • BMPs for NNIS control • MISTs • BMPs/SOPs for water quality	Same as Alternative B.	Same as Alternative B.
Closing areas to commercial timber harvest could decrease associated potential for fine fuel loading and subsequent changes to fire behavior, including severity.	Commercial timber harvest would be closed on 1,583,751 acres (12%)	Commercial timber harvest would be closed on 8,418,904 acres (63%)	Commercial timber harvest would be closed to 46,953 acres (<1%)	No areas would be closed to commercial woodland harvest.

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Project actions and human use in areas would increase risk of human-caused wildland fire ignition.	Limited management would occur in recreation areas, travel management, ROW development, and WSRs. Human activity in the planning area would occur in association with: • Locatable mineral development open on 294,325 acres of medium or high LMP (52%)[1] • OHV use restriction areas: ○ Summer casual and subsistence OHV cross-country access allowed: 13,418,941 acres (>99%)[2]	Human activity in the planning area would occur in association with: • Recreation areas • ROW exclusion areas: 1,464,069 acres (11%)[2] • ROW avoidance areas: 8,824,848 acres (66%)[2] • Locatable mineral development withdrawn on 202,610 acres of medium or high LMP (36%)[1] • OHV use restriction areas: ○ Summer casual OHV access cross-country access allowed: 0 acres (0%)[2] ○ Summer subsistence OHV cross-country access allowed: 12,899,939 acres (96%)[2] ○ Summer casual OHV access limited to existing trails: 12,899,939 acres (96%)[2] ○ Summer subsistence OHV access limited to existing trails: 324,443 acres (2%)[2]	Human activity in the planning area would occur in association with: • ROW avoidance areas: 7,069,494 acres (52%)[2] • Locatable mineral development open on 565,489 acres in medium or high LMP (100%) • OHV use restriction areas: ○ Summer casual cross-country OHV access allowed: 0 acres (0%)[2] ○ Summer subsistence cross-country OHV access allowed: 13,239,606 acres (98%)[2] ○ Summer casual ohv access limited to existing trails: 13,239,969 acres (98%)[2] ○ Summer subsistence OHV access limited to existing trails: 363 acres (<1%)[2]	Human activity in the planning area would occur in association with: • ROW avoidance areas: 5,130,927 acres (38%)[2] • Locatable mineral development withdrawn on 565,489 acres in medium or high LMP (100%) • OHV use restriction areas: ○ Summer casual cross-country OHV access allowed: 13,193,016 acres (98%)[2] ○ Summer subsistence cross-country OHV access allowed: 13,239,969 acres (98%)[2] ○ Summer casual OHV access limited to existing trails: 46,953 acres (<1%)[2] ○ Summer subsistence OHV access limited to existing trails: 225,925 acres (2%)[2]

Notes:
1) Percentage is based on all medium and high LMP areas on BLM-managed land in the planning area.
2) Percentage is based on all BLM-managed lands in the planning area (13,465,894 acres).

Effects from Alternative A

Under Alternative A, minimal restrictions would be in place for hazardous fuels treatments, although some site-specific limitations could apply for cultural and paleontological resources and SSS. As a result, treatments could occur across much of the planning area with the potential to alter acres burned, fuel model, and fire behavior. Hazardous fuels treatments have been used in the planning area on a limited basis, and if this trend continues, impacts could be limited at the planning area scale.

Management actions that would require BMPs for NNIS control could increase suppression time and result in increased fire severity.

Minimal management of resource uses and development would result in the potential for human-caused ignition throughout much of the planning area. Because there are no ROW exclusion or avoidance areas under Alternative A, human-caused ignitions could occur across the planning area. While the development of locatable and salable minerals would be withdrawn in some areas (Table 3.2.9-2), the remaining areas would be open to development and could be susceptible to human-caused ignitions associated with development activities. Minimal travel management restrictions would support higher potential for human-caused ignition across the planning area.

Management actions that influence the existing vegetation community through removal or by changing composition could influence fuel model and fire behavior. Restricting commercial timber harvest (Table 3.2.9-2) could increase fine fuel loads, changing fire behavior and burn severity.

Effects Common to All Action Alternatives

Use of MISTs and inclusion of BMPS/SOPs to minimize impacts to water from aerial fire retardant could limit suppression effectiveness and result in increased acres burned and/or higher severity fires. Hazardous fuels treatments have been used in the planning area on a limited basis, and restrictions on treatments could therefore result in limited changes to acres burned, fuel model, and fire behavior at the planning area scale. Prioritizing fuels and vegetation management projects in areas with known or high probability of cultural resources or paleontological resources that are at risk of damage from wildland fire would impact suppression priorities and location of fuels treatments.

Effects from Alternative B

Compared with the other action alternatives, fewer acres would be available for fuels treatments under Alternative B. Limitations on fuel treatments could occur from VRM actions on designated VRM Class I or II areas (Table 3.2.9-2). Limitations on fuel treatments could also occur on lands managed for wilderness characteristics as a priority (Table 3.2.9-2). Limitations could also apply for site-specific cultural and paleontological resources and to minimize impacts to water resources. Areas open to fuels treatments could also be subject to limitations for special status wildlife species (300-foot buffers around habitat). Timing limitations on management in migratory bird and raptor habitat would also reduce the areas available for fuels treatments as compared to Alternative A. In addition to BMPs included in Appendix K for NNIS control, MISTs and BMPS/SOPs for water quality could limit suppression options and result in increased fire size and/or severity.

Under Alternative B, management actions for Lands and Realty, Recreation and Visitor Services, Travel and Transportation, and Locatable and Salable Minerals (Table 3.2.9-2) that decrease human activity in certain areas could decrease the potential for human-caused ignitions. Restricting commercial woodland harvest (Table 3.2.9-2) would decrease timber harvest and associated potential for fine fuel loading and changes to fire behavior.

Effects from Alternative C

Under Alternative C, limitations on fuel treatments could occur in association with VRM Class I and II designation, management of cultural and paleontological resources, and avoidance and minimization of impacts to water resources and special status wildlife species habitat (Table 3.2.9-2). As under Alternative B, timing limitations in migratory bird and raptor habitat would also limit areas available for fuels treatments compared to Alternative A. Limitations on fuels treatments would be less restrictive than under Alternative B but more restrictive than under Alternative D. The potential for human-caused ignitions would be greater than under Alternative B, as due to more areas would be open to locatable mineral development and salable mineral extraction, ROW development (Table 2-1b), and OHV use (Table 3.2.9-2), though these impacts would be less than under Alternative A with the exception of impacts associated with locatable mineral development.

Management impacting the extent and severity of potential wildland fires would be the same as under Alternative B. Restricting commercial woodland harvest would decrease timber harvest and associated

potential for fine fuel loading and changes to fire behavior, though these restrictions would be less extensive than under Alternatives A and B (Table 3.2.9-2).

Effects from Alternative D

Under Alternative D, limitations on fuel treatments could occur in association with VRM Class I and II designation, as well as site-specific restrictions for the management of cultural and paleontological resources and water resources (Table 3.2.9-2). Areas open to fuels treatments could also be subject to timing limitations for special status wildlife species, although management would have more flexible implementation than other action alternatives. Similarly, timing limitations for migratory bird and raptor habitat would have flexibility in implementation. Overall, restrictions on areas available for fuel treatments would be less than under Alternatives B and C, but still slightly greater than under Alternative A.

Compared to other action alternatives, more areas would be open for resource uses, such as mineral development, ROW avoidance, and commercial woodland harvest (Table 3.2.9-2), and potential for human-caused ignition would therefore be the highest of all alternatives. Management impacting the extent and severity of potential wildland fires would be the same as under Alternative B. No restrictions on commercial woodland harvest would occur, thereby increasing the potential for fine fuel loading and associated changes to fire behavior.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Vegetation conditions are expected to continue to be impacted by human-caused changes on a limited, site-specific basis with a trend of increasing fire risk. Few BLM hazardous fuels treatment projects, and no prescribed fires, have been implemented in the planning area. Future treatments are expected to continue to be limited and site specific. Predicted vegetation and fire regime responses to projected future climate change include a general increase in fire activity in response to projected warming temperatures and less available moisture. Wildland fire management decisions cross agency and administrative boundaries. Fuel could accumulate in areas adjacent to BLM lands that are in the full and critical fire management options (i.e., areas where fires are actively suppressed), resulting in the potential for large, high-severity fire associated with fire exclusion. **Trend: Fire risk continues to increase.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Resource uses and community development would continue as described in Appendix N. Reasonably foreseeable future actions would represent increased suppression priorities and potential for human-caused fires at the planning area level, as well as implementation of fire management measures for projects such as the Donlin Gold Project. **Trend: Fire risk continues to increase**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (All Action Alternatives)

Resource uses and community development would continue as described in Appendix N. Reasonably foreseeable future actions would represent increased suppression priorities and potential for human-caused fires at the planning area level. Under all action alternatives, site-specific reductions in cumulative contributions to fire risk could occur from reduction in human uses. However, in consideration of the

projected changes to fire activity due to climate change, these site-specific reductions would not counter the projected changes. **Trend: Fire risk continues to increase**.

3.2.10 Cultural Resources

Affected Environment

Many types of cultural resources, including prehistoric and historic resources, ethnographic sites, and traditional use areas, are found throughout the planning area. Each of the major prehistoric archaeological traditions is represented, though Paleoindian sites are rare. More prehistoric sites date to the Northern Archaic era and earlier, as evidenced by surface or shallowly buried lithic scatters, campsites, resource procurement areas (e.g., hunting grounds), and larger pithouse villages. Prehistoric, protohistoric, and ethnographic sites attributed to activity by the three major tribes in the region (Yup'ik, Inupiat, and Athabaskan) are represented in the archaeological record. Sites dating to the historic era are widespread and associated with themes related to Russian exploration and expansion; the Gold Rush, World War II, and Cold War eras; government exploration; and commercial fishing. A detailed cultural chronology with references is provided in Appendix M. While none is currently identified, TCPs, cultural landscapes, and sites of religious or sacred significance are likely to occur across the planning area.

While there are nearly 2,000 sites identified within the planning area boundaries, over 90 percent of the area remains unsurveyed. Known site distribution is primarily influenced by areas where archaeological research has actually been conducted. Sites to date have typically been identified in more accessible areas, such as coastal and riverine environments. Prehistoric sites are often located on or near streams, rivers, lakes, or coastal shorelines. Historic sites are also typically in similar locales, though mining sites occur where minerals were identified.

There are 81 known cultural resources sites on BLM-managed lands (see Appendix M for more detail). However, over 900 sites within the planning area have no landowner listed on their site card in the Alaska Heritage Resource Survey, and additional sites list "U.S. Government" as the owner; some of these sites could also be located on BLM-managed public lands. Sites on BLM lands are primarily from the historic era and related to the Gold Rush and the history of the INHT.

For the purposes of this analysis, it is assumed that there is potential for cultural resources to exist across the entire planning area. The analysis does not consider impacts on specific cultural resources and does not attempt to quantify these resources in particular geographic areas.

Direct and Indirect Effects

Table 3.2.10-1 below summarizes the nature and types of beneficial or adverse effects that could occur to cultural resources, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.2.10-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives.

Table 3.2.10-1: Summary of Effects to Cultural Resources by Management Action

Types of Effects	Management Actions	Indicators
Cultural resource sites could be destroyed or permanently damaged by actions that involve surface-disturbing activity.	• Locatable, Salable, and Leasable Mineral Decisions • Lands and Realty Decisions • Recreation and Visitor Services Management Decisions • Hazardous Material Cleanup Decisions	• Acres of high or medium potential open to mineral extraction • Acres of ROW exclusion and avoidance • Areas subject to recreation decisions regarding access, number of people, and facility development (qualitative) • Summer OHV access limited to existing trails • Areas subject to hazardous material cleanup
Actions that limit or restrict surface-disturbing activity that could destroy cultural resource sites, or actions that limit the potential for new audible, atmospheric, or visual elements to be introduced into the landscape that would indirectly affect cultural resource sites would have positive and beneficial impacts on cultural resource. An increase in acreage considered for cultural resource survey and cultural landscape analysis would lead to increased number of sites identified and would allow for the consideration of impacts on newly discovered sites.	• Wildfire Management Decisions • Cultural Resource Management Decisions • Visual Resource Management Decisions • Travel and Transportation Management Decisions • Protected Land Status Designations (Lands with Wilderness Characteristics Managed as a Priority, ACECs, National Trails, WSRs) • Lands and Realty Decisions • Support for BSWI Communities	• Areas subject to cultural resource evaluation prior to fuels reduction actions and acres near known cultural resources targeted for fire prevention actions (qualitative) • Areas identified for cultural resource survey; number of sites designated for scientific use (qualitative) • Acres established with VRM Class I and II designations • Lands managed for wilderness characteristics as a priority • Acres of ACECs (see Appendix J for full list of management actions) • Acres of WSR • Increase in areas subject to cultural landscapes analysis (qualitative) • Acres of INHT NTMC

Table 3.2.10-2: Summary of Impacts to Cultural Resources by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Lands with high or medium LMP open to locatable mineral development	294,325 acres (52%)[1]	202,610 acres (36%)[1]	565,489 acres (100%)[1]	565,489 acres (100%)[1]
Areas open to ROW location	No acres specified	3,176,977 acres (24%)[1]	5,820,362 acres (43%)[1]	8,234,323 acres (61%)[2]
Areas subject to recreation decisions that increase access, number of people, and development of support facilities (qualitative)	Impacts remain low due to lack of recreation facilities or plans to develop such facilities in this alternative.	Recreation use in the INHT SRMA (355,799 acres) would be managed to achieve identified outcome and experience, thereby maintaining setting characteristics and minimizing potential for damage to cultural resources associated with the INHT. Managing the CFZs to promote subsistence use within a 15-mile radius of communities would limit use and potential for inadvertent harm of cultural sites near communities.	Same as Alternative B, but the SRMA would be reduced to 340,574 acres and the CFZ would be reduced to a 5-mile radius surrounding BSWI communities.	Beneficial impacts within the SRMA would be the same as Alternative C. There would be no CFZ applied around BSWI communities.

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Areas subject to pre-disturbance cultural survey for wildland fire fuels reduction (qualitative)	Management actions involve prioritizing areas with known cultural resources for fire suppression and conducting cultural resource surveys prior to these actions. This equates to additional acres surveyed for cultural resources and more sites identified for protection, which minimizes the destruction and damage of cultural resources.	Same as Alternative A	Same as Alternative A	Same as Alternative A
Areas identified for additional cultural resource survey (qualitative)	Requires compliance with Section 106 and other BMPs to avoid and minimize impacts on cultural resources.	High-priority areas for cultural sites would be identified, more sites would be identified and designated for scientific use, and impacts from wildland fire actions would be avoided or minimized. More sites and acres would be surveyed proactively than under Alternative A.	Same as Alternative B	Same as Alternative B
Lands managed as VRM Class I	46,953 acres (<1%)[1]	1,335,771 acres (10%)[1]	46,953 acres (<1%)[1]	46,953 acres (<1%)[1]
Other VRM Classes (inclusive of Flat buffer)	0 acres (0%), and no direction for the 15-mile buffer around Flat, and no VRM classifications in ACECs	6,490,087 acres (48%)[1] as VRM Class II, including 15-mile buffer around Flat; increase in VRM Class II designations in ACECs	2,766,229 acres (21%)[1] of VRM Class II overall, Class III designations for 15-mile buffer around Flat	679,553 acres (5%)[1] overall VRM Class II, with VRM Class IV designation for 15-mile buffer around Flat. Overall, 49%[1] VRM Class IV designation
Lands managed for wilderness characteristics as a priority	No acres specified	277,489 acres (2%)[1]	0 acres (0%)[1]	0 acres (0%)[1]
Lands managed as ACECs	1,884,376 acres (14%)[1]	3,912,698 acres (29%)[1]	0 acres (0%)[1]	0 acres (0%)[1]
WSR acres eligible, suitable, or designated	• Designated: 46,953 acres (<1%)[1] • Eligible: 332,176 acres (2%)	• Designated: 46,953 acres (<1%)[1] • Recommended Suitable: 332,176 acres (2%)	Designated: 46,953 acres (<1%)[1]	Designated: 46,953 acres (<1%)[1]
INHT NTMC acres designated	NTMC not designated	288,466 acres (2%)[1]	273,242 acres (2%)[1]	273,242 acres (2%)[1]
ROW exclusion areas	No acres specified	1,464,069 acres (11%)[1]	0 acres (0%)[1]	0 acres (0%)[1]
ROW avoidance areas	No acres specified	8,824,848 acres (66%)[1]	7,069,494 acres (52%)[1]	5,130,927 acres (38%)[1]
ROW avoidance areas for linear realty actions	No acres specified	0 acres (0%)	576,038 acres (4%)[1]	0 acres (0%)
Summer casual OHV access prohibited	46,953 acres (<1)	565,955 acres (4%)[1]	225,925 acres (2%)[1]	225,925 acres (2%)[1]
Summer subsistence OHV access prohibited	46,953 acres (<1)	241,512 acres (2%)[1]	225,925 acres (2%)[1]	0 acres (0%)[1]
Summer casual OHV access limited to existing trails	No acres specified	12,899,939 acres (96%)[1]	13,239,969 acres (98%)[1]	46,953 acres (<1%)[1]
Summer subsistence OHV access limited to existing trails	No acres specified	324,443 acres (2%)[1]	363 acres (0%)[1]	225,925 acres (2%)[1]

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Areas subject to cultural landscape analysis (qualitative)	No management action for assisting with cultural tourism. Cultural landscape reports include an objective to protect and preserve cultural resources from damage or destruction, but number of reports and areas subject to analysis not defined.	Two or three communities would be targeted for the completion of cultural landscape reports. This would increase number of acres surveyed and sites identified, promote heritage values, and result in a broader understanding of site types and significance within these communities than Alternative A. BLM would support cultural tourism.	Four to six communities would be targeted for landscape reports, which have greater benefits to cultural resources in terms of acreages surveyed and sites identified than Alternatives A or B. Cultural tourism assistance is the same as Alternative B.	The entire planning area would be reviewed for potential cultural landscape analysis, which is a greater geographic extent than the other alternatives and has the potential for planning area-wide impacts. Cultural tourism would still be supported under this alternative, but to a slightly lesser extent than Alternatives B and C, as BSWI communities would initiate requests, which is less proactive than the community support in Alternatives B and C.

Note:
1) Acreages are approximate. Percentages refer to BLM-managed lands in the planning area.

Effects from Alternative A

Under Alternative A, land status classifications that limit surface-disturbing activity would avoid and minimize impacts to cultural resources in certain areas. Cultural resources in areas of VRM Class I designations, lands managed for wilderness characteristics as a priority, ACECs, WSRs, and within the INHT NTMC would benefit from the land use limitations imposed by these classifications (see Table 3.2.10-2 for specific acreages.

Surface-disturbing actions would be avoided or minimized in these areas, reducing the potential for sites to be damaged or destroyed. Indirect effects, particularly in VRM Class I and II areas, would be limited as well, as actions could only introduce up to a low level of change to the characteristic landscape that could alter the historic or culturally significant setting or feeling of cultural resource sites. Management prescriptions in Alternative A are generally less extensive (fewer acres) than those proposed in Alternatives B or C but are, in most cases, greater than under Alternative D.

Actions that open more land to surface-disturbing activity, such as locatable mineral extraction, ROW location, and recreational use, could have adverse effects on cultural resources (Table 3.2.10-2). Areas open to locatable mineral development on high and medium potential lands represent a small percentage of BLM-managed lands (2 percent); however, these areas are also high potential areas for cultural resources, including historic mining sites, and the potential for long-term permanent impacts remain. Alternative A would have more acres open to locatable mineral development in areas of medium or high LMP than Alternative B and therefore a higher likelihood for associated adverse impacts on cultural resources. However, Alternative A would have fewer impacts from locatable mineral development than Alternatives C and D, because it would open fewer areas to locatable mineral development in areas of medium or high locatable mineral potential. Other specific restrictions, such as lands subject to OHV limitations, are not specified under Alternative A. Cultural resources could be impacted by the development of new trails and travel corridors or by the ongoing use by OHVs of existing trails that have not yet been subject to cultural resources surveys.

Less quantifiable impacts could occur to cultural resources from management actions under Alternative A. For example, Alternatives B, C, and D each establish the INHT NTMC, a designation which serves to avoid and minimize impacts on cultural resources by controlling the type of uses and volume of people

and development in the corridor. The NTMC is not designated in Alternative A, which could lead to impacts on cultural resources in the trail corridor due to the lack of restrictions that would otherwise be imposed with this designation. There is also no defined support for BSWI communities in Alternative A regarding cultural landscape analyses and cultural tourism assistance. BLM actions on these topics are more clearly defined in Alternatives B, C, and D. The lack of specificity on certain management actions under Alternative A results in an increased potential for adverse impacts on cultural resources when compared with the other three alternatives.

Effects Common to All Action Alternatives

Applicable regulations and BMPs listed in Appendix K would be applied to all surface-disturbing activities. These processes do serve to avoid and minimize direct or indirect impacts on cultural resources by requiring surveys in advance of action.

Wildland fire management activities would be common across all action alternatives. Fire suppression activities would be prioritized to avoid and minimize impacts on cultural resources. Each action alternative also involves completing cultural resource surveys in advance of suppression and rehabilitation actions, which could lead to an increased number of sites identified and protected.

Effects from Alternative B

Alternative B would generally have fewer adverse impacts to cultural resources when compared with the other three alternatives. There would be fewer acres available for surface-disturbing activities, such as mineral development or ROW location. Recreation along the INHT would be managed within the INHT SRMA to achieve desired outcomes, benefits, and setting, thereby reducing the potential for direct and indirect effects. Managing CFZs to promote subsistence use would limit use within these areas, thereby limiting potential for destruction, looting, or inadvertent damage to cultural resources in those areas. There are more acres with special designations, such as lands managed for wilderness characteristics as a priority, WSRs, and ACECs, than in any of the other alternatives (Table 3.2.10-2), which alternatives, which allows for fewer surface-disturbing actions and more controlled uses that avoid and minimizes impacts, directly benefitting the preservation of cultural resources and preventing irreparable damage to important historic, cultural, and scenic values. Alternative B would manage more area as VRM Class II, including a 15-mile buffer around Flat, which would minimize the visual intrusions of new projects near the historic community. There are also specific ACECs in Alternative B that meet the relevance and importance criteria for cultural resources and would have specific cultural resource management decisions prescribed for them to avoid and minimize impacts on cultural values. ACECs are managed as NSO for externally proposed structures such as cell towers and cabins, providing additional management to minimize impacts to cultural resources by minimizing surface disturbance.

Alternative B includes more management actions that would result in non-quantifiable beneficial effects for activities that cause surface disturbance than the other alternatives. Cultural resource management decisions under this alternative identify high probability areas for cultural resource survey and actions that could increase the number of known cultural sites in the planning area that would benefit from protective measures. Alternative B also offers support for BSWI communities to develop cultural landscape reports and promotes proactive collaboration on cultural tourism development. Collectively, the geographic extent of adverse effects on cultural resources is less under Alternative B than under Alternative A, C, or D.

Effects from Alternative C

Effects on cultural resources in Alternative C are in some instances comparable to those under Alternative B. For example, Alternative C maintains the same cultural resource management decisions that involve defining areas of high cultural resource potential and prioritizing those areas for cultural resources surveys. Alternative C also offers more support to BSWI communities by identifying additional villages where cultural landscape analyses would occur.

Key differences between Alternatives B and C, however, include more acres available for surface-disturbing activity that could destroy or damage cultural resource sites when compared with Alternative B. There are over twice the high- and medium-potential acres open for locatable mineral development under Alternative C when compared with Alternative B. These areas often have high potential for historic-era cultural resources, and management actions under Alternative C could increase the potential for damage or destruction of cultural resources in those areas. Lands open for ROW location also nearly double under Alternative C, and the land designations that serve to minimize and avoid impacts on cultural resources would be less than in Alternative A. Alternative C would include CFZs to promote subsistence use that would limit use within these areas, thereby limiting potential for destruction, looting, or inadvertent damage to cultural resources. However, these areas would be smaller than Alternative B and therefore minimize impacts in a smaller geographic area. There would be no ACECs under Alternative C; however, Alternative C would maintain some management actions to minimize impacts to identified R&Is even though no ACECs would be designated. Such management includes NSO for externally proposed structures and leasable mineral development and VRM Class II designation for areas with cultural R&Is. Alternative C would have fewer total acres managed as VRM Class II compared to Alternative B and would manage the 15-mile buffer around the historic community of Flat as VRM Class III. This would allow a moderate level of change to the characteristic landscape, which could result in adverse impacts to the historic community at Flat, depending on the nature and type of the development. There are also fewer restrictions on OHV use when compared with Alternative B. This translates into more acres where destruction and damage from management actions related to ROW development, OHV use, and locatable mineral extraction have the potential to occur in Alternative C, but less than in Alternative D.

Effects from Alternative D

Alternative D generally allows uses that have the potential to adversely impact cultural resources on more acres than any other alternative. More acres are open to actions that involve surface-disturbing activities that could damage, destroy, or indirectly and adversely affect cultural resources. All areas of high- and medium locatable mineral potential on BLM-managed land in the planning area would be open to locatable mineral development under Alternative D, which is more than Alternatives A and B and the same as Alternative C. More acres would be open for ROW location when compared to Alternatives A, B, and C. Alternative D would have no ROW exclusions and fewer acres of ROW avoidance areas than Alternatives B and C. These actions have the potential to result in adverse and permanent effects on cultural resources. The effects could be direct through the destruction and damage to cultural sites from mining or ROW development activities that involve surface-disturbing activity. Effects could also be indirect by introducing more people and more access into areas that could result in inadvertent trampling of sites or increase potential for site looting.

The VRM Class I and II acreage is substantially lower than Alternatives B and C, and the 15-mile buffer around Flat is VRM Class IV (Table 3.2.10-2). The VRM Class IV designation would contribute to an increased chance of indirect effects allowing a high level of change to the characteristic landscape, which could adversely affect the setting and feeling of historic and culturally sensitive sites. Alternative D includes fewer limits on activities that could result in surface disturbance. As with Alternative C, there are no areas proposed to be managed for lands with wilderness characteristics as a priority and no ACECs, and the only WSR would be the existing designation of the Unalakleet River. The lack of management prescriptions on lands in the planning area increases the potential for direct and indirect effects, as it allows for more intrusive and surface-disturbing activities to occur.

The less quantifiable actions also increase the potential for adverse direct and indirect effects on cultural resources or lower the potential for beneficial outcomes related to increasing the number of sites identified and expanding the awareness of cultural resources. However, when compared with the more quantifiable aspects noted above, there is less difference between the action alternatives. Alternative D allows for more recreation uses with less permitting oversight (particularly as no CFZs would be applied), an action that provides less opportunity to influence number of users and modes of transportation and limits recreation development, which could affect cultural resources. This could result in more site damage, destruction, vandalism, and other effects based on increased users in areas where cultural resources could exist. However, unlike Alternative A (which has no designation), this alternative proposes the INHT NTMC at a similar extent to Alternatives B and C and has the same recommendations as Alternatives B and C with respect to the identification of high potential areas to target for cultural resources surveys. The cultural resource actions associated with assisting BSWI communities allow for the consideration of areas throughout the entire planning area for cultural landscape analysis, which is more expansive than the select communities targeted in Alternatives B and C. The assistance for developing cultural tourism efforts for communities is less in Alternative D, but provisions for this support are still available where none is defined in Alternative A. These actions would lead to more identified sites and could result in more sites designated for scientific use.

Alternative D represents the action alternative with the greatest potential for adverse impacts to cultural resources when compared to Alternatives B and C, though it does provide more clarity than Alternative A in terms of acres open or closed for certain uses. In some respects, Alternative D could lead to better and more proactive cultural resource management when compared to Alternative A, as the areas where surface-disturbing activities could occur would be more defined and could then be targeted for cultural resource actions such as sensitivity modeling and cultural resources surveys in advance of authorizing further uses. Overall, though, Alternative D limits activities detrimental to the preservation of cultural resources on fewer acres, compared to all other alternatives.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Past and present actions in the planning area are primarily related to historic mining in the Iditarod Mining District and other areas. Increased population based on mining also resulted in the accelerated use of natural resources to support the growing communities, particularly forest resources used for construction and heating. The increase in exploration and development of mines (and other resources) led to further infrastructure development, such as roads connecting population centers to mining areas and

local roads and trails serving hunting and resource allocation for local communities. These actions created many of the cultural resources that are now being analyzed for impacts, such as historic mine remains and historic trails, like the INHT. These activities also likely resulted in adverse effects on cultural resources, but the degree of these effects is not quantifiable.

Recreation and subsistence activities are the most prevalent current land use in the planning area. Use of the INHT has increased over time and has contributed both to an increased knowledge of the trail's historic significance and to more direct and adverse effects on the trail and associated historic resources, such as shelter cabins and roadhouses. **Trend: Degrading.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Reasonably foreseeable future actions that could affect cultural resources are primarily related to the ongoing development of the Donlin Gold Project and the potential for additional exploration and development of locatable minerals in the planning area. Many of the locatable minerals are co-located with mining districts that contain sites, artifacts, objects, and features related to historic mining in the region. This type of development has the potential for direct and indirect impacts on cultural resources due to the inherent surface-disturbing nature of these activities.

Infrastructure developments to communities also present a high potential for impacts on cultural resources. Any development of roads and other transportation routes would result in direct impacts on cultural resources from additional surface disturbance, as well as indirect impacts, such as visual impacts of a new road corridor in an area that previously had no visible development. The proposed ROW corridors are long and pass through areas known to contain cultural resources. **Trend: Degrade at a greater rate.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Cumulative impacts to cultural resources can occur through incremental degradation of the overall resource base throughout the planning area from any of the management actions and decisions that have the potential to impact cultural resources as described in this section. While loss of one or two sites could have an immeasurably low impact on the entire resource base, there would likely be ongoing activity across the resource area that would cumulatively and adversely affect the resource base. Cultural resources are non-renewable; once damaged, the information value of the sites could be severely damaged or destroyed. Any resource or resource use that has been evaluated as causing direct or indirect impacts on cultural resource would contribute to the cumulative degradation of these resources over time.

Impacts that may seem minor after only one individual occurrence can cumulatively lead to larger direct effects over time. For example, one individual visiting a historic cabin or walking through a prehistoric surface lithic scatter may appear to have no effect on that resource. However, repeated visits over time would likely result in destruction and loss of that resource. Site looting is another example of cumulative site-specific impacts. One visitor may only take one artifact, but over time, if each visitor takes away a part of the site, long-term and irreversible impacts could occur to that site. Resource uses, such as recreation planning, that could result in increased use of an area could inadvertently cause long-term effects on cultural resources. **Trend: Resource condition would degrade but at a lesser rate than Alternative A.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

Cumulative impacts and resource trends on a planning area scale would be similar to Alternative B, although resource condition would degrade at a slightly greater rate due to a higher level of potential development. **Trend: Resource condition would degrade but at a lesser rate than Alternative A and greater than Alternative B.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

Cumulative impacts and resource trend on a planning area scale would be the same as Alternative B, although resource conditions would degrade at a slightly greater rate than Alternative B or C due to a higher level of potential development. **Trend: Resource condition would degrade but at a lesser rate than Alternative A and greater rate than Alternatives B and C.**

3.2.11 Paleontological Resources

Affected Environment

Paleontological resources are any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth. The occurrence of paleontological resources is closely tied to the geologic units (e.g., beds, formations, or members) that contain them.

Potential paleontological resource impacts are determined at the geologic unit level. The BLM's Potential Fossil Yield Classification (PFYC) system (BLM 2016e) ranks geologic units by their potential to contain significant paleontological resources. The PFYC system is the primary means for assessing potential impacts to paleontological resources and is one of the initial criteria to help determine whether field surveys are required for land management decisions. The PFYC Classes are listed in Table 3.2.11-1. Geologic units with potential fossil occurrences within the planning area are shown on Map 3.2.3-4.

Table 3.2.11-1: Potential Fossil Yield Classification Description

PFYC	Characteristics
Class 1 – Very Low	Igneous or metamorphic units; units that are Precambrian or older.
Class 2 – Low	Sedimentary units where significant fossils are unlikely; generally younger than 10,000 years before present; recent aeolian.
Class 3 – Moderate	Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence.
Class 4 – High	Geologic units that are known to contain a high occurrence of significant fossils.
Class 5 – Very High	Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources.
Class U – Unknown	Geologic units that cannot receive an informed PFYC assignment; fossils could be present, but there is insufficient knowledge about the unit.

Planning area PFYC assignments are depicted in Map 3.2.11.1. The majority of the planning area falls under Class U "unknown" or Class 3 "moderate" potential for significant fossils (BLM 2016e). Little work has been done to inventory fossil occurrences on BLM-managed public lands in the planning area. The fossil record within the planning area is largely a byproduct of mining activity. Known locations are clustered around mining districts. Fossils recovered range from early Paleozoic to late Pleistocene in age. The absence of known fossil localities in any given region of the planning area could be the result of a lack of investigation, survey**,** and inventory, rather than a true absence of paleontological sites.

The current management trend for paleontological resources in the planning area is toward continued scientific research and increased opportunities for environmental education and interpretive use.

Resources farther from populated areas are not, in large measure, adversely affected by human activity. However, all areas of fossil-bearing sedimentary rocks are trending toward increased recreational use, and protection of paleontological resources is subject to the limits of the availability of resource staff and law enforcement monitoring. There is the potential for paleontological resources to be illegally removed or damaged in the future.

Direct and Indirect Effects

Direct effects are typically adverse and permanent; once the resource is disturbed, it is either destroyed or the geological context is diminished. Indirect effects could be created by increasing access to areas with fossil remains**,** which could result in looting or vandalism activities of significant fossils. Overall, actions associated with other resources that restrict sub-surface activities would result in beneficial effects (less chance of disturbance) to any paleontological resources that could be present. Conversely, actions that result in the potential for increased acreages to be subject to surface-disturbing activities would increase the probability of adverse impacts on paleontological resources. Table 3.2.11-2 below summarizes the types of effects that could occur to paleontological resources, the management actions that could cause those effects, and the indicators used to measure those effects. Table 3.2.11-3 discloses the potential magnitude and extent of the effects across alternatives.

Table 3.2.11-2: Summary of Effects to Paleontological Resources by Management Action

Types of Effects	Management Actions	Indicators
Paleontological resources could be destroyed or permanently damaged by actions that involve surface-disturbing activity.	• Locatable, Salable, and Leasable Mineral Decisions • Lands and Realty Decisions • Recreation and Visitor Services Management Decisions • Hazardous Material Cleanup Decisions	• Acres of high or medium potential open to mineral development • Acres of potential ROW authorization • Areas subject to recreation decisions regarding access, number of people, and facility development (qualitative) • Acres open to OHV use without limitations • Areas subject to hazardous material cleanup
Actions that limit or restrict surface-disturbing activity that could destroy paleontological resources or indirectly effect paleontological resources would have positive and beneficial impacts on these resources. Paleontological resource surveys, if required, would lead to increased number of sites identified and would allow for the consideration of impacts on newly discovered sites that are currently not known.	• Wildfire Management Decisions • Travel and Transportation Management Decisions • Protected Land Status Designations (Lands with Wilderness Characteristics Managed as a Priority, ACECs, National Trails, WSRs) • Lands and Realty Decisions • Support for BSWI Communities	• Areas subject to paleontological resource evaluation prior to fuels reduction actions and areas near known paleontological resources targeted for fire prevention actions (qualitative) • Areas identified for paleontological resource survey, number of sites designated for scientific use (qualitative) • Acres of ACECs (see Appendix J for full list of management actions) • Acres of suitable and designated WSRs • Acres of lands managed for wilderness characteristics as a priority

Table 3.2.11-3. Summary of Impacts to Paleontological Resources by Indicator

Resource Indicator	Alternative A[1]	Alternative B[1]	Alternative C[1]	Alternative D[1]
Areas of high or medium LMP open to locatable mineral development	294,325 acres (52%)	202,610 acres (36%)	565,489 acres (100%)	565,489 acres (100%)
Acres open to mineral leasing subject to standard stipulations	8,246,152 acres (61%)	2,517,414 acres (19%)	6,594,906 acres (49%)	13,182,385 acres (98%)
Open to ROW location	No acres specified	3,176,977 acres (24%)	5,820,362 acres (43%)	8,234,323 acres (61%)
ROW permitted on case-by-case basis	13,465,894 acres (100%)	0 acres (0%)	0 acres (0%)	100,644 acres (<1%)
Areas subject to recreation decisions that increase access, number of people, and development of support facilities (qualitative)	Impacts remain low due to lack of recreation facilities or plans to develop such facilities in this alternative.	Recreation use within the INHT SRMA (355,799 acres) would be managed to achieve identified outcome and experience, thereby maintaining recreation setting characteristics and minimizing potential for damage to cultural resources associated with the INHT. Managing the CFZs to promote subsistence use within a 15-mile radius of communities would limit use and potential for inadvertent harm of paleontological resources near communities.	Same as Alternative B, but the SRMA would be reduced to 340,574 acres and the CFZ would be reduced to a 5-mile radius surrounding BSWI communities.	Beneficial impacts within the SRMA would be the same as Alternative C. There would be no CFZ applied around BSWI communities.
Areas identified for additional paleontological resource survey (qualitative)	Requires compliance with FLPMA, NEPA, and the Paleontological Resources Preservation Act.	High priority areas for paleontological sites would be identified and more sites would be identified and designated for scientific use. More acres would be surveyed proactively than under Alternative A.	Same as Alternative B	Same as Alternative B
Areas managed to protect lands with wilderness characteristics as a priority	No acres specified	277,489 acres (2%)	No acres (0%)	No acres (0%)
Lands designated ACEC	1,884,376 acres (14%)	3,912,698 acres (29%)	0 acres (0%)	0 acres (0%)
WSR acres eligible, suitable, or designated	• Designated: 46,953 acres (2%) • Eligible: 332,176 acres (2%)	• Designated: 46,953 acres (2%) • Recommended Suitable: 332,176 acres (2%)	Designated: 46,953 acres (2%)	Designated: 46,953 acres (2%)
ROW exclusion areas:	No acres specified	1,464,069 acres (11%)	0 acres (0%)	0 acres (0%)
ROW avoidance areas:	No acres specified	8,824,848 acres (66%)	7,069,494 acres (52%)	5,130,927 acres (38%)
ROW avoidance areas for linear realty actions	No acres specified	0 acres (0%)	576,038 acres (4%)[1]	0 acres (0%)

Note:
1) Acreages and percentages are approximate and refer to BLM-managed lands in the planning area.

Effects from Alternative A

Under Alternative A, impacts to paleontological resources would be avoided or minimized in certain areas due to land status classifications that limit surface-disturbing activity. Paleontological resources in ACECs and WSR corridors would benefit from the land use limitations imposed by these classifications (see Table 3.2.11-3 for specific acreages). Surface-disturbing actions would be avoided or minimized in these areas, and there would be less potential for resources to be damaged or destroyed. Management

actions to avoid and minimize impacts to paleontological resources in Alternative A are generally less prevalent and extensive (fewer acres) than those proposed in Alternative B or C but are, in most cases, greater than under Alternative D.

Actions that involve opening more land to surface-disturbing activity would increase the potential for detrimental effects on paleontological resources. Similarly, other specific acreages of lands with management prescriptions, such as those subject to OHV limitations, are not specified under Alternative A. Paleontological resources in these scenarios could be impacted by the development of new trails and travel corridors or ongoing use by OHVs of existing trails that have not yet been subject to paleontological resources surveys.

Effects from Alternative B

Effects from Alternative B on paleontological resources are generally less than the other three alternatives. There are fewer acres available for surface-disturbing activities such as mineral development or ROW location. Recreation along the INHT would be managed within the INHT SRMA to achieve desired outcomes, benefits, and setting, thereby reducing the potential for direct and indirect effects. Managing CFZs to promote subsistence use would limit use within these areas, thereby limiting potential for destruction, looting, or inadvertent damage to paleontological resources in those areas. There are more acres with special designations, such as lands managed to protect wilderness characteristics as a priority, WSRs, and ACECs, than in any of the other alternatives, which allows for fewer surface-disturbing actions that could impact paleontological resources.

Less-quantifiable beneficial effects are also more prevalent in Alternative B. Paleontological resource management decisions under this alternative include the identification of high probability areas for paleontological resource survey and actions that could lead to an increase in the number of known paleontological resource locations in the planning area that would benefit from protective measures. Collectively, the geographic extent of beneficial actions for paleontological resource is greater in Alternative B than in Alternative A, C, or D.

Effects from Alternative C

Effects on paleontological resources in Alternative C would in some instances be comparable to those under Alternative B. Alternative C would include the same paleontological resource management decisions that involve defining areas of high paleontological resource potential as Alternative B.

Key differences between Alternatives B and C, however, include more acres available for surface-disturbing activity that could destroy or damage paleontological resource sites when compared with Alternative B (Table 3.2.11-3). There would be nearly twice the high- and medium-potential acres available for locatable mineral development under Alternative C compared with Alternative B. Alternative C would represent an increased potential for damage or destruction of paleontological resources in those areas. Lands open for ROW location would also nearly double under Alternative C, and there would be fewer proposed land designations that serve to avoid and minimize impacts to paleontological resources than in Alternative B. There would be no ROW exclusion areas, fewer acres of ROW avoidance, no ACECs, and no areas managing wilderness characteristics as a priority. However, Alternative C would maintain some management actions to minimize impacts to potential ACEC areas proposed for designation under Alternative B, even though no ACECs would be designated under Alternative C. Such management includes NSO for externally proposed structures and leasable mineral

development and VRM Class II or III designation, which would limit surface-disturbing activities through limits to allowable change in the landscape. There would also be fewer restrictions on OHV use when compared with Alternative B. Overall, under Alternative C, there would be more acres where destruction and damage from management actions related to ROW development, OHV use, and locatable mineral extraction could occur compared to Alternative B, but fewer than in Alternative D.

Effects from Alternative D

Alternative D generally prioritizes uses that have the greatest potential to adversely impact paleontological resources. More acres would be open to actions that involve surface-disturbing activates that could damage, destroy, or indirectly and adversely affect paleontological resources. All areas of high and medium LMP would be open to locatable mineral leasing under Alternative D, which is more than Alternative A and B and the same as Alternative C. Alternative D would have no ROW exclusions, fewer acres for ROW avoidance areas, and more acres open to new ROW than Alternatives B and C. These actions have the potential to result in long-term, adverse effects on paleontological resources. The effects could be direct, through the destruction and damage to paleontological sites from mining or ROW development activates that involve surface-disturbing activity. Effects could also be indirect; each of these actions could introduce more people and more access into areas, potentially leading to looting or vandalism.

Under Alternative D, there would be fewer acres with land designations that serve to avoid and minimize impacts to paleontological resources, compared to Alternative B, although it would be similar to Alternative C. There would be no areas proposed to be managed as lands with wilderness characteristics as a priority and no potential ACECs. The only WSR would be the existing designation of the Unalakleet Wild River Corridor. The lack of special designations on lands in the planning area increases the potential for direct and indirect effects because it allows for more intrusive, surface-disturbing activities to occur.

The less quantifiable actions would also increase the potential for adverse direct and indirect effects on paleontological resources or lower the potential for beneficial impacts related to increasing the number of sites identified and expanding the awareness of paleontological resources. Alternative D would allow more recreation uses with less permitting oversight (particularly as no CFZs would be applied), which would increase the potential for direct and indirect effects by having less opportunity to influence number of users and modes of transportation and restrict areas from recreation development. This could result in more resource damage, destruction, vandalism, and other effects based on increased users in sensitive areas.

Alternative D represents the action alternative with the greatest potential for adverse impacts to paleontological resources when compared to Alternatives B and C, though it does provide more clarity than Alternative A in terms of acres open or closed for certain uses. In some respects, Alternative D could lead to better and more proactive paleontological resource management when compared to Alternative A, as the areas where surface-disturbing activities could occur are more defined and could be targeted for resource actions such as sensitivity modeling and paleontological resources surveys in advance of authorizing further uses. However, overall, there would be more acres under Alternative D where uses detrimental to the preservation of paleontological resources are allowed.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Past and present actions in the planning are primarily related to historic mining throughout the planning area in the Iditarod Mining District and other areas. Increased population based on mining also resulted in the accelerated use of natural resources to support the growing communities, particularly forest resources used for construction and heating. The increase in exploration and development of mines (and other resources) led to further infrastructure development, such as roads connecting population centers to mining areas and local roads and trails serving hunting and resource allocation for local communities. These activities likely resulted in adverse impacts on paleontological resources, but the degree of these effects is not quantifiable.

Recreation and subsistence activities are the most prevalent current land use in the planning area. Past and present subsistence use also has likely increased the incremental damage to sites from actions such as multiple visitations and site looting or continued use of trails and subsequent erosional issues. **Trend: Degrading.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Reasonably foreseeable future actions that could affect paleontological resources are primarily related to the ongoing development of the Donlin Gold Project and the potential for additional exploration and development of locatable minerals in the planning area. Many of the locatable minerals are co-located with mining districts that contain paleontological resources. This type of development has the potential for direct and indirect impacts on paleontological resources due to the inherent surface-disturbing nature of these activities.

Infrastructure developments in communities also present a high potential for impacts on paleontological resources. Any development of roads and other transportation routes would result in additional surface disturbance, including direct impacts on paleontological resources and indirect impacts, such as erosion or site looting, based on increased visitation. The proposed ROW corridors are long and pass through areas known to contain paleontological resources. **Trend: Degrade at a greater rate.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Cumulative impacts to paleontological resources could occur through incremental degradation of the overall resource base throughout the planning area from any of the management actions and decisions that have the potential to impact paleontological resources. While the loss of one or two sites could have an immeasurably low impact on the entire resource base, there would likely be ongoing activity across the resource area that would cumulatively and adversely affect the resource base. Paleontological resources are non-renewable; once damaged, the information value of the sites could be severely damaged or destroyed. Any resource or resource use that has been evaluated as causing direct or indirect impacts on paleontological resources would contribute to the cumulative degradation of these resources over time.

Impacts that may seem minor after only one individual occurrence could cumulatively lead to larger direct effects over time. Site looting is an example of a cumulative site-specific impact. A visitor may only take a single significant fossil, but over time, if each visitor takes away a part of the site, long-term and irreversible impacts could occur to that site. Resource uses, such as recreation planning, that could result in increased use of an area could inadvertently cause long-term effects on paleontological resources. **Trend: Resource condition would degrade but at a lesser rate than Alternative A.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

Cumulative impacts and resource trends on a planning area scale would be similar to Alternative B although resource condition would degrade at a slightly greater rate due to a higher level of potential development. **Trend: Resource condition would degrade but at a lesser rate than Alternative A and greater than Alternative B.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

Cumulative impacts and resource trend on a planning area scale would be the same as Alternative B. **Trend: Resource condition would degrade but at a greater rate than Alternative A, B, or C.**

3.2.12 Visual Resources Management

Affected Environment

A visual resource inventory (VRI) of the planning area was completed in March 2018 (BLM 2018d). The scenic quality, sensitivity, distance zone, and resulting VRI distribution for the planning area is summarized in Maps 3.2.12-1 through 3.2.12-4. More information is also available in the *Visual Resource Inventory for the Bering-Sea–Western Interior Planning Area* (BLM 2018d). VRI Class is assigned with consideration of scenic quality, visual sensitivity, and visual distance zone, with Class I being the most valued (Table 3.2.12-1).

Table 3.2.12-1: Visual Resource Inventory Affected Environment Summary

Visual Resource Inventory Component	Acres	Percent of Planning Area
Scenic Quality[1]		
A	3,178,607	5[2]
B	46,444,967	71[2]
C	15,346,944	24[2]
Visual Sensitivity		
High	42,024,047	65[2]
Moderate	12,490,370	19[2]
Low	10,456,100	16[2]
Visual Distance Zone		
Foreground-Middleground	14,938,502	23[2]
Background	4,857,647	7[2]
Seldom Seen	45,174,369	70[2]
Visual Resource Inventory Class		
VRI Class I	46,953	<1[3]
VRI Class II	486,358	4[3]
VRI Class III	1,760,037	13[3]
VRI Class IV	11,172,455	83[3]

Notes:
1) "A" denotes highest scenic quality and "C" lowest scenic quality.
2) These percentages are based on the entire planning area (not just BLM-managed lands).
3) These percentages for VRI Class are based on the BLM-managed lands in the planning area during the time of the VRI (13,465,804 acres).

Direct and Indirect Effects

Table 3.2.12-2 summarizes the nature and types of beneficial or adverse effects that could occur to visual resources, the proposed management actions that could influence those effects, and the indicators used to

measure the potential magnitude and extent of the effects. Table 3.2.12-3 discloses the potential magnitude and extent of the effects by indicator, across alternatives.

Table 3.2.12-2: Summary of Effects to Visual Resources by Management Action

Types of Effects	Management Actions	Indicators
Removal of vegetation through commercial, casual, or subsistence woodland product harvesting could impact visual values by modifying form, line, color, and texture of the landscape by reducing the amount and type of vegetation in the landscape	• Forestry and Woodland Product Decisions • VRM Class Designations	• VRM Class (acres) overlaid with scenic quality rating, sensitivity rating, visual distance zone, and VRI class
Allowance or restriction of new ROW could impact visual values by introducing new form, line, color, and texture to the landscape through vegetation removal and resulting linear forms and lines that contrast the existing landscape that was previously characterized by curvilinear and amorphous shapes.	• ROW Decisions • VRM Class Designations	• VRM Class (acres) overlaid with scenic quality rating, sensitivity rating, visual distance zone, and VRI class
Mineral development could result in large areas of vegetation removal and soil exposure and new infrastructure such as roads, pipelines, lighting, employee housing, and support structures.	• Mineral Decisions • VRM Class Designations	• VRM Class (acres) overlaid with scenic quality rating, sensitivity rating, visual distance zone, and VRI class
Continuation and addition of new OHV travel throughout the planning area could result in visual impacts by creating ruts, disturbing vegetation, and exposing soils.	• Travel and Transportation Management Decisions • VRM Class Designations	• VRM Class (acres) overlaid with scenic quality rating, sensitivity rating, visual distance zone, and VRI class
Designating areas for special management, such as ACECs, WSRs, and the NTMC, could all have the potential to minimize or avoid impacts to visual resources by limiting or prohibiting activities that could modify form, line, color, and texture such as mining activity, overland OHV use, new ROW, and other surface-disturbing activity.	• Areas Designated as ACECs • Areas Identified as Suitable WSR Corridors • Areas of Designated WSR Corridor • Areas Designated as the NTMC • VRM Class Designations	• VRM Class (acres) overlaid with scenic quality rating, sensitivity rating, visual distance zone, and VRI class

The nature and type of potential effects to visual resources as described in Table 3.2.12-2 could have the potential to impact ORVs within a WSR corridor, affect wilderness characteristics of naturalness, affect R&Is of ACECs, and alter the integrity and setting of the INHT. Visual sensitivity could also be impacted if activities that would alter the landscape character occur in areas identified to have high visual sensitivity. Activities that would alter landscape character within the foreground/middleground distance zone would be the most visible because visibility would be highest in those areas. Regardless of what type of activity is allowed or restricted by a management action, all activities in the planning area would still have to be consistent with the underlying VRM class, which would provide the allowable level of change to existing landscape character. Therefore, the primary indicator for all types of impacts to visual resources is the VRM class.

Table 3.2.12-3: Visual Resources Inventory and Management Classes by Alternative

VRM RMP Alternative	Total Planning Area (acres)												
	Scenic Quality Rating			Sensitivity Rating			Distance Zones			VRI Class			
Alternative A	**A**	**B**	**C**	**High**	**Med**	**Low**	**F/M**	**B**	**SS**	**I**	**II**	**III**	**IV**
VRM Class I	0	0	46,953	46,953	0	0	45,294	0	1,660	46,953	0	0	0
Undesignated	418	5,913,646	7,504,774	3,856,820	4,382,332	5,179,687	1,793,433	852,509	10,772,896	0	486,358	1,760,036	11,172,445
Total 13,465,894	**418**	**5,913,646**	**7,551,728**	**3,903,774**	**4,382,332**	**5,179,687**	**1,838,726**	**852,509**	**10,774,556**	**46,953**	**486,358**	**1,760,036**	**11,172,445**
Alternative B	**A**	**B**	**C**	**High**	**Med**	**Low**	**F/M**	**B**	**SS**	**I**	**II**	**III**	**IV**
VRM Class I	363	470,509	864,896	1,146,630	124,153	64,984	640,733	115,043	579,992	46,953	272,042	394,893	621,879
VRM Class II	55	2,251,911	4,238,051	2,748,993	1,623,268	2,117,757	724,298	560,174	5,205,546	0	214,086	950,817	5,325,115
VRM Class III	0	1,871,796	1,644,257	6,488	1,930,550	1,579,014	473,681	110,848	2,931,524	0	230	413,864	3,101,959
VRM Class IV	0	1,319,430	804,524	1,662	704,360	1,417,931	15	66,444	2,057,495	0	0	462	2,123,492
Total 13,465,894	**418**	**5,913,646**	**7,551,728**	**3,903,773**	**4,382,331**	**5,179,686**	**1,838,727**	**852,509**	**10,774,557**	**46,953**	**486,358**	**1,760,036**	**11,172,445**
Alternative C	**A**	**B**	**C**	**High**	**Med**	**Low**	**F/M**	**B**	**SS**	**I**	**II**	**III**	**IV**
VRM Class I	0	0	46,953	46,953	0	0	45,924	0	1,660	46,953	0	0	0
VRM Class II	418	1,016,720	1,749,081	2,206,916	119,938	439,366	665,753	289,312	1,811,154	0	390,660	746,310	1,629,249
VRM Class III	0	2,723,951	3,371,810	1,351,115	3,188,432	1,556,215	1,127,654	282,530	4,685,578	0	95,695	960,036	5,040,031
VRM Class IV	0	2,172,975	2,383,883	298,790	1,073,962	3,184,106	26	280,667	4,276,165	0	2	53,690	4,503,166
Total 13,465,894	**418**	**5,913,646**	**7,551,728**	**3,903,773**	**4,382,331**	**5,179,686**	**1,838,727**	**852,509**	**10,774,557**	**46,953**	**486,358**	**1,760,036**	**11,172,445**
Alternative D	**A**	**B**	**C**	**High**	**Med**	**Low**	**F/M**	**B**	**SS**	**I**	**II**	**III**	**IV**
VRM Class I	0	0	46,953	46,953	0	0	45,294	0	1,660	46,953	0	0	0
VRM Class II	373	279,249	399,930	679,541	10	0	402,772	49,665	227,114	0	219,170	244,066	216,315
VRM Class III	0	3,115,628	3,024,595	2,311,388	3,155,837	672,998	1,390,628	460,369	4,289,226	0	267,139	1,364,569	4,508,516
VRM Class IV	45	2,518,769	4,080,250	865,891	1,226,484	4,506,688	33	342,475	6,256,556	0	49	151,400	6,447,614
Total 13,465,894	**418**	**5,913,646**	**7,551,728**	**3,903,773**	**4,382,331**	**5,179,686**	**1,838,727**	**852,509**	**10,774,557**	**46,953**	**486,358**	**1,760,036**	**11,172,445**

Notes:
1) Totals of VRM and VRI are slightly different. This is due to the misalignment of the BSWI boundary (7/31/2017) and the BLM-managed lands information (BLM_Managed_BSWI_Diss_20160831) used for the analyses. VRI was built using the BSWI boundary as the constraint, then it was clipped to BLM-managed lands. VRM was built using BLM-managed lands as the constraint.
2) VRM = 13,465,894 acres
3) VRI = 13,465,804 acres
4) Intersect between VRM and VRI = 13,465,792 acres

Effects under Alternative A

Under Alternative A, the Unalakleet Wild River Corridor (46,953 acres) would continue to be managed as VRM Class I, which would continue to avoid and minimize impacts to visual values of the river corridor, consistent with existing management direction. The remaining 13,418,941 acres of BLM-managed land in the planning area would continue to have no VRM class designation. Proposed development would be evaluated on a project-specific basis. Absence of a VRM class designation could allow major modifications to the existing character of the landscape in any portion of the 13,418,941 undesignated acres.

More than 98 percent of the areas inventoried to have high sensitivity and 100 percent of the 418 acres inventoried to have a Scenic Quality Rating A (high) would have no VRM class designation under Alternative A. About 98 percent of areas within the foreground/middleground distance zone would also have no VRM class designation. Therefore, Alternative A could result in high magnitude impacts in recreation and tourism areas (e.g., INHT, Flat), locations with cultural identity (Pike Lake, INHT), viewsheds of adjacent national and State parks characterized by high sensitivity, and areas surrounding communities where landscape character could factor strongly into sense of place. High magnitude impacts could also result in areas, such as the Rohn area (including the INHT), identified as having Class A scenic quality. Lack of VRM class designations in the foreground/middleground distance zone from common travel routes such as primary rivers (Anvik, Yukon, Kuskokwim, and Unalakleet), INHT and Race Route (including public shelter cabins), summer/winter routes, safety cabins, the coastline, and Old Woman Mountain could result in higher visibility of impacts from these locations if projects were developed. Alternative A would designate 100 percent of lands inventoried as VRI Class I as VRM Class I.

Effects Common to All Action Alternatives

All the action alternatives would have the same VRM class designations for the following:

- 5-mile offset from centerline of summer and winter travel routes (VRM Class III)
- Three miles inland from coastlines (VRM Class III)
- Five-mile offset from centerline of main river travel routes, including the Yukon, Anvik, Unalakleet, and Kuskokwim Rivers (VRM Class III)
- Subsistence Use Areas inventoried as Scenic Quality A (VRM Class II)
- Subsistence Use Areas inventoried as Scenic Quality B or C (VRM Class III)

These VRM class designations could be superseded by more stringent VRM class designations for other overlapping resources in the management actions specific to each management alternative, shown in Table 2-9a. The values in Table 3.2.12-3 take all management actions for VRM class designations into consideration. The following sections quantify impacts to sensitivity, scenic quality, distance zones, and VRI class, which include the above management actions common to all action alternatives.

All action alternatives would also incorporate BMPs and SOPs to reduce visual contrast on individual projects and actions by emphasizing design elements that mimic existing form, line, color, and texture of the existing surrounding landscape.

Effects under Alternative B

Under Alternative B, of the 3,903,774 acres of BLM-managed land inventoried to have high sensitivity in the planning area, 29 percent would be managed as VRM Class I (e.g., INHT, Unalakleet Wild River

Corridor, Old Woman Mountain) and 70 percent would be managed as VRM Class II (Communities, INHT, Unalakleet [below the WSR corridor to the mouth], Pike Lake, viewsheds of adjacent national and State parks, and the Community of Flat). Less than 1 percent of high sensitivity areas would be managed as VRM Class III and IV and would coincide with primary rivers (travel routes). Of the 418 acres inventoried to have Scenic Quality Rating A (high), 363 acres would be managed as VRM Class I. Although this acreage represents less than 0.01 percent of the planning area, it also coincides with the Rohn segment of the INHT that was identified to have high visual sensitivity. Therefore, Alternative B would avoid and minimize impacts to this scarce resource within the planning area by managing it as VRM Class I, which allows only very low changes to the characteristic landscape that do not attract attention. The remaining 55 acres inventoried to have Scenic Quality Rating A would be managed as VRM Class II. Therefore, Alternative B would result in negligible impacts to sensitivity and scenic quality because areas inventoried with high sensitivity and high scenic quality would be managed to allow up to low changes to the characteristic landscape. For lands within the foreground/middleground distance zone, 35 percent would be managed as VRM Class I, 39 percent would be managed as VRM Class II, and 26 percent would be managed as VRM Class III or IV. Therefore, the majority of lands within the foreground/middleground distance zone where visibility would be highest would only be allowed to have up to low changes to the characteristic landscape. Alternative B would designate nearly all VRI Class I lands as VRM Class I. Therefore, Alternative B would result in low magnitude impacts to visual resources, particularly with respect to scenic quality and visual sensitivity.

Effects under Alternative C

Under Alternative C, the Unalakleet Wild River corridor (46,953 acres) would be managed as VRM Class I. Approximately 1 percent of BLM-managed land inventoried to have high sensitivity in the planning area would be managed as VRM Class I, and 57 percent managed as VRM Class II. These areas correspond to the INHT, the Unalakleet Wild River Corridor to the mouth, Pike Lake, and viewsheds of adjacent national and State parks. All lands inventoried as Scenic Quality Rating A (high) would be managed as VRM Class II. Alternative C would manage 39 percent of lands within the foreground/middleground distance zone as VRM Class I or II. Therefore, the majority of lands within the foreground/middleground distance zone where visibility would be highest would be allowed to have moderate-to-high levels of change to the characteristic landscape. Alternative C would manage all VRI Class I lands as VRM Class I and 80 percent of VRI Class II lands as VRM Class II. Therefore, Alternative C would minimize impacts on visual resources through proposed VRM designations, although to a lesser magnitude and geographic extent than Alternative B.

Effects under Alternative D

Under Alternative C, the Unalakleet Wild River corridor (46,953 acres) would be managed as VRM Class I. Approximately 19 percent of BLM-managed land inventoried to have high sensitivity in the planning area would be managed as VRM Class I or II, corresponding to the INHT and the Unalakleet. Approximately 89 percent of lands inventoried as Scenic Quality Rating A (high) (Rohn area) would be managed as VRM Class II. Alternative D would manage 24 percent of lands within the foreground/middleground distance zone as VRM Class I or II. Therefore, the majority of lands within the foreground/middleground distance zone where visibility would be highest would be allowed to have moderate-to-high levels of change to the characteristic landscape. Alternative D would manage all VRI Class I lands as VRM Class I and 45 percent of VRI Class II lands as VRM Class II. Therefore,

Alternative D would minimize impacts to scenic quality and overall visual values but would not provide substantial protections for areas with high sensitivity or high visibility (foreground/middleground distance zone). Alternative D would provide fewer protections to visual resources than Alternative B or C but more than Alternative A.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Because of the remoteness of the planning area, there is a low potential for change in visual resource values, and landscape character remains stable. **Trend: Stabilized.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Reasonably foreseeable future actions that would affect visual values primarily include mining activity and potential transportation corridors. The Donlin Gold Project would result in localized impacts to visual values, but the geographic extent of the impacts would be limited due to the large scale of the landscape and topography. The majority of the planning area would not have a VRM designation, so the allowable change to the landscape would be high. However, due to the remoteness of the planning area and the reasonably foreseeable future actions under consideration, major landscape changes are not anticipated throughout the planning area. **Trend: Counter the existing trend by slightly degrading visual values in the planning area.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Alternative B would manage over half of the planning area as VRM Class I or II. This would avoid and minimize impacts to visual values over a much larger geographic extent than Alternative A, which is primarily undesignated. Due to localized impacts associated with reasonably foreseeable future actions and increased protections for visual values through VRM designations, changes to the landscape on a planning level are not anticipated. Since almost half of the planning area could be subject to moderate or major change to the characteristic landscape, the resource condition could degrade, although not to the potential extent as under Alternative A. **Trend: Slightly degrade, although less than Alternative A.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

Alternative C would designate the majority of VRI Class I and II lands as VRM Classes I and II. However, it would only designate 28 percent of the planning area as VRM Class I or II, compared to 58 percent under Alternative B. Since over half of the planning area could be subject to moderate or major change to the characteristic landscape, the resource condition could degrade, although not to the potential extent as under Alternative A. **Trend: Slightly degrade, although less than Alternative A.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

The majority of the planning area would be managed as VRM Class III or IV. This would provide greater management of visual values than Alternative A but less than Alternative B or C. However, due to the remoteness of the planning area and reasonably foreseeable future actions under consideration, visual impacts on the planning level-scale are not anticipated throughout the planning area. **Trend: Counter the existing trend by slightly degrading visual values in the planning area (similar to Alternative A).**

3.2.13 Lands with Wilderness Characteristics

Affected Environment

Previous planning documents did not provide special management for areas with wilderness characteristics. During this RMP planning process, the BLM completed a comprehensive review of BLM-managed public lands within the planning area to determine if they possess wilderness characteristics. Results are documented in the BSWI RMP Wilderness Characteristics Inventory Report (BLM 2018e). This document is a comprehensive evaluation of wilderness characteristics on BLM-managed public lands in the planning area, as directed by Section 603 of FLPMA.

ANILCA Section 1320 exempts BLM lands in Alaska from FLPMA Section 603 but authorizes BLM to conduct wilderness studies periodically. Under both ANILCA and current policy, the BLM will not complete formal wilderness studies as outlined in Section 603 of FLPMA, designate any new or additional wilderness study areas, or make recommendations to Congress regarding wilderness suitability. However, it will maintain an inventory of lands with wilderness characteristics.

The evaluation of wilderness characteristics was performed on 13,466,118 acres, which was the size of the BLM-managed land in the planning area at the time the survey was completed. A total of 13,373,454 acres met the size criteria of at least 5,000 continuous acres. All lands that met the size criteria were also found to contain naturalness, because the human-made features throughout the area are largely unnoticeable. The inventory also showed that all areas that met the size criteria had outstanding opportunities for solitude or a primitive and unconfined type of recreation. The total percentage of lands that contain wilderness characteristics within the planning area is 99.3 percent (Appendix M).

According to BLM RMP guidance found in 43 CFR 1610, BLM RMPs and amendments must be consistent, to the extent practical, with officially approved or adopted resource-related plans of state and local governments, other federal agencies, and tribal governments so long as the guidance and RMPs are also consistent. Because there is no current management direction for wilderness characteristics on BLM-managed public lands within the planning area, there is no basis to determine consistency of BLM wilderness characteristics with neighboring land owners. Therefore, consistency would be accomplished in the RMP by incorporating the wilderness characteristics policies, programs, and provisions of public land laws and regulations as directed by the BLM RMP guidance found in 43 CFR 1610.3-2(b).

Direct and Indirect Effects

Table 3.2.13-1 below summarizes the nature and types of beneficial or adverse effects that could occur to lands with wilderness characteristics, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.2.13-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives.

Table 3.2.13-1: Summary of Effects to Lands with Wilderness Characteristics by Management Action

Types of Effects	Management Actions	Indicators
Management actions allowing uses inconsistent with maintaining wilderness characteristics, including, but not limited to, vehicle and/or motorized equipment use, visible surface disturbance or loud, repetitive noise, would result in the loss of naturalness and solitude near the activity, thereby decreasing acres of lands with wilderness characteristic equal to the acreage of the authorization.	• Lands with Wilderness Characteristics Decisions • Commercial Woodland Harvest Decisions • Locatable and Salable Mineral Decisions	• Acres of lands with wilderness characteristics that would be open to mineral location and entry within areas of medium or high mineral potential • Acres of lands with wilderness characteristics that would be open to ROW authorizations • Acres of lands with wilderness characteristics that would be available for disposal
Management actions consistent with VRM Class III and IV could result in a loss of naturalness, thereby decreasing acres of lands with wilderness characteristics.	• Lands with Wilderness Characteristics Decisions • VRM Class Designations	• Acres of lands with wilderness characteristics land managed as VRM Class III and IV
Mineral location and entry activities would introduce increased human presence and activity, noise, and changes to the visual landscape through grading, mining, and additional infrastructure, which could reduce wilderness characteristics, including naturalness and/or outstanding opportunities for solitude or primitive and unconfined types of recreation.	• Lands with Wilderness Characteristics Decisions • Leasable Mineral Decisions	• Acres of lands with wilderness characteristics not managed to protect wilderness character as a priority • Acres of lands with wilderness characteristics that would be open to mineral location and entry within areas of medium or high mineral potential
ROW authorizations could lead to visual changes to the landscape and allow additional access that could result in a loss of naturalness and/or outstanding opportunities for solitude or primitive and unconfined types of recreation.	• ROW Decisions • Wind Energy Development • Permits and Leases	• Acres of lands with wilderness characteristics not managed to protect wilderness character as a priority • Acres of lands with wilderness characteristics that would be open to ROW authorizations
Disposal of lands with wilderness characteristics could decrease naturalness and reduce outstanding opportunities for solitude or primitive and unconfined types of recreation.	• Lands with Wilderness Characteristics Decisions • Disposals	• Acres of lands with wilderness characteristics managed to protect wilderness character as a priority • Acres of lands with wilderness characteristics that would be available for disposal

Table 3.2.13-2: Summary of Impacts to Lands with Wilderness Characteristics by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres of lands with wilderness characteristics managed to protect wilderness character as a priority	0 acres	277,489 acres (2%)[1]	0 acres	0 acres
Acres of lands with wilderness characteristics that would be open to mineral location and entry within areas of medium or high mineral potential	293,741 acres	194,139 acres (1%)[1]	557,017 acres (4%)[1]	557,017 acres (4%)[1]
Acres of lands with wilderness characteristics that would be open to ROW authorizations	No current ROW management	3,147,035 acres (23%)[1]	5,776,537 acres (43%)[1]	8,164,273 acres (61%)[1]
Acres of lands with wilderness characteristics that would be available for exchange	None identified	274,461 acres (2%)[1]	289,043 acres (2%)[1]	375,932 acres (disposal or exchange) (3%)[1]
Acres of lands with wilderness characteristics land managed as VRM Class III and IV	0 acres	5,631,380 acres (42%)[1]	10,597,079 acres (79%)[1]	12,652,077 acres (94%)[1]
Acres of lands with wilderness characteristics open for wind energy development in areas with “Good” resource potential or higher	No current management	463,184 acres (3%)[1]	463,184 acres (3%)[1]	463,184 acres (3%)[1]

Notes:
1) Percentage based on all lands inventoried as lands with wilderness characteristics in the planning area.

Effects from Alternative A

Under Alternative A, the BLM would not specifically manage lands to protect wilderness characteristics. Development, including mining and timber harvest, on or adjacent to lands with wilderness characteristics would decrease naturalness and opportunities for solitude and primitive recreation due to increased surface disturbance, increased human presence and infrastructure, noise, and introduction of additional access routes to natural resources. OHV and other surface-disturbing vehicle use on lands with wilderness characteristics, including from wildland fire management activities, recreation, or other overland travel, could impact naturalness and opportunities for solitude and primitive recreation due to potential increase in human and vehicle presence, noise, soil compaction, and vegetation trampling. Vehicle impacts could last 20 to 50 years after the activity ceases, and impacts from development projects could persist for decades after the activity ceases, depending on the level of reclamation that is performed.

Effects Common to All Action Alternatives

Under all the action alternatives, the planning area would be designated "Limited." The specific management prescriptions within the "Limited" designation (e.g., vehicle weight, vehicle width) would be developed as part of a travel and transportation plan that would be completed by the BLM subsequent to this RMP. Impacts to naturalness on lands with wilderness characteristics from the action alternatives could be reduced compared to Alternative A by limiting vehicle use to smaller, lighter, and quieter vehicles than are currently used, which would reduce soil compaction, vegetation trampling, and noise compared to existing conditions.

Linear projects would be co-located within existing ROW to the maximum extent possible under all the action alternatives. Co-location would reduce impacts to the naturalness of lands with wilderness characteristics by reducing further surface disturbance. Under all the action alternatives, no permits or leases would be granted for private recreational cabins, and existing trespass cabins would be removed, permitted, or turned into government administrative sites. Prohibiting new cabins and removing existing trespass cabins could enhance opportunities for solitude and primitive recreation on lands with wilderness characteristics. Under all action alternatives, range improvements such as line cabins, corrals, and water improvements would be allowed, except in areas managed as NSO for permanent structures associated with surface-disturbing activities.

Effects from climate change on lands with wilderness characteristic would generally be the same for all alternatives, including Alternative A. The warming trend experienced over the last 50 years has not been shown to be a cause in altering the quality of wilderness character in any regions of the planning area.

Effects from Alternative B

Under Alternative B, 277,489 acres (about 2 percent) of the planning area would be managed to protect wilderness characteristics as a priority over other resource values and multiple uses. Wildland fire management would be implemented without OHVs, heavy equipment, or other surface-disturbing vehicles and would be managed consistent with BLM Manual 6340 (BLM 2012b) or subsequent guidance to avoid and minimize impacts to wilderness characteristics. Wildland fire management would result in impacts similar to Alternative A, but to a lesser extent due to the prohibition of use of certain types of equipment that would result in greater noise and vegetation impacts.

Under Alternative B, 194,139 acres of lands with wilderness characteristics would be open to mineral development in areas with medium or high LMP and could incur impacts to naturalness, solitude, and opportunities for primitive recreation from mineral development (Table 3.2.13-2).

Development within new ROW on or adjacent to lands with wilderness characteristics could result in impacts to naturalness and opportunities for solitude and primitive recreation due to additional surface disturbance, noise, and human development and activity. Lands managed for wilderness characteristics as a priority would be ROW avoidance areas under Alternative B, and there would be additional ROW avoidance areas as well as ROW exclusion areas for reducing impacts to other resources. Taking these areas into account, there would be a total of 3,147,035 acres (about 23 percent of BLM land in the planning area) of lands with wilderness characteristics under Alternative B open to new ROW, less than for Alternatives C and D. There would be 463,184 acres of lands with wilderness characteristics (about 3 percent of BLM land in the planning area) open for wind energy development in areas with "Good" (level 4) resource potential or higher. Wind energy development would affect naturalness by introducing industrial energy facilities into an otherwise natural landscape.

Under Alternative B, lands managed to protect wilderness characteristics as a priority would not be considered for disposal; however, 274,461 acres of lands with wilderness characteristics would be available for exchange under Alternative B (lands where wilderness characteristics were not managed as a priority), which could decrease naturalness and reduce outstanding opportunities for solitude or primitive and unconfined types of recreation in those areas.

Under Alternative B, there would be 5,631,381 acres (42 percent of the planning area) of lands with wilderness characteristics managed as VRM Class III and IV. Facility construction would be limited to facilities that are consistent with the long-term management and preservation of wilderness characteristics. Therefore, under Alternative B, most of the planning area would have at least some management that would minimize impacts on wilderness characteristics.

Effects from Alternative C

Under Alternative C, the BLM would not specifically manage lands to protect wilderness characteristics as a priority. Alternative C would provide some management that would avoid or minimize impacts on wilderness characteristics compared to Alternatives A and D. Alternative C would have greater potential impacts to naturalness and opportunities for solitude and primitive recreation than Alternative B.

Under Alternative C, all ANCSA 17(d)(1) withdrawals would be revoked, removing existing management for lands with wilderness characteristics covered under these withdrawals from locatable and salable mineral location and entry and other uses. Under Alternative C, 557,017 acres of lands with wilderness characteristics would be open to mineral development in areas of medium or high LMP. Development of locatable and salable minerals on or adjacent to lands with wilderness characteristics would decrease naturalness and opportunities for solitude and primitive recreation due to increased surface disturbance, increased human presence and development, noise, and development of additional access to mineral development sites.

Under Alternative C, 5,776,537 acres of lands with wilderness characteristics (about 43 percent of BLM land in the planning area) would be open to ROW, and the majority of lands with wilderness

characteristics would be open to structure construction. New ROW, leases, permits, or energy development on or adjacent to lands with wilderness characteristics could result in the degradation of wilderness characteristics depending on the resulting development.

Under Alternative C, 289,043 acres of lands with wilderness characteristics (about 2 percent of BLM land in the planning area) would be available for exchange. Impacts to lands with wilderness characteristics from exchange would be the same for Alternative C as for Alternative B. Under Alternative C, the same acreage of lands with wilderness characteristics would be open to wind energy development and would result in the same impacts described under Alternative B.

Land development has the greatest potential to increase landscape disturbance and therefore impact naturalness. Under Alternative C, there would be no VRM management prescriptions for lands with wilderness characteristics. Although 2,776,363 acres of lands with wilderness characteristics would be managed as VRM Class II under Alternative C, the majority of the lands with wilderness characteristics under Alternative C (10,597,079 acres; 79 percent) would be managed as VRM Class III and IV, which allows for moderate to high changes to the characteristic landscape. Naturalness would have the potential to be impacted considerably more under Alternative C when compared to Alternative B.

Under Alternative C, the BLM would allow communication sites in strategic locations along inter-village winter travel route corridors to improve communication and safety. The types of impacts to lands with wilderness characteristics under Alternative C would be the same as those described under Alternative A; actual impacts to naturalness and opportunities for solitude would depend on the location of communication sites relative to lands with wilderness characteristics.

Effects from Alternative D

Under Alternative D, the BLM would not specifically manage lands to protect wilderness characteristics. All ANCSA 17(d)(1) withdrawals would be revoked, removing existing protection for all lands with wilderness characteristics covered under these withdrawals from locatable and salable mineral location and entry and other uses. Under Alternative D, 557,017 acres of lands with wilderness characteristics would be open to locatable mineral location and entry in areas with medium or high LMP; none would be withdrawn. The type of impacts to lands with wilderness characteristics from locatable and salable mineral development would be the same as those described for Alternative C and to the same geographic extent.

Under Alternative D, 8,164,273 acres of lands with wilderness characteristics would be open to new ROW, 375,932 acres (about 3 percent of BLM land in the planning area) would be available for disposal or exchange, and most of the lands with wilderness characteristics would be open to structure construction. The potential for degradation of wilderness characteristics due to new development within the planning area under Alternative D would result in the same types of impacts to lands with wilderness characteristics as for Alternative A. There would be no restrictions on wind development. However, as with Alternatives B and C, 463,184 acres of lands with wilderness characteristics (about 3 percent of BLM land in the planning area) under Alternative D would be open for wind energy development in areas with “Good” (level 4) resource potential or higher. Therefore, Alternative D would have the same potential for impacts to wilderness characteristics from wind development as Alternatives B and C.

Under Alternative D, there would be no VRM management prescriptions for lands with wilderness characteristics. The majority (95 percent) lands with wilderness characteristics under Alternative D would be managed as VRM Class III and Class IV (12,652,077 acres), with only 721,365 acres of lands with

wilderness characteristics managed as VRM Class II. Naturalness would have the potential to be impacted considerably more under Alternative D when compared to Alternatives B and C because more acreage of lands with wilderness characteristics would be managed as VRM Class IV, under which development has the potential to result in a high level of change to the characteristic landscape and therefore impact naturalness to a greater extent.

Impacts to naturalness and opportunities for solitude and primitive recreation from noise, human presence, soil compaction, and vegetation trampling would likely be greater under Alternative D, compared to Alternatives B and C.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

The lack of development and access to the planning area has limited impacts to wilderness characteristics on BLM-managed lands in the planning area, resulting in almost the entire planning acreage possessing wilderness characteristics. **Trend: Stabilized.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Trends of increased development, including mining and timber harvest, on or adjacent to lands with wilderness characteristics could affect naturalness and opportunities for solitude and primitive recreation. Reasonably foreseeable future actions include the Donlin Gold Project, other potential mineral development, access road development, and potential for new energy development, which would reduce acreage of lands with wilderness characteristics due to a lack of management of wilderness characteristics. **Trend: Resource condition would degrade.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Trends of increased development could affect naturalness and opportunities for solitude and primitive recreation. Reasonably foreseeable future actions include the Donlin Gold Project, other potential mineral development, access road development, and potential for new energy development, which would reduce acreage of lands with wilderness characteristics. However, under this alternative, a portion of the planning area would be managed for wilderness characteristics, and the acreage of lands with wilderness characteristics open to various forms of development would be less than other alternatives. **Trend: Resource condition would degrade but at a lesser rate than Alternative A.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

Trends of increased development could affect naturalness and opportunities for solitude and primitive recreation. Reasonably foreseeable future actions include the Donlin Gold Project, other potential mineral development, access road development, and potential for new energy development, which would reduce acreage of lands with wilderness characteristics due to an increase in lands open to various forms of development; however, management prescriptions would minimize impacts to lands with wilderness characteristics over most of the planning area. **Trend: Resource condition would degrade but at a lesser rate than Alternatives A and D and greater rate than Alternative B.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

Trends of increased development could affect naturalness and opportunities for solitude and primitive recreation. Reasonably foreseeable future actions include the Donlin Gold Project, other potential mineral development, access road development, and potential for new energy development, which would reduce acreage of lands with wilderness characteristics due to the lack of management of wilderness characteristics and increase in lands open to various forms of development. **Trend: Resource condition would degrade but at a lesser rate than Alternative A and greater rate than Alternatives B and C.**

3.3 Resource Uses

3.3.1 Forestry and Woodland Products

Affected Environment

Of the approximately one quarter of Interior Alaska covered by forest, 7 percent could be considered commercial forest (forests capable of producing a minimum of 20 cubic feet of industrial wood per acre annually per Hutchison 1967). Commercial stands are typically a mix of white spruce (*Picea glauca*), paper birch (*Betula neoalaskana*), aspen (*Populus tremuloides*), and balsam poplar (*Populus balsamifera*). Productivity ranges from 3 to 18 cubic feet per acre (BLM 2015e). Limited historical forest inventory data are available to quantify the extent of commercial timber, although recently completed inventories have started to include more detailed forestry data suitable for quantifying commercial use. Spruce beetle (*Dendroctonus rufipennis*) infestations were documented in the late 1990s and early 2000s, and impacted forest cover primarily in the Kenai Peninsula (ADNR 2018b; USDA Forest Service 2018). Current and prior outbreaks have been attributed to warming winters that allow the species to overwinter increasing population size. Prior outbreaks resulted in an increase in the firewood industry from the increase in product resources from diseased trees. Current outbreaks would be expected to have similar effects on forest resources.

Subsistence

Indigenous peoples have used forest resources to meet subsistence needs, including food, heat, and shelter. Products include roots, seeds, cones, mosses, mushrooms, edibles, medicinals, feed, forage, floral, boughs, transplants, ornamentals, burls, saplings, branches, logs, and timbers. Subsistence use has been mainly wood harvest for fuel and shelter construction, as well as building materials for fish-drying racks, fish wheels, smoke houses, sweat houses and dog sleds. Firewood (driftwood) has been collected along the coast and inland rivers. Berries continue to provide a major subsistence dietary staple.

Location and level of subsistence use are impacted by accessibility. Most subsistence use is within accessible State- and Native-selected lands near communities along major waterways. After land conveyance, less subsistence gathering occurred on BLM-managed public lands. All forest lands are currently open to subsistence harvest except crucial wildlife habitat and the eight RNAs within the CYRMP decision area. Free-use permits are not currently issued for subsistence use. Use is expected to continue in lands near communities under conveyance to ANCSA village corporations. Unregulated harvest quantity is not known but likely equivalent to or greater than the amount harvested under permit (BLM 2015e).

Commercial

Location and use level are impacted by accessibility and commercial vegetation type availability. Several portable sawmills are located in local communities, intermittently producing rough lumber for limited local demand. Between 1965 and 1968, 19 sales containing 897 thousand board-feet of timber (MBF) occurred in the Kuskokwim drainage (BLM 2015e). Additionally, 14 free-use permits containing 83 MBF were issued. BLM also made a sale of 311 MBF of white spruce located about 18 miles above Stony River with a local sawmill operator (Hegg and Sieverding 1979).

BLM has received limited commercial timber requests over the past 10 years. Nelson Brothers Enterprises, located in Chuathbaluk on the Kuskokwim River, operated a small commercial sawmill serving the local and downriver markets for rough-milled lumber from the 1970s until around 2007. In 2017, Napaimute Logging purchased the mill and moved it to near Lower Kalskag. Future operations could include wood from BLM-managed lands. In 2013, the village of Napaimute requested a timber sale from BLM but postponed the purchase until more accessible wood was harvested. The village has a 1,000-cord-per-year contract to deliver firewood to Bethel to pay for its wood harvesting machinery. With the purchase and restart of the sawmill, Napaimute Logging intends to begin delivering house packages as well as firewood further west in the basin.

Direct and Indirect Effects

Table 3.3.1-1 below summarizes the nature and types of beneficial or adverse effects that could occur to forestry and woodland products, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.3.1-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives.

Table 3.3.1-1: Summary of Effects to Forestry and Woodland Products by Management Action

Types of Effects	Management Actions	Indicators
Limiting or prohibiting OHV use could limit access to forest and woodland products.	• Travel and Transportation Management Decisions	• Acres that are available and accessible for commercial woodland harvest • Acres that are available and accessible for subsistence and casual use gathering
Limiting or prohibiting commercial woodland or personal and subsistence use harvest in specific areas for management of other resources or special designation areas (e.g., HVWs, flood zones of perennial streams, riparian areas, VRM Class I and II, WSR corridors, ACECs, lands managed for wilderness characteristics as a priority, and INHT NTMC) could limit the area available for harvest and/or result in restrictions on the method, timing, or location of harvest.	• Commercial Woodland Harvest Areas • Personal Use and Subsistence Woodland Harvest Areas • Woodland Harvest in HVWs • Woodland Harvest in the INHT NTMC • Woodland Harvest in ACECs	• Acres that are available and accessible for commercial woodland harvest • Acres that are available and accessible for subsistence and casual use gathering
Vegetation management to maintain natural variation could result in enhanced or maintained conditions in forest and woodland habitat but could restrict future timber harvest.	• Vegetation Management Decisions	• Changes to vegetation cover types for species with commercial or subsistence use value
Fish and wildlife management decisions would include seasonal limitations on disturbance and vegetation clearing, which would result in seasonal, site-specific limits on forest product harvest.	• Wildlife Management Decisions	• Acres that are available and accessible for commercial woodland harvest • Acres that are available and accessible for subsistence and casual use gathering
Commercial woodland harvest management decisions and management decisions on subsistence and casual use gathering would limit the area in which the harvest would occur.	• Commercial Woodland Harvest Areas • Personal Use and Subsistence Woodland Harvest Areas	• Acres that are available and accessible for commercial woodland harvest • Acres that are available and accessible for subsistence and casual use gathering

Table 3.3.1-2: Summary of Impacts to Forestry and Woodland Products by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres that are available and accessible for commercial woodland harvest	• 1,644,588 acres (12%)[1] open • 10,237,555 acres (76%)[1] open case-by-case • No limitations in HVWs • No setback from SSS flora populations • Limitation around ACEC nesting sites • Limitations around VRM Class I, Unalakleet River areas • No limitations in lands with wilderness characteristics • Limitations in 1,583,751 acres (12%)[1] of RNAs and crucial wildlife habitat • 1,596,496 acres (12%)[1] of ACECs unavailable, 301,470 acres (2%)[1] of ACECs available on case-by-case basis • Site-specific limitations on INHT NTMC • No limitation specific to WSRs • 1,897,966 acres (14%)[1] in ACECs restricted for community management • No travel management restrictions, access to resources would be maintained	• 5,017,161 acres (37%)[1] open • 29,829 acres (<1%)[1] open case-by-case • 100-year floodplains of 21,382 RMs within HVWs unavailable • 300-foot setback from SSS flora populations • Timing and surface use limitations in and around migratory bird habitat and nests • 5,033,594 acres (37%)[1] open to commercial harvest limited by VRM Class I or II • 12,290 acres (<1%)[1] open to commercial harvest case-by-case limited by VRM Class I or II • 277,489 acres (2%)[1] unavailable due to lands with wilderness characteristics as a priority • 3,912,693 acres (29%)[1] of ACECs unavailable • INHT NTMC unavailable to commercial woodland harvest • 46,953 acres (<1%)[1] of WSR unavailable	• 9,811,727 acres (73%)[1] open • 3,607,214 acres (27%)[1] open case-by-case • 100-foot setback from SSS flora populations • Short-term site-specific limitations in and around nesting sites • 1,404,616 acres (10%)[1] open to commercial harvest limited by VRM Class I or II • 1,361,611 acres (10%)[1] open to commercial harvest case-by-case limited by VRM Class I or II • 8,105,979 acres (60%)[1] of managed for multiple uses but to reduce impacts on lands with wilderness characteristics • INHT NTMC commercial woodland harvest permitted on case-by-case basis • 46,953 acres (<1%)[1] of WSR unavailable	• 13,423,449 acres (>99%)[1] open • 42,445 acres (<1%)[1] open case-by-case • Avoidance, minimization, or avoidance measures to minimize impacts on SSS species would be determined on a case-by-case basis • Limitations in and around nesting sites determined on case-by-case basis • 725,262 acres (5%)[1] open to commercial harvest limited by VRM Class I or II • 1,234 acres (<1%)[1] open to commercial harvest case-by-case limited by VRM Class II • No limitations in lands with wilderness characteristics • INHT NTMC available for commercial woodland harvest • No acres unavailable in WSR or WSR corridor

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres that are available and accessible for subsistence and casual use gathering	• No HVW restriction on harvest • All 13,465,894 acres would be available on a case-by-case basis for subsistence and casual uses, allowing for continued access for house log and fuel wood harvesting • OHV use prohibited on 46,953 acres (1%)[1] • 1,897,966 acres (14%)[1] of ACECs open for subsistence and casual uses with a permit on case-by-case basis	• Casual use and subsistence woodland harvest would be allowed in HVWs through a permit, but house log harvesting would not be allowed in the riparian zone of perennial streams • 9,332,481 acres (69%)[1] unavailable for non-subsistence house log harvest • 12,899,939 acres (96%)[1] available for OHV travel with casual use limits, 324,443 acres (2%)[1] available with subsistence use limits; casual OHV use prohibited on 565,955 acres (4%)[1] and subsistence OHV use prohibited on 241,512 acres (2%)[1] • 46,953 acres (<1%)[1] of WSR and 332,176 acres (2%)[1] of WSR corridor unavailable for harvest house logs for non-subsistence use	• Subsistence use gathering of forest firewood and forestry products in HVW would not require a permit, but house log harvesting would not be allowed in the riparian zone of perennial streams • 3,044,073 acres (23%)[1] unavailable for non-subsistence house log harvest • 13,239,969 acres (98%)[1] available for OHV travel with casual use limits, 363 acres (<1%)[1] available with subsistence use limits, and casual OHV use prohibited on 225,925 acres (2%)[1] and subsistence OHV use prohibited on 225,925 acres (2%)[1] • 46,953 acres (<1%)[1] of WSR unavailable for harvest house logs for non-subsistence use	• Subsistence use gathering of forest firewood and forestry products in HVW would not require a permit and house log harvesting would be allowed in the riparian zone of perennial streams • No permit required for personal and subsistence use • OHV travel limited to existing routes within 46,953 acres (<1%)[1] for casual use and within 225,925 acres (2%)[1] for subsistence use, no closures for subsistence OHV use • 46,953 acres (<1%)[1] of WSR unavailable for harvest house logs for non-subsistence use
Changes to vegetation cover types for species with commercial or subsistence use value	Provide for sustainable yields	Prioritized removal of vegetation communities to maintain successional states	Same as Alternative B	Same as Alternative B

Note:
1) Percentage is based on all BLM-managed lands in the planning area.

Effects from Alternative A

Under Alternative A, commercial harvesting of forestry and woodland products would be permitted in 1,644,588 acres (12 percent of the planning area) and permitted on a case-by-case basis in 10,237,555 acres (76 percent of the planning area). Commercial woodland harvest would be limited in specific areas (Table 3.3.1-2), such as ACECs, VRM Class I areas, RNAs, and crucial wildlife habitat. These management prescriptions that would limit the availability of forestry and woodland products are generally less extensive than under Alternative B but are, in general, greater than under Alternatives C and D. Limitations are lacking for HVWs, lands with wilderness characteristics, and WSRs, and there would be no travel and transportation management actions specified to limit access to resources.

The entire planning area would be available for subsistence and casual uses on a case-by-case basis, allowing for continued access for house log and fuel wood harvesting. In addition, there would be no specific limits on OHV use, permitting access to resources.

Under Alternative A, management objectives would be to provide for sustainable yields of resources for use as firewood, house logs, poles, and other forest products and to maximize the opportunities for the harvest of forest products to support continued access to forest product harvest for commercial, subsistence, and casual uses.

Effects Common to All Action Alternatives

Under all action alternatives, there would be prioritized removal of vegetation communities to maintain successional states. This prioritization could result in site-specific limitations on commercial, subsistence, or casual use forest harvest or the need for long-term maintenance of forested vegetation types.

In addition, the Unalakleet Wild River Corridor (46,953 acres) would be unavailable for forestry and woodland use, which would result in site-specific limits on availability of commercial and subsistence use products.

Effects from Alternative B

Under Alternative B, commercial harvesting of forestry and woodland products would be permitted in 5,017,161 acres (37 percent of the planning area) and permitted on a case-by-case basis in 29,829 acres (less than 1 percent of the planning area). Commercial woodland harvest would be limited in specific areas (Table 3.3.1-2), such as 100-year floodplains within HVWs, riparian zones of perennial streams, lands where wilderness characteristics are managed as a priority, ACECs, the INHT NTMC, WSRs, nest sites, and lands designated VRM Class I and II, and by managing acres available and accessible for subsistence and casual use gathering. Restrictions would result in greatest acreage of limitations to commercial forest and woodland products of any alternatives.

For subsistence and casual use, increased restrictions on harvest, including permit requirements, would apply over Alternative A for riparian zones of perennial streams, ACECs, and WSRs. Additional acres (Table 3.3.1-2) would be specifically unavailable for non-subsistence house log harvest limiting access for this use. OHV restrictions would impact access, with acres varying for specific use (Table 3.3.1-2).

These management actions would limit the availability and accessibility of forestry and woodland products and are generally more extensive than under Alternatives A, C, and D.

Effects from Alternative C

Under Alternative C, commercial harvesting of forestry and woodland products would be permitted in 9,811,727 acres (73 percent of the planning area) and permitted on a case-by-case basis in 3,607,214 acres (27 percent of the planning area). Areas open on a case-by-case basis would include the INHT and HVWs. Commercial woodland harvest would not be allowed in the Unalakleet Wild River Corridor and in lands designated VRM Class I and II if the action is not consistent with VRM Class I and II objectives. Managing areas available and accessible for subsistence and casual use gathering could conflict with commercial woodland harvest activity. Acres with commercial woodland harvest limitations would be substantially reduced as compared to Alternative B, with 8,371,951 fewer acres closed to commercial woodland harvest.

For subsistence and casual use, increased restrictions on harvest, including permit requirements, would apply for riparian zones of perennial streams and WSRs, although to a lesser degree than under Alternative B. OHV restrictions would be less than for Alternative B but would result in some limits to access to resources as noted for commercial harvest activities.

These management actions would limit the availability of forestry and woodland products and are generally more extensive under Alternative C than under Alternative D.

Effects from Alternative D

Under Alternative D, commercial harvesting of forestry and woodland products would be permitted in 13,423,449 acres (over 99 percent of the planning area) and permitted on a case-by-case basis in 42,445 acres (less than 1 percent of the planning area). There would be no areas closed to commercial woodland harvest. There would be no limitations in riparian zones of perennial streams, lands with wilderness characteristics, WSRs, or the INHT NTMC, and restrictions around SSS would include flexibility of implementation. Alternative D would have the most acreage available and accessible to harvest of all the action alternatives.

Most of the planning area would also be available and accessible for subsistence and casual use gathering (Table 3.3.1-2). No permits would be required for personal and subsistence use, and limited OHV restrictions would apply.

These management actions could result in site-specific limits on the availability of forestry and woodland products, but impacts would be reduced in scale as compared with Alternatives A, B, and C.

Cumulative Effects

Under Alternative A, the rate of replacement of spruce trees with hardwoods would increase due to climate change. Under Alternatives B, C, and D, the rate of replacement of spruce trees with hardwoods due to climate change would be monitored and reduced.

Trends and Forecasts: Past and Present Actions

It is estimated that 25 percent of Interior Alaska is covered by low-to-moderate productivity non-commercial forest, which includes 7 percent commercial forest. Most of the subsistence activity in the planning area has been the harvesting of wood for fuel and shelter construction. There have been limited commercial timber requests since approximately 2008 that have intermittently produced lumber to satisfy small, local demand. Demand for small commercial sales for firewood, biomass, or local building use could increase slightly due to the recent availability of a mechanical harvester/processor in the Kuskokwim Basin. The greatest potential for wood use and forest management on BLM-managed land in the planning area in remote Alaska is biomass, though demand remains minimal. With rising fuel costs, demand for biomass fuel could increase in the future. **Trend: Demand increasing at slow rate.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Under Alternative A, the BLM would continue to permit the harvest of forest products under sustained yields, contributing to resource trends for continued or locally increased use. Future demand for woodland products would likely remain low. **Trend: Continued increase use at a similar rate.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Under Alternative B, increased restrictions on commercial and subsistence harvest could provide minor cumulative contributions that would counter existing trends for continued or locally increased demand for certain forest products for biomass or firewood use. However, based on anticipated demand, levels of use are likely to remain low and cumulative contributions limited to a local basis. **Trend: Existing trend would be countered, and demand would decrease.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

Under Alternative C, increased restrictions on commercial and subsistence harvest could provide minor cumulative contributions that would counter existing trends for continued or locally increased demand for certain forest products for biomass or firewood use. However, based on anticipated demand, levels of use are likely to remain low and cumulative contributions limited to a local basis. **Trend: Existing trend would be countered, and demand would decrease.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

Under Alternative D, BLM management would result in the lowest level of restrictions on woodland harvest, which would provide minor cumulative contributions to resource trends by allowing continued or increased levels of harvest. However, based on anticipated demand, levels of use are likely to remain low and cumulative contributions limited to a local basis. **Trend: Existing trend would continue to increase at a similar or slightly higher rate.**

3.3.2 Grazing

Alaska reindeer (also known as Chukotkan reindeer), are a subspecies of domesticated caribou introduced to the Seward Peninsula from Russia in 1891 to provide Alaska Natives economic development through an animal production system with a predictable red meat supply (Stern et al. 1980). Through domestication and selective breeding, reindeer and caribou have unique physical and behavioral differences. Both exhibit seasonal grazing patterns, but reindeer remain mostly within an established home range (UAF RRP 2016).

Location and extent of historical reindeer operations are not well known. Several herds (one over 6,000 head) are located outside of BLM-managed land in the St. Michaels and Stebbins vicinity, grazing primarily on Native corporation land. Grazing also occurs on the Seward Peninsula and on St. Lawrence and Nunivak Islands, including on some BLM-managed lands. Reindeer are normally free roaming with fencing only needed for corralling structures. Herds are moved by herders on foot or with aircraft and OHVs.

There is one valid permitted grazing range in the planning area, located in the Sagoonick area (see Map 3.3.2-1). The herd left the area with caribou migrations in the 1990s, leaving the range empty. Unauthorized reindeer grazing operations or presence are not known.

From Seward Peninsula data, reindeer spring diet (April-May) is primarily lichens, followed by mosses, sedges, and shrubs. Summer (June-July) diet includes more willows and sedges, plus lichens. Fall and winter diet shifts back towards primarily lichen (Finstad 2008). Winter lichen ranges usually have lichen cover greater than 20 percent (NRCS 2001). Lichen species consumed by reindeer include various *Cladina, Cladonia,* and *Cetraria* species, which grow slowly, even under favorable conditions, approximately 5 millimeters per year (Pegau 1970).

Ongoing rangeland health is measured by Alaska-specific range utilization checks developed by NRCS and BLM (NRCS 2001) to evaluate forage utilization on reindeer ranges in Alaska. The AGCM is applied to measure lichen cover and utilization to: (1) develop grazing management plans, and (2) to maintain sustained forage production systems. Past studies identified prime reindeer grazing habitat in the Nulato Hills and surrounding area, with rich lichen resources and suitable seasonal habitat. These data, assessed in conjunction with recent vegetation mapping, could help determine suitable grazing habitat (see Maps 3.3.2-2 and 3.3.2-3).

BLM is involved with a collaborative effort for monitoring grazing exclosures on BLM-managed public lands within active reindeer ranges of the Seward Peninsula. These monitoring programs determine percent lichen cover and estimate vegetative recovery and changes in community composition (Moore 2011). No such monitoring currently exists in the planning area.

The impacts of climate change could have indirect or direct impacts on resources tied to grazing use, such as impacts of changes in wildland fire frequency, location, timing, or severity; acres of permafrost or snow and ice cover change; or changes in vegetation community composition or increases in NNIS. Future monitoring could include more comprehensive coverage of various land use types or land cover types that may be identified as vulnerable to change.

Direct and Indirect Effects

Table 3.3.2-1 below summarizes the nature and types of beneficial or adverse effects that could occur to grazing, the proposed management actions that could result in those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.3.2-2 discloses the potential magnitude and extent of the effects described in Table 3.3.2-1, across alternatives.

Table 3.3.2-1: Summary of Effects to Grazing by Management Action

Types of Effects	Management Actions	Indicators
Reduction in suitable grazing habitat due to unauthorized use.	• Areas Open or Closed to Grazing	• Acres open to grazing; acres open to grazing that are considered suitable habitat.
Reduction in quality of forage for grazing if conditions are not monitored in areas of permitted use.	• Areas Open or Closed to Grazing	• Acres open to grazing that are considered suitable habitat; acres currently permitted; acres currently permitted that are considered suitable habitat.
Loss of grazing herds through interaction and competition with native caribou.	• Areas Open or Closed to Grazing	• Acres open to grazing; caribou avoidance acres.

Table 3.3.2-2: Summary of Impacts to Grazing by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres open to grazing	13,304,555 acres (99%)[1] open on a case-by-case basis	0 acres (0%)[1]	7,742,975 acres (58%)[1] open on a case-by-case basis	13,465,894 acres (100%)[1] open on a case-by-case basis
Acres open to grazing that are considered suitable habitat	2,619,960 acres (19%)[1]	Not applicable–planning area closed to grazing	1,565,761acres (12%)[1]	2,635,231 acres (20%)[1]
Closed until standards are developed	0 acres (0%)[1]	Not applicable–planning area closed to grazing	5,105,497 acres (38%)[1]	0 acres (0%)[1]
Acres currently permitted for grazing	10,807 acres (<1%)[1]	Not applicable	Not applicable	Not applicable
Acres currently permitted that are considered suitable habitat	4,281 acres (<1%)[1]; 40% of currently permitted area)	Not applicable	Not applicable	Not applicable

Notes:
1) Percentage based on all BLM-managed lands in the planning area.

Effects from Alternative A

Alternative A would maintain existing policy to provide grazing leases for domestic livestock, including reindeer and muskoxen where feasible, in areas where range is available and a need exists for seasonal grazing. The entire planning area is open for consideration of grazing permits. Demand for permits appears to be low and would be expected to remain so. The magnitude of impacts is low given that only one permit is currently valid, and the permit is not thought to be actively in use. The geographic extent of

impacts is currently restricted to locations within areas currently permitted (10,807 acres, or less than 1 percent of the planning area). Extent of impacts could include the entire planning area, which remains open to grazing.

Under Alternative A, adverse impacts could include a reduction in suitable grazing habitat if there is unauthorized use. Adverse impacts could also include a reduction in forage quality if conditions are not monitored; monitoring has occurred via BLM and NRCS but does not follow specific guidance tailored to effectively monitor and assess beneficial or adverse change. No avoidance measures are required for domestic livestock grazing, which could lead to adverse impacts to grazing herds that interact and compete with existing native caribou herds, causing competition between native and domestic livestock and even loss of grazing herds. Magnitude and geographic extent of impacts would be greater in this alternative than Alternative B, C, or D, as more areas are open to grazing with fewer limitations based on special designations or potential ecological impacts to forage.

Effects Common to All Action Alternatives

There would be no effects common to all action alternatives.

Effects from Alternative B

Alternative B would close all BLM-managed lands in the planning area to permitted grazing. This closure would result in lower adverse impacts than other alternatives, by (1) preventing any reduction in suitable grazing habitat by eliminating the possibility of potential unmonitored, ecologically degrading permitted grazing practices; (2) retaining quality of forage for native species by maintaining vegetation community ecology integrity and land health by eliminating the possibility of unmonitored, ecologically degrading permitted grazing practices; and (3) eliminating the possibility of permitted grazing herds interacting with native caribou, causing competition for resources or potential loss of grazing herds. The magnitude and extent of adverse impacts would be less in this alternative than Alternative A, C, or D.

Effects from Alternative C

Alternative C would allow permitting of grazing where ecological conditions can support that grazing (at least 20 percent lichen cover) and would close grazing in certain areas (special designation areas) and within HVWs until standards are developed for riparian vegetation health. The area closed to grazing until standards are developed would be 5,105,497 acres (38 percent of the planning area). In this alternative, 1,565,761 acres (12 percent of the planning area) are both open and considered suitable for grazing. For this alternative, grazing permits issued would consider ecological condition, including ecological suitability for grazing, to reduce the potential for adverse changes in vegetation composition, structure, or function. Alternative C could have adverse impacts (reduction in suitable grazing habitat, reduction in forage quality) that would be of greater magnitude and geographic extent than Alternative B but lesser than Alternative A or D. There would also be fewer adverse impacts to native caribou herds in this alternative compared to Alternative A or D since grazing permits in known caribou habitat would be issued on a case-by-case basis taking local conditions into account.

Effects from Alternative D

Alternative D would be similar to Alternative C, but with fewer closed areas. Of the area open to grazing, 2,635,231 acres (20 percent of the planning area) is considered ecologically suitable. As with Alternative C, grazing permits issued under Alternative D would consider ecological condition, including

ecological suitability for grazing, to reduce the potential for adverse changes in vegetation composition, structure, or function. Alternative D could have adverse impacts (reduction in suitable grazing habitat, reduction in forage quality, impacts to native caribou herds) that would be of lesser magnitude and geographic extent than Alternative A but greater than Alternative B or C.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Interest in reindeer permits within the planning area is increasing as rural communities seek long-term and sustainable industry to support economic welfare and to preserve rural Alaska lifestyle, culture, and tradition. However, lack of infrastructure (roads and utilities) in the planning area continues to limit the feasibility of commercial grazing operations. **Trend: No change.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Many past, present, and reasonably foreseeable future actions work together to result in the land status, vegetation community composition, and community motivation to apply for grazing permits in the planning area. The rate of change would be constant with typical and anticipated ecological, climate, and socioeconomic factors. Other factors that influence grazing would continue at the current rate, insofar as needs arise.

Potential transportation corridors under review could provide more opportunity for access to lands open to grazing. As climate change increases, it is likely that more vegetation community type changes would occur in the planning area that could cause direct impacts to lichen, shrub, grass, or plant composition. Changes in vegetation composition could raise or lower forage quality for grazing.

Because management would result in the majority of the planning area open to grazing, it is expected that the demand for grazing permits, considering combined past, present, and reasonably foreseeable actions, would remain the same. **Trend: No contribution to the trend.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Management under Alternative B would close the entire planning area to grazing. **Trend: Decreasing applications for grazing permits.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternatives C and D)

Demand for grazing permits, considering combined past, present, and reasonably foreseeable actions, would be expected to remain the same. **Trend: No contribution to the trend.**

3.3.3 Locatable and Salable Minerals

Affected Environment

Locatable minerals are mineral resources for which the right to explore, develop, and extract is established by the staking of mining claims, as authorized under the General Mining Law of 1872. Locatable minerals include metallic minerals (e.g., gold, silver, platinum, copper, lead, and zinc) and non-metallic minerals, which include precious stones (e.g., jade, diamonds) and sometimes industrial minerals

(e.g., garnet, quartz sands). Salable minerals are those that may be sold under the Material Sale Act of 1947 and include sand and gravel.

Distribution of locatable mineral occurrences within the planning area is illustrated in Map 3.3.3-1 and is generally concentrated in the upland areas in the eastern portion of the planning area and the lowlands in the immediate vicinity of these uplands where placer[8] deposits occur. The planning area contains 453 documented mineral occurrences and 2,480 mining claims, with 207 of those under federal management. These include placer gold, gold-bearing quartz veins, copper-gold skarns, and silica-carbonate mercury deposits. As of December 2016, there are four active placer mines, one active lode[9] mine, and two temporary placer mine closures on BLM-managed public lands in the planning area. The number of active and temporarily closed mines changes annually.

Areas of high and medium LMP have been identified within the planning area (Appendix N; Map 3.3.3-3). Of the 101 areas designated as high LMP, several are located within BLM-managed lands and are covered by federal mining claims (Kurtak et al. 2017): the Nixon Fork Mine area, Flat-Chicken Mountain area, the Ophir Creek drainage (Kilbuck Mountains), and the NYAC (Shamrock Creek) area.

Salable mineral use within the planning area includes crushed rock, sand, and gravel. In 2008, a total of 13 salable mineral sites were reported to be active in Southwest Alaska, which includes the planning area (BLM 2008b; USGS 2008). Sand and gravel are used in construction and road maintenance, and local demand for salable materials is generally being met by sand and gravel producers located on private or State-owned lands.

Direct and Indirect Effects

Table 3.3.3-1 below summarizes the nature and types of beneficial or adverse effects that could occur to locatable and salable minerals, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.3.3-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives.

Table 3.3.3-1: Summary of Effects to Locatable and Salable Minerals by Management Action

Types of Effects	Management Actions	Indicators
Reduction of land available for mineral resource activities would result in a reduction of the quantity of minerals available for extraction.	• Locatable and Salable Mineral Decisions	• Acres of identified medium to high LMP in the planning area • Acres available for locatable and salable mineral development in the planning area
Changing the requirements for mining operations to qualify would reduce the number of qualified applicants to use the Alaska Statewide Bond Pool.	• Locatable and Salable Mineral Decisions	• Number of operations able to maintain compliance without the assistance of the Alaska Statewide Bond Pool for reclamation

[8] Placer deposits are accumulations of valuable minerals concentrated in overburden, instream sediments, or in beach materials by natural processes.
[9] Lode is a deposit of metalliferous ore that fills or is embedded in a fissure (or crack) in a rock formation or a vein of ore that is deposited or embedded between layers of rock.

Table 3.3.3-2: Summary of Impacts to Locatable and Salable Minerals by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres of land open to locatable mineral entry in the planning area	8,661,406 acres (64%)[1]	3,623,397 acres (27%)[1]	13,418,941 acres (>99%)[1]	13,418,941 acres (>99%)[1]
Acres of land withdrawn from locatable mineral entry in the planning area	4,804,488 acres (36%)[1]	9,842,497 acres (73%)[1]	46,953 acres (<1%)[1]	46,953 acres (<1%)[1]
Areas open to locatable mineral development in areas identified to have medium to high LMP in the planning area	• 258,015 acres of medium LMP (49%)[2] • 36,310 acres of high LMP (85%)[3]	• 185,578 acres of medium LMP (35%)[2] • 17,032 acres of high LMP (40%)[3]	• 522,825 acres of medium LMP (100%)[2] • 42,663 acres of high LMP (100%)[3]	• 522,825 acres of medium LMP (100%)[2] • 42,663 acres of high LMP (100%)[3]
Acres of locatable mineral withdrawals in areas identified to have medium to high LMP in the planning area.	• 264,810 acres of medium LMP (51%)[2] • 6,354 acres of high LMP (49%)[3]	• 337,247 acres of medium LMP (65%)[2] • 25,631 acres of high LMP (60%)[3]	• 0 acres with either medium or high LMP (0%)	• 0 acres with either medium or high LMP (0%)
Acres of land open to salable mineral development in the planning area	8,661,406 acres (64%)[1]	3,623,397 acres (27%)[1]	6,645,750 acres (49%)[1]	13,182,385 acres (98%)[1]
Acres of land open to salable mineral development in the planning area on a case-by-case basis	0 acres	0 acres	6,536,635 acres (49%)[1]	0 acres
Acres of land of salable minerals in the planning area closed to development.	4,804,488 acres (36%)[1]	9,842,497 acres (73%)[1]	283,509 acres (2%)[1]	283,509 acres (2%)[1]
Number of operations able to maintain compliance without the assistance of the Alaska Statewide Bond Pool for reclamation.	No management direction related to the Alaska Statewide Bond Pool under Alternative A is currently identified.	Use of the Alaska Statewide Bond Pool would be restricted to operations that have a record of 5 or more years of successful reclamation of mined lands with no substantial compliance issues.	All Notice- and Plan-level placer operations meeting the criteria would be subject to the 2015 RCE IM (BLM 2015d). If not, the Alaska Statewide Bond Pool could be used.	All operations would have the option to use the Alaska Statewide Bond Pool unless excluded by the provisions in the BLM-ADNR Bond Pool Agreement.

Notes:
1) Percentage based on all BLM-managed land in the planning area.
2) Percentage based on all medium LMP areas on BLM-managed land in the planning area.
3) Percentage based on all high LMP areas on BLM-managed land in the planning area.

Effects from Alternative A

Under Alternative A, 4,804,488 acres of BLM-managed land in the planning area would remain withdrawn from locatable mineral entry and closed to salable mineral development. There are 271,164 acres with medium to high LMP withdrawn (2 percent of the BLM-managed planning area and 48 percent of medium and high LMP on BLM-managed land in the planning area), of which 6,354 acres are considered to have high LMP. Less than 1 percent of the planning area acreage is taken up by mining claims and prospecting sites.

No management direction related to the Alaska Statewide Bond Pool is currently identified.

The forecast for development of mineral resources in the planning area is low due to the lack of known economical deposits.

Effects Common to All Action Alternatives

The Unalakleet Wild River Corridor would remain designated under all action alternatives, and there would continue to be no locatable or salable mineral activity allowed within the 46,953-acre corridor.

Because the potential for locatable and salable mineral development on BLM-managed land in the planning area is considered low, the impact of management actions would be small. In areas such as the Nulato Hills, where there is little information about mineral potential, any management limitations would impact the potential for future exploration.

Reclamation in moose calving and wintering areas and caribou calving grounds and caribou wintering range following locatable and salable mineral development, as well as any other surface-disturbing activities, would adhere to the soil and vegetation reclamation and riparian and stream disturbance/reclamation and fisheries rehabilitation requirements described in Section 2.7.14 under "Actions Common to All Action Alternatives for Locatable and Salable Minerals."

There are currently no pending requests to develop sand and gravel on BLM-managed land in the planning area. Local demands are being met by sand and gravel producers on private or State-owned lands, causing low impacts that are unlikely to change soon due to lack of appropriate BLM-managed land in the planning area near population centers that require sand and gravel. With the recent signing of the Donlin Gold EIS ROD, increased demand for gravel adjacent to the proposed natural gas pipeline route is highly likely, which could result in a potential increase in resource-related impacts. Additionally, salable mineral development on BLM-managed lands could occur in association with other projects that require these resources.

Effects from Alternative B

Under Alternative B, management actions associated with other resources discussed in this section would result in the withdrawal of 9,842,497 acres from locatable mineral entry and closure to salable mineral development (existing withdrawals that would be retained, as well as new proposed withdrawals). These withdrawals would include HVWs (8,294,053 acres), the Innoko Bottoms Priority Wildlife Management Area (236,556 acres), North Connectivity Corridor (269,632 acres), South Connectivity Corridor (576,038 acres), potential ACECs (3,912,698 acres), the INHT NTMC (288,466 acres), and the Unalakleet Wild River Corridor (46,953 acres). Some of these areas overlap, so their sum does not equal the total area of proposed withdrawals under Alternative B. Mining would also be prohibited in riparian areas to minimize impacts to migratory birds.

Locatable mineral withdrawals would include 25,631 acres in areas with high LMP and 337,247 acres within medium LMP areas. This acreage equates to 8 percent of the medium or high LMP areas in the planning area but 64 percent of the medium or high LMP areas on the BLM-managed land in the planning area. Alternative B has the largest areas proposed for withdrawal for locatable mineral development and closed to salable mineral development, thereby leaving the fewest acres open to mineral development compared to all other alternatives. This would result in the greatest extent of impacts to mineral development opportunity compared to all other alternatives. However, because the potential for locatable and salable mineral development on BLM-managed land in the planning area is generally considered low, the impact of these management actions would be small, although they would reduce incentives to investigate lands for mineral potential and would cover some high LMP lands.

All existing and new mining operations would be bonded using an individual financial guarantee or other acceptable means as defined in 43 CFR 3809.500. Use of the Alaska Statewide Bond Pool would be restricted to operations that have a record of 5 or more years of successful reclamation of mined lands with no substantial compliance issues. Application of this requirement would be contingent on changes,

modification, or supersedence of the 2015 and 2016 Reclamation Instruction Manuals. Bonding type/action would remain fully at the discretion of the AO.

Effects from Alternative C

Under Alternative C, management actions associated with other resources discussed in this section would result in the withdrawal of 46,953 acres from locatable mineral entry, of which no acres with medium or high LMP would be withdrawn. Alternative C would also close 283,509 acres to salable mineral development in the BLM-managed land in the planning area. Locatable mineral withdrawals under Alternative C would include the Unalakleet Wild River Corridor (46,953 acres), which is common to all alternatives. HVWs (5,560,642 acres), the Innoko Bottoms Priority Wildlife Management Area (236,556 acres), the South Connectivity Corridor (576,038 acres), and the INHT NTMC (273,242 acres) would be open to locatable mineral development. Some of these areas overlap, so their sum does not equal the total area open to locatable mineral development under Alternative C. Alternative C would open 6,645,750 acres for salable mineral development, and another 6,536,635 acres would be open to salable mineral development on a case-by-case basis.

Because Alternative C would close fewer acres to locatable and salable mineral development and all areas of medium or high LMP would be open to development, Alternative C would have fewer impacts to locatable and salable mineral development opportunity in the area than Alternatives A and B. Some additional geological investigation to better assess mineral potential could be expected because the limited amount of mineral resource information contributes to the low mineral potential assessment. This additional geologic and mineral potential information would align with the DOI's goal of ensuring access to mineral resources (DOI 2018).

All Notice- and Plan-level placer operations that meet the criteria that would make them subject to the 2015 RCE IM (BLM 2015d) would comply with all conditions in the manual. Otherwise, the Alaska Statewide Bond Pool could be accepted in accordance with 43 CFR 3809 and the BLM-ADNR Bond Pool Agreement. Bonding type/action would remain fully at the discretion of the AO.

Effects from Alternative D

Under Alternative D, management actions would result in the withdrawal of 46,953 acres from locatable mineral entry, which is the same as Alternative C, and the closure of 283,509 acres to salable mineral development in the BLM-managed land in the planning area. All areas with medium or high LMP would be open. Locatable mineral withdrawals under Alternative D would be limited to the Unalakleet Wild River Corridor. Alternative D would have less impact to locatable and salable minerals compared to Alternative B and similar impacts to Alternative C although Alternative D would open 13,182,385 acres for salable mineral development. The same number of acres open to salable development either outright or on a case-by-case basis under Alternative C would be open for salable mineral development under Alternative D outright. Like Alternative C, some additional locatable mineral exploration could be expected. Therefore, Alternative D would have the fewest impacts to locatable and salable mineral development in the planning area although impacts would be similar to Alternative C.

All Notice- and Plan-level placer operations that meet the criteria that would make them subject to the 2015 RCE IM (BLM 2015d) would comply with all conditions in the manual. Otherwise, the Alaska Statewide Bond Pool could be accepted in accordance with 43 CFR 3809 and the BLM-ADNR Bond Pool Agreement. Bonding type/action would remain fully at the discretion of the AO.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Although some attempts at mining started as early as the 1830s, there was no widespread mining for many decades. Most of it is concentrated in upland areas and lowlands in the immediate vicinity of the uplands. The planning area contains 2,480 mining claims, of which 207 are under federal management. There are four active placer mines, one active lode mine, and two temporary placer mine closures on BLM-managed land in the planning area. **Trend for management: Continues at a similar rate.**

Most mining and mineral exploration in Alaska is taking place on lands owned by the State of Alaska, Native corporations, or other private lands. A total of 13 salable minerals production sites were reported to be active in 2008 in Southwest Alaska, which includes the planning area. There are currently no pending requests to develop sand and gravel on BLM-managed land in the planning area. **Trend for mineral development: Continues at a similar rate.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternatives A and B)

Less than 1 percent of the planning area acreage is taken up by mining claims and prospecting sites, and less than 1 percent of the total acreage taken up by mining claims and prospecting sites in the planning area is under federal management. Exploration and mining on non-BLM-managed land adjacent to BLM land could necessitate management decisions to prevent unnecessary disturbance to BLM-managed land in the planning area by ROW corridors, roads, and development on these adjacent lands. **Trend for management: Degrade (requires active management by federal agencies).**

Because most of the mining and mineral exploration is not taking place on federal lands and because of the lack of areas with high LMP on unencumbered BLM-managed land in the planning area, there is likely to be a low level of interest in staking claims or in developing mining operations on unencumbered BLM-managed land in the planning area for the reasonably foreseeable future. Local demands are being met by sand and gravel producers on private or State-owned lands, which is unlikely to change in the near future due to lack of appropriate BLM-managed land in the planning area near population centers that require sand and gravel. However, there is some potential for salable mineral development if needed to support projects outside population centers. **Trend for mineral development: No contribution to existing trend.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternatives C and D)

Mineral development would be very similar to Alternative A, although there could be a slight increase in staking claims or in developing mining operations with the small (approximately 6,000-acre) increase of high LMP lands as compared to Alternative A.

If more lands in the planning area were open to mineral entry, there could be expanded exploration and mapping of the mineral potential of unencumbered BLM land. Current understanding of the mineral potential of the BLM unencumbered land is low, but the potential for new mining claims and

development is moderate due to the potential for new unexplored lands being available. **Trend for mineral development: Potential to increase.**

3.3.4 Leasable Minerals

Affected Environment

Minerals and materials designated leasable under federal law include coal, natural gas, oil, phosphate, sodium, and geothermal resources. Coal and coalbed natural gas resources in the planning area are concentrated in the Lower Koyukuk and Minchumina Basins. The development potential for these resources is considered low due to the low grade of the coal, the high initial cost of production, and a lack of local infrastructure for storage and distribution (Map 3.3.4-1). Potential oil and gas bearing basins in the planning area include the Bethel Basin, Galena Basin, Holitna Basin, Innoko Basin, Minchumina Basin and the Yukon Delta (Map 3.3.4-2). There has been little interest or activity in oil and gas exploration in the planning area since the early 1960s. The presence of sufficiently large commercially valuable accumulations of oil and gas is presently unknown, and no recent federal oil and gas leasing has taken place in the planning area. There are only two confirmed geothermal springs within the planning area (Ophir Hot Springs and Chuilnuk Hot Springs), and both are located on private inholdings (Map 3.3.4-3). No major geothermal reservoirs exist elsewhere in the planning area. No information currently exists for oil shale, phosphate, potassium, sulfur, or sodium resources within the planning area.

Direct and Indirect Effects

All of the action alternatives would be subject to management actions to minimize impacts to HVWs from actions associated with the development of leasable minerals. Management actions vary among the action alternatives in minimizing impacts to caribou and moose calving and wintering areas, the Innoko Bottoms Priority Wildlife Habitat Area, connectivity corridors, and migratory birds from development activities associated with the development of leasable minerals.

Table 3.3.4-1 below summarizes the nature and types of effects that could occur to leasable materials, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects.

Table 3.3.4-2 summarizes the impacts to leasable minerals by indicator.

Table 3.3.4-1: Types of Effects to Leasable Minerals by Management Action

Types of Effects	Management Actions	Indicators
Preventing impacts to certain resources by closing lands to leasable mineral development could reduce the area available for leasable minerals exploration and development.	• Leasable Mineral Decisions • Wildlife Management Decisions	• Acres of land or RMs in the planning area closed to leasable minerals exploration and development
By following regulatory requirements and BLM policy, could change or reduce the area available for leasable minerals exploration and development.	• Leasable Mineral Decisions • Lands and Realty Decisions	• Acres of State- or ANCSA corporation-selected lands

Table 3.3.4-2: Summary of Impacts to Leasable Minerals by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres of land and percent within BLM-managed land in the planning area closed to leasable minerals exploration and development, open subject to standard stipulations, or NSO leasable.	• Closed: 5,202,221 acres (39%)[1] • Open (standard stipulations): 8,246,152 acres (61%)[1] • NSO: 17,521 acres (<1%)[1]	• Closed: 9,350,881 acres (69%)[1] • Open (standard stipulations): 2,517,414 acres (19%)[1] • NSO: 1,597,599 acres (12%)[1]	• Closed: 46,953 acres (<1%)[1] • Open (standard stipulations): 6,594,906 acres (49%)[1] • NSO: 6,824,035 (51%)[1]	• Closed: 46,953 acres (<1%)[1] • Open (standard stipulations): 13,182,385 acres (98%)[1] • NSO: 236,556 acres (2%)[1]
Acres of State- or ANCSA corporation-selected lands of BLM-managed land in the planning area	• State-selected: 144,300 acres • ANCSA Native corporation-selected lands: 2.6 million acres	Decisions to open areas for mineral exploration or development by revoking withdrawals would not go into effect unless lands are retained long term in federal ownership and the selections have been terminated because the State of Alaska and Native corporations have received their full entitlement.	Same as Alternative B.	Same as Alternative B.

Notes:
1) Percentage based on all BLM-managed land in the planning area.

Effects from Alternative A

Under Alternative A, continued management of BLM-managed land in the planning area would result in no additional closures to leasable mineral development in HVWs, but 17,521 acres in the planning area would continue to be managed as NSO leasable. SWMFP management actions to minimize impacts to caribou and moose from mineral leasing activities would continue to be mitigated through stipulations for seasonal use or NSO in crucial habitat areas.

Effects Common to All Action Alternatives

Under all action alternatives, lands currently under selection by the State of Alaska and Native corporations would be segregated from mineral leasing to avoid potential encumbrances on selected lands prior to conveyance. State-selected and ANCSA Native corporation-selected lands comprise approximately 144,300 acres and 2.6 million, respectively, out of the 13.5 million acres currently managed by the BLM in the 62.3-million-acre planning area. Therefore, decisions to open areas for mineral exploration or development by revoking withdrawals would not go into effect unless lands are retained long term in federal ownership and the selections have been terminated because the State of Alaska and Native corporations have received their full entitlement.

Because leasable mineral potential in the planning area has been defined as low, the potential for development of the resources is low due to the remoteness of the area and lack of infrastructure:

- Adverse impacts on leasable minerals from water resources and fisheries habitat management actions under the action alternatives would be small for the duration of the planning period for all action alternatives.
- Adverse impacts from wildlife management actions on leasable minerals would be small due to the low demand for mineral resources in the planning area for all action alternatives.

- Adverse impacts to leasable minerals from lands and realty management actions under all action alternatives would be small and would not impact the DOI goal of ensuring access to mineral resources.

Under all action alternatives, the INHT NTMC would be designated to minimize damage and disturbance from other mineral resource use to the federally managed portion of the INHT and associated historic sites. Portions of the INHT cross areas with potential oil and gas resources in the Minchumina and Innoko Basins. Development plans for leasable minerals would be authorized if direct and cumulative impacts associated with the action would not conflict with the nature and purpose of the INHT. Because leasable mineral potential in the NTMC is likely to be low, impacts to leasable minerals from national trails management actions under all action alternatives would be small.

Effects from Alternative B

Under Alternative B, a total of 9,350,881 acres (69%) of the 13.5 million acres of BLM-managed land in the planning area would be closed to leasable mineral development. Approximately 1,597,599 acres (12%) would be open to leasable mineral development but subject to NSO stipulations. Caribou and moose calving habitat would be open to oil and gas leasing subject to NSO. Seasonal restrictions on construction in moose and caribou calving habitat and in crucial winter habitat areas would apply. Impacts to migratory birds on BLM-managed land in the planning area would be minimized by prohibiting mineral leasing in riparian areas. Alternative B would close the most number of acres (9,350,881 acres) to leasable mineral exploration. However, because mineral leasing potential is low throughout the planning area, impacts to leasable mineral development under Alternative B would still be small.

Effects from Alternative C

Under Alternative C, a total of 46,953 acres (less than 1%) of BLM-managed land in the planning area would be closed to leasable mineral development. Approximately 6,824,035 acres (51%) would be open to leasable mineral development but subject to NSO stipulations, which would include HVWs. The remaining 6,594,906 acres (49%) of BLM-managed land in the planning area would be open to leasing subject to standard stipulations. Alternative C would close 9,303,928 fewer acres to leasable development than Alternative B and the same number of acres as Alternative D. Because mineral leasing potential is low throughout the planning area, impacts to leasable mineral development under Alternative C would be small.

Effects from Alternative D

Under Alternative D, a total of 46,953 acres (less than 1%) of BLM-managed land in the planning area would be closed to leasable mineral development, the same as Alternative C. Approximately 236,556 acres (2%) would be open to leasable mineral development but subject to NSO, and the remaining 13,182,385 acres (98%) would be open to leasing subject to standard stipulations, which would include HVWs. Alternative D would close 9,303,928 fewer acres than Alternative B and the same number of acres as Alternative C. Because mineral leasing potential is low throughout the planning area, impacts to leasable mineral development under Alternative D would be small.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Oil and gas basins in the region of the planning area include Bethel, Galena, Holitna, Innoko, Minchumina, and Yukon Delta Basins. Several geophysical surveys in the region have been conducted, and one exploratory well has been drilled. There are 59 oil and gas pending Federal Onshore Oil and Gas Leasing Reform Act of 1987 lease offers in the planning area that were filed in the late 1960s, all within the Yukon Delta NWR. No additional exploratory wells have been drilled in the area, and no recent federal oil and gas leasing has taken place. **Trend: Continue at a similar rate.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Management needs for leasable resources in the planning area are predicted to be low in the reasonably foreseeable future based on the remoteness of the area, lack of infrastructure, and low development potential of the resources. Over time, climate change could affect the accessibility or demand for leasable resources in the planning area; however, the nature and extent of these impacts cannot be confidently predicted with currently available data. Therefore, the cumulative impact of the management decisions related to leasable minerals from combined past, present, and reasonably foreseeable actions would be small. **Trend: No contribution to resource trend.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternatives B, C, and D)

Due to the low potential for leasable mineral development in the planning area, Alternatives B, C, and D would have the same contribution to cumulative effects as Alternative A. **Trend: No contribution to resource trend.**

3.3.5 Lands and Realty

Affected Environment

Land Tenure/Land Ownership

A withdrawal under ANCSA or ANILCA is a formal action that sets aside, withholds, or reserves federal lands by administrative order or statute for public purposes. There are 23 case types dealing with withdrawals within the planning area (see Appendix M and Map 3.3.5-1 for more information). In addition, there are administrative, recreation, power site, military, and other withdrawals in place.

Discretionary disposal actions are usually initiated in response to public requests or application and result in transfer of title and lands from the public domain. In the planning area, there are conveyances for airports, five sales under the R&PP, and 96 FLPMA sales. A withdrawal is a formal action that sets aside, withholds, or reserves federal lands for public purposes. There is approximately 13,461,531 acres of existing ANCSA 17(d)(1) withdrawals within the planning area. FLPMA authorizes the acquisition of real property and easements on a willing seller basis or reserves easements in ANCSA conveyance, where it is consistent with the mission of the department and departmental land use plans. However, an ANCSA 17(b) easement is not an acquisition but retained federal interest as defined by law. No pending acquisitions are being actively pursued by BLM within the planning area. A non-inclusive list of parcels

that BLM could consider for acquisition via land exchange is included in Appendix M, and legal descriptions provided in Appendix F.

Land Use Authorizations

BLM could authorize various uses through land use permits, leases, and ROWs. These include ROWs, airport leases, R&PP leases, FLPMA leases and permits, and easements:

- There are several ROWs in the planning area.
- There are no pending airport lease applications and only one authorized lease within the planning area as of February 2018.
- There is one R&PP sale pending, one lease issued, and five sales that have been authorized in the planning area.
- Three FLPMA permits are pending and six have been authorized in the planning area.
- There are no FLPMA easements authorized or pending in the planning area as of February 2018.

Direct and Indirect Effects

Table 3.3.5-1 summarizes the nature and types of beneficial or adverse effects that could occur to lands and realty, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.3.5-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives.

Table 3.3.5-1: Summary of Effects to Lands and Realty by Management Action

Types of Effects	Management Actions	Indicators
Land status changes could impact landownership by changing the number of acres directly owned or managed by the BLM.	• Land Tenure Decisions • Land Acquisition • Lands Made Available for Lease or Sale under the R&PP Act	• Acres of BLM-managed lands identified for acquisition, retention, or disposal • Acres affected by land withdrawals
Lands that are disposed of would no longer be subject to BLM management, limiting BLM's ability to protect resources and accommodate future activities.	• Land Tenure Decisions for the INHT NTMC • Exchanges or Disposals	• Acres of BLM-managed lands identified for acquisition, retention, or disposal • Acres affected by land withdrawals
Creation of new withdrawals, maintenance of existing withdrawals, or revocation of existing withdrawals would have implications on land use and resource protections, such as changing land status and limiting BLM's ability to accommodate future resource extraction.	• Mineral Decisions • Withdrawal Decisions • Transportation and Travel Management Decisions • Lands Managed for Wilderness Characteristics TMA • Proposed WSRs	• Acres or RMs affected by land withdrawals • Total VRM Class acreages
FLPMA ROW exclusion and avoidance areas could limit economic opportunities and preclude the BLM from accommodating future ROW (linear, communication, Mineral Leasing Act, FLPMA permit, and lease demands.	• Wildlife Management Decisions • FLPMA ROW Exclusion and Avoidance Areas • Transportation and Travel Management Decisions • Lands Managed for Wilderness Characteristics TMA • Support for BSWI Communities Decisions	• Acres of BLM-managed surface ownership affected by ROW lease or permit restrictions (i.e., avoidance or exclusion areas, NSO) • Total VRM Class acreages • Acres of FLPMA ROW exclusion or avoidance areas

Table 3.3.5-2: Summary of Impacts to Land and Realty by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Withdrawn from locatable minerals	4,804,488 acres (36%)[1]	9,842,497 acres (73%)[1]	46,953 acres (<1%)[1]	46,953 acres (<1%)[1]
Lands managed as VRM Class I or II	46,953 acres (Class I) (<1%)	7,825,858 acres (Class I or II) (58%)[1]	2,813,182 acres (Class I or II) (21%)[1]	726,506 acres (Class I or II) (5%)[1]
Areas managed for wilderness characteristics as a priority	0 acres	277,489 acres (2%)[1]	0 acres	0 acres
BLM-managed lands available for disposal or exchange	0 acres	• 342,360 acres (3%)[1] (exchange only) • 0 acres for disposal	• 356,942 acres (3%)[1] (exchange only) • 0 acres for disposal	• 451,173 acres (3%)[1] (disposal or exchange)
Areas affected by land withdrawals	0 acres	• 9,795,543 acres (73%)[1] (proposed FLPMA withdrawals) • 8,530,066 acres (63%)[1] (retained ANCSA 17(d)(1) withdrawals) • 4,931,465 acres (37%)[1] (revoked ANCSA 17(d)(1) withdrawals)	• 4,991 acres (<1%)[1] (proposed FLPMA withdrawals) • 0 acres (retained ANCSA 17(d)(1) withdrawals) • 13,461,531 acres (>99%)[1] (revoked ANCSA 17(d)(1) withdrawals)	• 0 acres (proposed FLPMA withdrawals) • 0 acres (retained ANCSA 17(d)(1) withdrawals) • 13,461,531 acres (>99%)[1] (revoked ANCSA 17(d)(1) withdrawals)
Areas affected by ROW	0 acres	• 1,464,069 acres (11%)[1] (exclusion) • 8,824,848 acres (66%)[1] (avoidance) • 3,176,977 acres (24%)[1] (open)	• 7,069,494 acres (52%) (avoidance) • 576,038 acres (4%)[1] (avoidance for linear ROW actions • 5,820,362 acres (43%)[1] (open)	• 5,130,927 acres (38%)[1] (avoidance) • 8,234,323 acres (61%)[1] (open)
Land managed as INHT SRMA	Unspecified	355,799 acres (3%)[1]	340,574 acres (3%)[1]	340,574 acres (3%)[1]
Land managed as ACECs	1,884,376 acres (14%)[1] (existing)	3,912,698 acres (29%)[1]	0 acres	0 acres
Land managed as INHT NTMC	None	288,466 acres (2%)[1]	273,242 acres (2%)[1]	273,242 acres (2%)[1]
WSR lands	• 46,953 acres (<1%)[1] (existing) • 332,176 acres (2%)[1] (eligible)	• 46,953 acres (<1%)[1] (existing) • 332,176 acres (2%)[1] (suitable)	46,953 acres (<1%)[1] (existing)	46,953 acres (<1%)[1] (existing)
Additional communication site ROWs	Site-by-site basis	Expanded use of existing microwave towers	Strategic locations on a site-by-site basis	Site-by-site basis

Notes:
1) Percentage based on all BLM-managed land in the planning area.

Effects from Alternative A

Alternative A would not identify any specific lands for disposal, acquisition, or exchange but would continue adjustment of land ownership boundaries and jurisdiction to make each agency's lands as manageable as possible. This action could directly impact land status in the planning area by changing the number of acres directly owned or managed by the BLM.

The current ACEC designations on BLM lands would continue; there would be no changes to current ACECs or addition of new ACECs. There would be no connectivity corridors, and no lands in the planning area managed as designated TMAs. Therefore, there would be no changes to land status.

The BLM would continue to manage the Unalakleet Wild River Corridor as VRM Class I. The INHT would be managed to maintain the integrity of the INHT and associated historic and cultural sites. These

actions would have direct impacts on lands and realty by limiting the BLM's ability to accommodate future ROW demand in these areas.

Alternative A would continue the current management of the Unalakleet Wild River Corridor, and an additional 18 river segments have been identified as eligible. The eligible river segments would continue to be managed for free-flowing condition, water quality, tentative classification, and ORV use. There are no guidelines for withdrawals that would be applicable to the eligible river segments. Therefore, there would be no effects to lands and realty from WSR management under Alternative A.

Effects Common to All Action Alternatives

Lands would be made available to benefit local communities through the use of ROW grants, permitting, exchanges, R&PP lease or sale, leases, or other appropriate permitting actions. This action could have a long-term, direct impact on land status in the planning area.

All action alternatives include provisions for developing new ROWs or making changes to existing ROWs, impacting the land use of the planning area. Outside of ROW avoidance areas specified in the action alternatives, linear project ROWs would address caribou passage through the NEPA disclosure process for ROW applications. This requirement would affect the location of potential ROWs in the planning area and could add to the economic costs of ROWs.

BLM-managed lands in the planning area would be designated as "Limited" to motorized travel. Realty actions for travel over the limited designations could be necessary, which would require an authorization from the BLM and have a direct impact on the land and realty program.

Under all the action alternatives, the INHT would be an SRMA. If the INHT is located within any lands where a withdrawal is revoked and if the parcel is conveyed, a reservation would be made for the INHT. This would be a long-term, direct impact to the land status of the planning area.

The BLM would maintain the withdrawal from mineral entry within the WSR corridors, subject to valid existing rights. This action could indirectly impact the BLM's ability to accommodate leasable development in the planning area. BLM-held withdrawals could be revoked on a case-by-case basis. If the BLM were to revoke withdrawals on lands that are top-filed by the State of Alaska, those lands could be transferred to the State of Alaska through the Statehood Act once the withdrawals are lifted. If a BLM withdrawal is within an ANCSA corporation, the lands could be conveyed via ANCSA. Any conveyance containing the INHT NTMC would contain a reservation for the national trail.

Unless already closed under other legal or regulatory requirements, the entire planning area would be open to oil and gas leasing, but any locations proposed for withdrawal from locatable mineral entry would also be NSO for oil and gas. BLM-managed public lands within the planning area subject to leasing would be open to coal exploration. Oil shale and non-energy leasable minerals would be leased on a case-by-case basis. Closing areas to mineral leasing could indirectly impact the BLM's ability to accommodate leasable development in the planning area.

Effects from Alternative B

Land acquisition and exchange by the BLM ensures the effective administration of BLM lands and serves the public interest by consolidating land patterns, improving resource management, maintaining access to

BLM-managed lands, and supporting community development on adjacent non-BLM-managed lands. Any lands exchanged or acquired would directly impact the land status of the planning area. For Alternative B, no lands are available for disposal, and 342,360 acres are available for land exchange.

The BLM would develop two travel management plans to identify travel routes and corridors between communities. As a result, there could be access provided via ROWs or easements for travel corridors. Future travel management plans would affect lands and realty actions through the limitations of ROW areas or granting of easements. There could also be areas of ROW restriction, limiting the BLM's ability to accommodate future ROW demands and adding to the economic costs of proposed actions as well as other land use authorizations. These would be indirect impacts.

The BLM would manage resources consistent with applicable VRM class objectives. Objectives for VRM Class I and II would have a greater likelihood of limiting the location and/or applying mitigation measures to ROWs and other land use authorizations.

The BLM would retain all areas managed for wilderness characteristics as a priority that are in BLM ownership (277,489 acres), which could affect lands that are available for exchange. Management actions associated with lands with wilderness characteristics under Alternative B would impact land status more than under Alternatives C and D.

In general, Alternative B would have more management actions that would limit land uses than Alternatives C and D. These restrictions limit the BLM's ability to accommodate future land and realty authorizations in areas that are limited to ROW, permits, or leases or have restrictions for these activities, which is a long-term direct impact to land use but would not impact land status.

HVWs would be closed to salable minerals entry, closed to leasable mineral development, and withdrawn from locatable mineral entry. These restrictions would limit the BLM's ability to accommodate future resource extraction in these areas, a long-term indirect impact, although impacts would be minimal because there is little to no known leasable mineral potential during the expected life of the plan.

Under Alternative B, HVWs, ACECs, and WSRs could have FLPMA ROW exclusion or avoidance area buffers, and all proposed ACECs would be managed as FLPMA ROW avoidance areas. These restrictions would limit the BLM's ability to accommodate future ROW, FLPMA permits, and leases demands or other development in these areas, a long-term indirect impact.

Withdrawals under Alternative B would be revoked for those lands under ANCSA 17(d)(1), except for specified areas where future FLPMA withdrawals for salable, locatable, and leasable mineral development are proposed to minimize impacts to resource values at risk.

Effects from Alternative C

Available exchanges and acquisitions under Alternative C would be similar to Alternative B in that no lands would be available for disposal. Under Alternative C, 356,942 acres would be available for land exchange only. There would also be only one travel management plan instead of two, and there would be fewer acres managed as VRM Class I and II. The nature and type of effects would be the same as Alternative B.

Under Alternative C, there would be fewer restrictions on land use than Alternative B. Potential avoidance buffers would be the same as under Alternative B. Under Alternative C, HVWs would be open to salable mineral development on a case-by-case basis, NSO for leasable minerals, and open to locatable mineral entry. There would be no ACECs proposed in Alternative C. Lands within the South Connectivity Corridor would be ROW avoidance areas for linear realty actions. Restrictions would limit the BLM's ability to accommodate future land and realty authorizations in areas that are limited to ROW, permits or leases, or have restrictions for these activities, a long-term indirect impact.

Alternative C would propose 4,991acres of new FLPMA withdrawals. All existing ANCSA 17(d)(1) withdrawals under Alternative C would be revoked. Acquisitions would be the same as Alternative B, and the BLM would retain all lands within the INHT SRMA that are in BLM ownership. Any acquisitions or disposals would have direct impacts on the land status of the planning area.

Effects from Alternative D

There would be fewer acres managed as VRM Class I and II than Alternatives B and C (Table 3.3.5-2). In general, Alternative D would have fewer restrictions on land use than Alternatives B and C. Land use authorizations in HVWs would be limited to ROW, permits, or leases, or have restrictions for these activities. There would be no impact to the lands and realty program.

There would be no new FLPMA withdrawals proposed, and all existing ANCSA 17(d)(1) withdrawals would be revoked. Acquisitions would be the same as Alternative B. Any acquisitions or disposals would have direct impacts on the land status of the planning area. The BLM would not pursue opportunities to acquire lands for public use easements under Alternative D, and there would be no impact to lands and realty.

Under Alternative D, as with Alternative C, there would be no ACECs. The proposed restrictions on the lands considered for ACECs (see Section 3.4.1) on land and realty authorizations would not be enacted, thereby increasing BLM's ability to address land and realty demands from the public and reduce the economic burden of these proposals to meet ACEC limits on realty authorizations.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Land status changes slowly as lands that are selected by the State or ANCSA corporations are conveyed out of BLM management and to the ownership of the selector.

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Conveyance of lands to the State and Native corporations is ongoing and will continue until the process is complete. On a statewide basis, about 98 percent of Native conveyances and 95 percent of State conveyances have been completed. Under Alternative A, this process would likely continue at the current rate. Additionally, the BLM and other landowners have, since conveyance began, exchanged, withdrew, disposed of, and acquired land outside of the conveyance process. Reasonably foreseeable future actions are not anticipated to influence the rate of land status changes within and next to the planning area.

Past and present land uses, such as resource exploration and extraction, management of the INHT, community infrastructure, military activities, research and monitoring, recreation, and subsistence activities could impact lands and realty if such actions include ROW establishment, lease sales, and transportation corridors. Land use for all lands, including lands not managed by BLM, within the planning area can influence the current condition of the resources in the planning area. Impacts from such actions include ROW establishment, lease sales, and surface occupancy. Such impacts indirectly affect lands and realty in the planning area.

Potential transportation corridors under review by the State include two road and ROW corridors, both of which would cross BLM-managed land in the planning area. These activities would directly impact lands and realty in the planning area. Reasonably foreseeable future actions are not anticipated to influence the rate of land use changes within the planning area. **Trend: Continue the existing trend of land use.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternatives B, C, and D)

Alternatives B, C, and D would be the same as Alternative A regarding the status of land conveyance, other land status changes, and overall land use; past, present, and reasonably foreseeable future actions would not influence the rate of land status changes within and next to the planning area. **Trend: Continue the existing trend of land use.**

3.3.6 Recreation and Visitor Services

Affected Environment

Recreation setting characteristics (RSCs) influence desired experiences and benefits provided by recreation opportunities. Physical, social, and operational RSCs in the planning area are largely primitive and a result of low levels of infrastructure and development, recreational use, and operational programs.

Primary recreation uses consist of big game hunting; fishing; wildlife viewing; berry picking; dogsledding, snowmobiling, and OHV use of the INHT; river touring; and sightseeing via airplane or helicopter. Given the remoteness and lack of facilities, recreation typically takes place as part of a specially permitted event or guided tour (ADCCED 2009). Visitors include Alaska residents and travelers from outside the state or country. High gas prices and air travel costs limit rural recreation opportunities for residents (ADNR 2016). Tourism is a major component of the Alaskan economy. In 2008, more than 1.7 million people visited Alaska and spent nearly $1.6 billion. Wildland tourism is an essential part of Alaska's tourism economy. There are 19 Guide Use Areas. Guided recreational fishing occurs along the Unalakleet, Yukon, and Kuskokwim Rivers, where wildlife viewing of moose, bears, bald eagles, ospreys, wolves, fox, beaver, and other wildlife is possible.

Competitive dogsledding and snowmobiling events are popular along the INHT and connecting trails. The INHT is the only national historic trail to commemorate winter use. Approximately 1,500 miles of the historic trail are open for public use; of these, 700 miles are in the planning area, and the BLM manages approximately 200 miles, including State- and Native-selected lands. Most trail use takes place from February to April and includes several competitive events, such as the annual Iditarod Sled Dog Race (Iditarod 2017), the Iron Dog snowmobile race (Iron Dog Snowmachine Race 2017), and human-powered endurance races (foot, bicycle, and ski) such as the Iditarod Trail Invitational. Climate change is shortening the winter season for competitive events (ACRC 2018). The BLM issues SRPs to guides,

outfitters, and event coordinators (BLM 2017). As of February 2017, there were 24 active SRP operations. Summer use of the INHT is less frequent than winter use and primarily occurs outside the planning area.

The BLM manages five public safety shelters in the planning area (BLM 2015e). Non-BLM managed hunting and fishing lodges are popular summer destinations accessible by air or boat. Year-round access is primarily by air and waterways. The Unalakleet River is 90 miles long; 83 miles are managed by the BLM as a WSR (BLM 1983). There are no established campsites or public facilities. Summer activities include boating, fishing, and primitive camping. Winter activities include snowmobiling, dog mushing, ice fishing, hunting, and trapping. The INHT parallels or passes over portions of the WSR segment.

Winter access includes air, snowmobile, and snowshoeing. Snow storms, frigid temperatures, and little to no sunlight limit recreation from November through January. From February to April, non-residents arrive to participate in winter recreation opportunities. A lack of roads and wet ground conditions in the late spring, summer, and early fall often preclude most recreation.

Direct and Indirect Effects

Impacts to recreation and visitor services can result from changes in recreation setting, visitor use (type and amount), and administrative or operational controls. Under all action alternatives, these attributes would be managed in the proposed INHT SRMA through physical, social, and operational RSCs designed to achieve a desired outcome. Impacts to recreation and visitor services within the BSWI ERMA would be measured in terms of the impacts to principal recreation activities (fishing, hunting) and the quality and conditions that support these activities.

Table 3.3.6-1 below summarizes the nature and types of beneficial or adverse effects that could occur to recreation and visitor services, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.3.6-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives. In addition to the indicators described below, measures to reduce impacts to fisheries and wildlife would support consumptive recreation opportunities and are discussed in Sections 3.2.5 and 3.2.7, respectively.

Table 3.3.6-1: Summary of Effects to Recreation and Visitor Services by Management Action

Types of Effects	Management Actions	Indicators
Surface use, occupancy, and surface-disturbing activities could alter RSCs and/or quality and condition of recreation activities, thereby resulting in indirect impacts to desired experiences and benefits.	• Mineral Decisions • ROW Decisions • Commercial Woodland Harvest Decisions • Travel and Transportation Decisions • VRM Decisions • Lands with Wilderness Characteristics Decisions • ACEC Decisions	• Changes in desired outcome, as measured by physical recreation setting (SRMA) and/or quality and conditions that support desired recreation activity (ERMA): • Acres open to mineral development in areas of medium to high LMP • Acres ROW • Acres open to commercial woodland harvest • Acres open to cross-country casual use (summer) • Acres managed with VRM Class I, II, or III or IV objectives • Acres managed for wilderness characteristics as a priority • Acres managed as ACEC

Table 3.3.6-2: Summary of Impacts to Recreation and Visitor Services by Indicator

Indicator	INHT SRMA				BSWI ERMA			
	Alt. A	Alt. B	Alt. C	Alt. D	Alt. A	Alt. B	Alt. C	Alt. D
Acres open to locatable mineral development in areas of medium to high potential	0	0	0	0	0	202,610 (2%)[2]	565,489 (4%)[2]	565,489 (4%)[2]
Acres managed as open to ROW	0	11,041 (3%)[1]	11,041 (3%)[1]	28,981 (9%)[1]	0	3,165,934 (24%)[2]	5,809,321 (44%)[2]	8,205,334 (63%)[2]
Acres managed as ROW exclusion	0	336,800 (95%)[1]	0	0	0	1,127,267 (9%)[2]	0	0
Acres managed as VRM Class I	46,953	355,799 (100%)[1]	46,953 (14%)[1]	46,953 (14%)[1]	0	979,972 (7%)[2]	0	0
Acres managed as VRM Class II	0	0	293,620 (86%)[1]	226,287 (66%)[1]	0	6,490,081 (50%)[2]	2,472,606 (19%)[2]	453,265 (3%)[2]
Acres managed as VRM Class III	0	0	0	67,333 (20%)[1]	0	3,516,063 (26%)[2]	6,095,772 (45%)[2]	6,072,896 (45%)[2]
Acres managed as VRM Class IV	0	0	0	0	0	2,123,969 (16%)[2]	4,556,930 (34%)[2]	6,599,147 (49%)[2]
Acres closed to commercial woodland harvest	0	316,236 (89%)[1]	46,953 (14%)[1]	0	0	4,700,921 (36%)[2]	40 (<1%)	0
Acres designated as ACEC (SRMA)	0	256,778 (72%)[1]	0	0	0	3,656,915 (28%)[2]	0	0
Acres with summer casual OHV access prohibited	0	241,512 (68%)[1]	225,925 (66%)[1]	225,925 (66%)[1]	0	277,489 (2%)[2]	0	0
Acres with summer casual OHV access limited to existing trails	0	67,333 (19%)[1]	115,012 (34%)[1]	46,953 (14%)[1]	0	12,832,595 (98%)[2]	13,125,308 (>99%)[2]	0
Acres eligible/recommended suitable WSR (SRMA)	77,055	77,055 (22%)[1]	0	0	302,075	302,075 (2%)[2]	0	0
Acres of lands with wilderness characteristics managed as a priority over other resources values and multiple uses	0	0	0	0	0	277,489 (2%)[2]	0	0
Acres managed as CFZs	0	0	0	0	0	818,395 (6%)	95,307 (1%)	0

Notes:
1) Percentage based on total acres of SRMA
2) Percentage based on total acres of ERMA.

Effects from Alternative A

Under Alternative A, the BLM would not designate recreation management areas and would not manage for specific desired setting experiences and benefits. Dispersed and unstructured recreation activity would continue in the planning area. Impacts to the remote, natural characteristic landscape in the planning area could result from allowable land use and development pertaining to minerals (with 52 percent identified as having medium to high LMP), ROW, and to a lesser extent, commercial woodland harvest.

Apart from the Unalakleet Wild River Corridor, VRM standards would not be applied to the planning area; therefore, scenic quality impacts that alter recreation setting could occur where land uses described above occur. Within the WSR, VRM Class I standards would maintain recreation setting consistent with the wild river classification. Existing ACECs would continue to avoid and minimize impacts to fish and wildlife by maintaining and/or improving fish and game populations and maintaining important habitat in 14 percent of the planning area.

Potential for use conflict would continue, especially in the INHT and Unalakleet Wild River Corridor, where recreation, subsistence, and casual use occur. Issuing SRPs on a case-by-case basis would allow

hunting guide/outfitters to accommodate increasing demand for guided hunting and fishing, and special events on the INHT; however, increased use in the absence of travel management could result in user conflicts (including by mode) and damage to natural resources that contribute to the recreation setting. These impacts would be greatest in areas of high recreation use, such as the INHT.

Effects Common to All Action Alternatives

INHT SRMA. The INHT SRMA would be established and managed for RSCs to achieve outcomes focused on remote adventure, physical activity, solitude, awareness of the natural world, and self-reliance in a natural characteristic landscape. The primary actions affecting physical RSCs include mineral and ROW development and commercial timber harvest. SRMA specific outcomes-focused objectives, proposed RSCs, and the management framework for each can be found in Appendix L, Recreation Management Areas.

Mineral development could alter physical RSCs through surface disturbance that alters landform and infrastructure that diminishes the natural character of the landscape. Vegetation clearing in new ROWs could establish straight lines in the natural landscape where changes in form, color, and texture contrast the existing landscape. Vegetation clearing in new ROWs could also increase access to areas otherwise considered remote and inaccessible. Commercial woodland harvesting could directly and indirectly affect physical RSCs in the short and long term by creating contiguous areas of vegetation clearing that appear incongruent with the surrounding intact landscape. Collectively or individually, these actions could impact the recreation setting necessary to support desired experiences and benefits for which the SRMA is managed.

The primary actions that affect social RSCs include noise impacts and changes in visitor use, encounters, and potential for conflict. Land uses described above could affect social RSCs by altering the natural quiet soundscape of the SRMA. Travel management actions that control season- and mode-specific travel would affect type of use. Implementation-level decisions on commercial recreation allocation and SRPs within the SRMA would affect level and type of use, and potential for conflicting uses.

The SRMA would not intersect medium to high mineral potential areas on BLM-managed lands; consequently, there would be a low likelihood for direct impacts to the physical recreation setting within the SRMA from mineral development in these areas as described in Alternative A. The NTMC would be established (with varying sizes) within the SRMA and would provide management of surface-disturbing activities to maintain the recreation experience provided by the trail's natural setting, feeling, and association. The Unalakleet Wild River Corridor would continue to be managed as a wild river under the National System, with use and development restrictions that support continued preservation of river values. Management actions that limit land uses in these areas would support desired experiences and benefits of the SRMA (Appendix L).

BSWI ERMA. The BSWI ERMA would be established and managed to maintain quality and condition of recreation activities, such as remote fishing and hunting and casual OHV use. Quality and condition of recreation setting in the ERMA would be affected by land uses as described for the SRMA, above. Short-term noise and visual impacts from these land uses could reduce the quality of a recreation experience and result in changes in consumptive recreation uses, as wildlife could disperse from areas where activity, noise, and/or lighting exist. Likewise, land uses that affect water quality or fisheries habitat through development in floodplains could impact the health and sustainability of sport fishing. Beneficial effects to the ERMA could result from management actions that maintain the recreation setting (VRM Class I or II) and reduce impacts to fisheries, wildlife, and important fisheries values identified for ACEC and WSR.

Collectively or individually, these actions could impact the recreation setting necessary to support desired experiences and benefits for which the ERMA is managed (Appendix L).

Effects from Alternative B

INHT SRMA. Under Alternative B, approximately 3 percent of BLM lands within the planning area (355,799 acres) that coincide with the INHT, connecting trails, and the Unalakleet Wild River Corridor would be designated an SRMA. Closure to commercial woodland harvest and ROW exclusion (89 percent and 95 percent of SRMA, respectively) would result in beneficial impacts to the desired RSCs, as changes in natural characteristic landscape, access, and potential impacts to fisheries and wildlife from these land uses would not occur. Damage to the trail and other portions of the SRMA from rutting or braiding would be minimized by prohibiting casual summer use on the trail in 81 percent of the SRMA.

All of the SRMA would be managed per VRM Class I, further ensuring maintenance of the characteristic landscape. Approximately 15 percent more of the SRMA would overlap areas designated as ACECs under Alternative B than Alternative A (Anvik Traditional Trapping Area ACEC [6 percent], Sheefish Spawning ACEC [53 percent], and the Unalakleet River Watershed ACEC [53 percent]), thereby reducing potential impacts to fisheries, which could benefit recreational fishing activity and minimize use conflicts. Approximately 22 percent of the SRMA would coincide with the Unalakleet Wild River Corridor, where management to avoid and minimize impacts to ORVs for fish would also contribute to long-term sustainability of the fisheries resource.

Alternative B would maintain the recreation setting necessary to support desired experiences and benefits for which the SRMA is managed (Appendix L). Through implementation-level visitor use decisions, the SRMA could be managed to promote public use of recreation facilities through SRPs that limit visitor numbers, stay lengths, and commercial use, thereby resulting in beneficial direct effects to social RSCs by minimizing conflict between commercial, casual, and subsistence use of the INHT.

BSWI ERMA. Under Alternative B, 97 percent of the planning area would be designated an ERMA, with 818,395 acres (about 6 percent of BLM-managed land in the planning area) managed as CFZs. The CFZs would be managed to reduce conflicts between subsistence use and commercial outfitter guide hunting by not permitting SRPs for this use in CFZs. However, shuttle service operations would be allowed throughout the entire ERMA, including CFZs. Therefore, conflicts could continue to occur between non-local hunters and local hunters engaging in subsistence activity. BLM would have the ability to control the number of shuttle service operators, and resulting conflict, by the number of SRPs issued.

Approximately 36 percent of the ERMA that intersects areas of medium or high mineral potential would be open to locatable mineral development. Approximately 36 percent of the ERMA would be closed to commercial woodland harvest, 9 percent would be managed as an ROW exclusion area, and 67 percent would be managed as an ROW avoidance area, which would avoid and minimize impacts to the quality and condition of recreation activities in the ERMA; effects would be similar to those described for the SRMA, though applied to a larger geographic extent. The quality and condition of guided recreational fishing could be impacted by noise and visual impacts if commercial woodland harvest occurred in areas open to commercial woodland harvest near the Unalakleet, Yukon, and Kuskokwim Rivers. In the remaining 24 percent of the ERMA open to ROW location, vegetation clearing in the ROW could create new access to the existing undisturbed landscape and trails primarily defined by subsistence use, adversely affecting the desired recreation setting for the ERMA.

Approximately 7 percent of the ERMA would be managed per VRM Class I, coinciding with certain rivers identified as eligible for inclusion in the National System. The VRM Class I designation would result in similar beneficial impacts as described for the SRMA. Approximately 50 percent of the ERMA would be managed per VRM Class II, including foreground-middleground viewsheds of national parks, wilderness, and State park lands within the planning area and background viewsheds of the Community of Flat. Maintaining viewsheds would have beneficial direct impacts to the quality and condition of recreation activities, including the historic setting of Flat where recreation and tourism opportunities exist. Approximately 42 percent of BLM-managed lands would be managed per VRM Class III and IV, allowing moderate to high changes to the characteristic landscape. However, only a low level of changes to the characteristic landscape would be permitted in approximately 74 percent of lands within the foreground-middleground (where visibility from recreation uses would be highest) due to VRM Class I and II designation. Collectively, a total of 11 ACECs under Alternative B would overlap 28 percent of the ERMA, more than Alternative A. Management actions for these ACECs would be similar to those described for the SRMA, resulting in similar beneficial impacts to recreation.

Under Alternative B, 277,489 acres (2 percent of the ERMA) with wilderness characteristics would be managed as a priority over other resource values and multiple uses. Opportunities for wilderness-based activities and quality of wilderness experiences would be retained in this portion of the ERMA by limiting surface disturbance and development, ROW avoidance, and locatable mineral withdrawals.

Compared to Alternative A and other action alternatives, Alternative B would result in the greatest compatibility between recreation uses and community interests due to exclusion of commercial hunting outfitter SRPs from the CFZs and allowing shuttle service operators by SRP. The CFZs would reduce conflicts between subsistence and recreation uses; however, future demand for guided hunting in the planning area could not be accommodated in these areas. Alternative B would maintain the recreation setting necessary to support the desired experiences and benefits for which the ERMA is managed (Appendix L).

Effects from Alternative C

INHT SRMA. Alternative C would designate a smaller area as the SRMA (340,574 acres) than Alternative B, and land uses that could impact RSCs would be less restricted. Direct impacts to physical RSCs could result from ROW development in 97 percent of the SRMA managed as avoidance areas. The magnitude and geographic extent of impacts to recreation would depend on the stipulations applied to permitted ROWs and their effectiveness in reducing impacts to physical and social (access-related) RSCs. ROW development that crosses or is located near the INHT could change the characteristic landscape and create new access, which could conflict with the desired physical RSCs. Potential impacts from commercial woodland harvest from Alternative C would be similar in nature and effect to those described for Alternative A; however, the geographic extent of impacts could be smaller because more acres would be closed to commercial woodland harvest (46,953 acres, or 14 percent of the SRMA). Alternative C would apply VRM Class I (14 percent or 46,953 acres) and II (86 percent or 293,621 acres) designations to the SRMA, thereby retaining the existing character of the landscape where development does occur and limiting direct impacts to the physical recreation setting. All VRM Class I designations would occur in portions of the SRMA that intersect the Unalakleet Wild River Corridor. Alternative C would differ from Alternative B in that summer casual and subsistence OHV use would be permitted on existing routes at the Rohn Site. Winter OHV access and travel management on the INHT would be the same as Alternative B and therefore would result in the same impacts described for Alternative B. As in Alternative B, damage to the trail from rutting or braiding would be minimized by prohibiting casual summer use on the

trail in 81 percent of the SRMA (note that the SRMA is smaller under Alternative B, but the relative percentage is the same).

BSWI ERMA. Alternative C would designate 13,125,320 acres (97 percent) of the planning area as an ERMA, with 95,307 acres (about 1 percent of BLM-managed land in the planning area) managed as CFZs. All areas of medium to high LMP in the ERMA would be open to locatable mineral exploration and development. The nature and types of effects on recreation from locatable mineral development would be similar to the impacts described for Alternative A, although to a greater geographic extent. The entire ERMA would be open to commercial woodland harvest and therefore would incur potential visual and noise-related impacts similar to those described for Alternative B.

The quality and condition of approximately 19 percent of the ERMA would be maintained through management as VRM Class II. The nature and types of effects would be the same as described for Alternative B; however, the beneficial impacts would occur over a smaller geographic extent (19 percent). Management as VRM Class II would remain for boundaries of national parks, wilderness, and State park lands. The remaining 79 percent of the ERMA would be managed per VRM Class III and IV. This management standard could result in direct adverse impacts to recreation setting quality within the ERMA, as described for Alternative B, but for a larger geographic extent. VRM Class III would be applied to a 15-mile buffer around the Community of Flat; modifications to the historic setting from development in this area could result in indirect effects to the potential for recreation and tourism. Management actions to reduce impacts to fisheries and habitat would result in beneficial impacts to recreation as described for Alternative B.

Under Alternative C, there could be an increased potential for user conflict given the smaller CFZ. Alternative C would allow shuttle service operations without an SRP throughout the ERMA unless there is an increase in use conflict with the BSWI ERMA objectives, at which point the BLM would engage in additional planning to maintain ERMA objectives. So, although Alternative C would not require SRPs for shuttle service operators, conflicts with non-local hunters and local hunters engaging in subsistence activity would be managed if issues arose. Additionally, the 5-mile radius CFZ would still be more restrictive than under Alternative A and thus would minimize conflict between recreation and subsistence use. Overall, the SRP-related management actions would support the RSCs, experiences, and benefits desired for the ERMA but to a lesser extent than Alternative B.

Effects from Alternative D

INHT SRMA. Alternative D would allow for an increased area open to ROW location (8 percent) and permitted on a case-by-case basis (30 percent), causing the magnitude and geographic extent of adverse impacts to recreation from ROW development to be greater compared to other action alternatives. All areas within the SRMA would be open to commercial woodland harvesting, and impacts would be the same as under Alternative A. Under Alternative D, VRM Class I would be applied to portions of the SRMA intersecting the Unalakleet Wild River Corridor (14 percent or 46,953 acres). VRM Class II management would be applied to other areas within 7.5 miles of the INHT, which could jeopardize the natural primitive recreation setting of the INHT by allowing changes within the landscape beyond this buffer. Alternative D would not support the desired physical RSCs for the SRMA and could result in impacts to the physical and social recreation setting that would not support the desired experience and benefits for which the SRMA is managed (Appendix L).

BSWI ERMA. Under Alternative D, the ERMA would be the same size as Alternative C. The ERMA area overlapping areas of medium to high LMP would be managed as open to locatable mineral

development, and impacts to recreation would be similar to those described for Alternative C. Compared to Alternative C, more area would be open to ROW location (approximately 63 percent of the ERMA), and less area would be managed as ROW avoidance (37 percent of the ERMA), resulting in greater impacts from vegetation clearing and potential new access than for Alternative C. The ERMA would be managed per VRM Class III and IV, except for approximately 3 percent of the ERMA, which would be managed as VRM Class II. In 49 percent of the ERMA managed per VRM Class IV, major modifications to the existing character of the landscape would be allowed, and the level of change to the characteristic landscape could be high. Such impacts would conflict with the desired experiences and benefits in the ERMA, including enjoying the sights or heightened awareness of the natural world. VRM Class IV designation (as compared to VRM Class III under Alternative C) would be applied to the 15-mile buffer surrounding the Community of Flat and the 5-mile buffers surrounding national parks, wilderness, State parks, and NWRs, which could result in direct adverse impacts to viewsheds from development in adjacent BLM-managed lands that dominate the landscape.

There would be no CFZs, and shuttle service operations would be allowed throughout the ERMA without an SRP. However, if the ERMA objectives are not being met, BLM would increase monitoring, outreach, education, and/or enforcement, case-by-case. Consequently, an increase in conflict with subsistence use could occur compared to Alternative B or C. However, Alternative D does provide BLM the ability to manage conflicts with non-local hunters and local hunters engaging in subsistence activity if issues arose, which is an improvement over Alternative A. Alternative D could result in impacts to the physical and social recreation setting that would not support the desired experiences and benefits for which the ERMA is managed (Appendix L).

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Demand is increasing for recreation opportunities in the planning area, including those that rely on a primitive or semi-primitive setting, and for sustainable consumptive recreation opportunities. This demand could increase potential for subsistence and recreation use conflict. The current trend could degrade recreation setting, opportunity, and experience within the planning area. There is potential for climate-related impacts to recreation setting, opportunity, and experience due to shorter winters. **Trend: Continues to degrade.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Recreation and visitor services management in the planning area would continue under the current framework. No measures would be taken to address increased recreation pressure and potential for user conflicts in the planning area. **Trend: Continues to degrade.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Management actions that control visitor use, manage setting (through allowable uses and VRM), and improve consumptive recreation resource bases would reverse current trends by maintaining setting, managing the recreation resource, and minimizing use conflicts. **Trend: Stabilizes and improves.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

Management actions that control visitor use would be applied. Actions that limit impacts to landscape character and setting would be applied; however, management would result in more impacts of higher

magnitude than under Alternative B. Likewise, measures to reduce impacts to fisheries and wildlife habitat to support consumptive recreation use would be applied to a smaller geographic area or in a manner that does not reduce impacts to the same degree as Alternative B. **Trend: Stabilizes and improves.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

Under Alternative D, visitor use would be managed on a case-by-case basis through evaluation of SRP permits. There would be more management actions to reduce resource impacts and limits on surface disturbance than Alternative A; however, they would not address current trends due to lack of specific planning measures to balance demand with desired RSCs. **Trend: Continues to degrade.**

3.3.7 Travel and Transportation Management

Affected Environment

The planning area encompasses one of the most remote areas in the United States due to the predominance of wetlands and waterways throughout the region, and a lack of roads connecting to Alaska's contiguous road system. A few short roads serve the local communities, but the only extended road systems are historical remnants of mining and military infrastructure, such as those found near the towns of Takotna, McGrath, and Unalakleet, or the ghost towns of Flat and Ophir. Almost all existing roads in the planning area are on lands managed by entities other than BLM. Community road systems typically consist of a grid, local airstrip, riverside boat landing site, landfill, telecommunication sites, and community water intake or gravel pits. For in-town transportation, residents rely on “four-wheelers” (quad-type OHVs with a straddle-type seat; also called ATVs) and multi-person UTVs with side-by-side seating in summer and snowmobiles in winter. Most bulk freight (fuel, dry goods, building materials, vehicles) is shipped by ocean and river-going barges from Anchorage or Seattle, Washington, in the summer. Automobiles are uncommon because of the high cost of shipping, maintenance, and fuel. Only a small percentage of bulk freight is hauled by air due to the cost. Year-round transportation for travel, postal service, and freight relies on commercial air service. Most communities have a State-maintained airfield.

Motorized use is currently undesignated in the planning area per 43 CFR 8342.1, which allows ATV and snowmobile use in the planning area. Non-motorized travel is also allowed everywhere in the planning area. Current use of congressionally designated areas (INHT, Unalakleet Wild River Corridor) is low due to remoteness and limited demand. Access by motorboat, inboard jet motorboat, airboat, fixed-wing aircraft, helicopters, and hovercraft is unrestricted. Minimal hand clearing of airstrips is allowed to move small obstacles and brush. Surface-disturbing improvements such as vegetation removal or site leveling require a permit. Management of weight restrictions on OHV routes is challenging; The BLM-managed lands within the planning area have no weight restrictions while neighboring State lands generally allow a recreational-type vehicle with a curb weight of up to 1,500 pounds or a highway vehicle of up to 10,000 pounds (if such use does not cause or contribute to water quality degradation, alteration of drainage systems, substantial rutting, surface disturbance, or thermal erosion). Larger vehicles on State land require a permit. Approximately 70 ANCSA Section 17(b) easements exist, providing public access across private native corporation lands. OHV use on easements is subject to limitations dating from easement establishment (allowable use, season of use, vehicle weight restrictions, easement type). See Appendix M for details on the BLM’s role in realty issues with individual easements. For future use demand, commercial lodges or commercial venture structure establishment is possible via a prescribed BLM

permitting process. Temporary commercial land use for commercial ventures is administered through the BLM's SRP and realty processes.

Surface uses and use areas or use routes are determined by whether water freezing conditions are present and can be generally distinguished as summer use or winter use. Summer is defined as the period during which lands and waterways are not frozen. Most summer surface uses follow waterways via motorboats, with a small proportion traveling overland via OHVs and an even smaller proportion traveling by non-motorized means. Summer overland travel is for subsistence resource harvest (wildlife, fish, berries, and firewood) and some guided hunting or casual individual use. No designated summer trails, travel routes, or designated primitive roads exist. Existing trails are from past OHV use for subsistence, recreation and development projects. Existing routes typically show impacts such as soil compaction, vegetation damage, hydrological changes, fish and wildlife impacts, visual impacts, and route braiding.

Winter use is defined as the period during which lands and waterways are frozen. Winter overland travel is undertaken for inter-village travel, subsistence, sport hunting, trapping, ice fishing, firewood collection, casual recreation, guided tours, and medium- and long-distance trail-based competitive events, such as the Iditarod Trail Sled Dog Race and Irondog (snowmobile) Race; the INHT is considered a winter trail. Virtually all winter trail use is shared by motorized and non-motorized users. Non-motorized travel includes cross-country skiing, fat-tire biking, dogsledding, snowshoeing, and foot travel. Most snowmobile use is on inter-village travel routes (along frozen waterways and sections of forest or tundra), near communities, and to and from remote areas for wildland resource harvest. See Appendix M for additional summer or winter use details.

Direct and Indirect Effects

Table 3.3.7-1 summarizes the nature and types of beneficial or adverse effects that could occur to travel and transportation management, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.3.7-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives.

Table 3.3.7-1: Summary of Effects to Travel and Transportation Management by Management Action

Types of Effects	Management Actions	Indicators
Changes to access due to: • Temporary closure of routes • Restriction or elimination of access to areas by certain types of vehicles or during certain times of the year • Limits on aerial access	• Air Quality Decisions • Wildlife Management Decisions • Hazardous Materials and Health and Human Safety Decisions • Travel and Transportation Management Decisions • Vegetation Management Decisions • Wildland Fire Management Decisions • Soils Management Decisions • Recreation and Visitor Services Decisions • WSR Decisions • Wildlife Decisions	• Change in ability to access existing routes, areas, or BLM lands in general • Change in ability of users with various types of vehicles to access areas • Change in aircraft landing accessibility • Change in airspace that aircraft are allowed to access over BLM lands • Acres of OHV cross-country access • Acres of OHV access limited to existing trails • Acres of restrictions on vehicle type

Types of Effects	Management Actions	Indicators
Impacts to the transportation network resulting from: • Expansion • Limiting the potential for expansion • Reducing creation of new social trails • Consolidation of routes • Route proliferation • Affects to unauthorized use • Limitations on future route locations • Physical degradation of routes	• Vegetation Decisions • Support for BSWI Communities Decisions • Travel and Transportation Management Decisions • Forestry and Woodland Product actions • Soils Decisions • Visual Resource Decisions • Lands and Realty Decisions	• Acres of land within ROW exclusion and avoidance areas • Acres that would be excluded from wind energy development • Change in the size of the transportation network • Increase or decrease in opportunities for unauthorized use of routes • Increase or decrease in the potential locations where routes could be placed • Physical degradation or expansion of route

Table 3.3.7-2: Summary of Impacts to Travel and Transportation Management by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres of summer OHV overland access[1]	None designated	Casual: 0 acres Subsistence: 12,899,939 acres (96%) • 8,986,567 acres ATV only (67%) • 3,912,698 acres ATV and UTV only (29%)	Casual: 0 acres Subsistence: 13,239,606 acres (98%) • 46,953 acres ATV only (<1%) • 10,368,769 acres ATV and UTV only (77%)	Casual: 13,193,016 acres (98%) Subsistence: 13,239,969 acres (98%) • 46,953 acres ATV and UTV only (<1%)
Acres of summer OHV access limited to existing trails[1]	None designated	Casual: 12,899,939 acres (96%) • 3,912,698 acres ATV only (29%) Subsistence: 324,443 acres (all ATV only) (2%)	Casual: 13,239,969 acres (98%) • 3,044,073 acres ATV and UTV only (23%) • 46,953 acres ATV only (<1%) Subsistence: 363 acres (<1%)	Casual: 46,953 acres (all ATV and UTV only) (<1%) Subsistence: 225,925 acres (all ATV only) (2%)
Acres limited to snowmobiles only for winter travel[1]	None designated	• Casual: 13,465,894 acres (100%) • Subsistence: 4,243,914 acres (32%)	• Casual: 3,097,798 acres (23%) • Subsistence: 3,097,798 acres (23%)	• Casual: 225,925 acres (2%) • Subsistence: 225,925 acres (2%)
Ability of users with various types of vehicles to access areas (does not include land surface features, which effectively limit use on majority of the planning area).	No impact; routes continue to be undesignated	Most restrictions on vehicular access. Vehicular access would also be the most restricted by TMAs, resulting in the greatest change to existing vehicular access.	More vehicular access restrictions than Alternative D but fewer than Alternative B.	Few limitations on vehicular access; least change to existing vehicular access
Aircraft landing accessibility	No impact	Landing access in certain areas could become more difficult over time	Same as Alternative B	Same as Alternative B
Airspace that aircraft are allowed to access over BLM lands[2]	No impact	Change in altitude and distance in some areas	Same as Alternative B	Same as Alternative B
Acres of land within ROW exclusion and avoidance areas[1]	0	10,288917 acres (76%)	7,069,494 acres (52%)	5,130,927 acres (38%)
Acres that would be excluded from wind energy development[1]	0	288,466 acres (2%)	273,242 acres (2%)	0

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Size of the transportation network	Network would continue to expand due to the location of new routes/trails, and development outside existing ANCSA 17(d)(1) withdrawn areas.	Would limit OHV use to existing routes in many areas and have the most acreage where impacts from new development would be avoided and therefore lowest potential for expansion of the network	Would limit OHV use to existing routes in many areas and have more acreage potentially impacted by new development than Alternative B	Fewest limitations on OHV use to existing and most acreage potentially impacted by new development; therefore, would have the most opportunities for network expansion
Opportunities for unauthorized use of routes	No routes would be designated; there could therefore be no unauthorized use.	Most acreage where impacts from new development would be avoided and thus would have decreased opportunities for unauthorized use.	More acreage potentially impacted by new development than Alternative B and less than Alternative D. Increased opportunities for unauthorized use on roads needed for new development than Alternative B but less than Alternative D.	Most acreage potentially impacted by new development and increased opportunities for unauthorized use of any new access routes needed for development compared to Alternatives B and C
Potential locations where routes could be placed	No impact and no limits on locations of routes	Decrease in potential route locations due to more acreage managed as VRM Class I or II and limits on locations in floodplains	Increase in potential route locations compared to Alternative B due to more acreage managed as VRM Class III or IV and limits on locations in floodplains	Increase in potential route locations compared to Alternatives B and C due to more acreage managed as VRM Class III or IV

Notes:
1) Percentages based on BLM-managed land in the planning area.
2) Applies to permitted aircraft and not to casual or subsistence use.

Effects from Alternative A

Under Alternative A, routes would continue to be undesignated apart from the Unalakleet WSR corridor, which would not allow casual OHV use per 43 CFR 36.11. Access and transportation mode would not be altered on any route. Due to the public's current use of OHVs and the location of existing trails, it is anticipated that route networks would expand, although summer use is limited by the predominance of wetlands and waterways blocking physical access. Outside existing ANCSA 17(d)(1) withdrawn areas, new development (e.g., ROW, mineral) could require new temporary routes/trails to access the development, which could expand the transportation network if the public began using these routes after permitted uses were completed. Timber harvesting could result in access impacts from closed or obstructed trail/route access during or after harvesting and expansion of the route network from skid trails and timber roads. Compared to the action alternatives, Alternative A would not result in impacts to travel and transportation management because it lacks measures that could limit access.

Effects Common to All Action Alternatives

Temporary impacts to access could result from route hardening, dust abatement, and trail re-routing under all action alternatives. Several management actions could affect the ability of users with various types of vehicles to access areas. Motorized use could be restricted due to low snow cover or if soil monitoring results indicate damage to trails. Several boat types would be prohibited on BLM lands and waters within the WSR corridor. These management actions would restrict or eliminate access to areas by certain types of vehicles and/or during certain times of the year. Additional restrictions on travel could be developed in the future for ERMAs and undesignated recreation lands and during TMP implementation-level planning that could result in reduced access or reduced ability to access an area via certain vehicle types.

Under all action alternatives, no construction or formal improvement of aircraft landing areas would be allowed; minimal clearing of rocks, down logs, and brush would be allowed in landing areas. Aircraft access to certain areas could become more difficult over time due to the prohibition on improving landing areas.

Under all action alternatives, management actions would change the airspace where aircraft are allowed access over BLM lands by limiting how close (in altitude or distance) authorized or permitted airplanes could get to some areas (temporarily for occupied raptor nest areas) but would not eliminate aerial access to any areas or affect casual use.

Several management actions under all action alternatives would result in changes to the size of the areas open to and accessible to OHVs. The acreage could be reduced by consolidating or closing stream crossings related to the requirement for a State permit for any motorized vehicle crossing of an anadromous stream. Co-locating linear projects and requiring the use of existing roads and trails under surface-disturbing permits would reduce potential expansion by reducing the need for new routes/trails. The issuance of SRPs that include OHV activities in the ERMA could require temporary or permanent new routes/trails and surface-disturbing permit route requirements to minimize soil compaction and vegetation disturbance could require permittees to travel farther, create longer trails/routes, or use slightly more expensive transportation methods such as air or boat travel to avoid resource damage in some areas.

Opportunities for unauthorized use would be reduced under all action alternatives through closure or restoration of unauthorized OHV trails, re-contouring/restoring skid trails and roads constructed for timber sales, and maintaining existing trail systems on BLM land to be compatible with those on adjacent private lands.

The BLM would support the community-led development and maintenance of emergency shelter cabins in areas used for subsistence under all action alternatives. This management action would also provide additional safety for subsistence users though the development could increase the size of the route network to provide access to these cabins.

Effects from Alternative B

Alternative B would have the most restrictions on vehicular access due to management actions to minimize impacts to vegetation and wildlife; in practice, however, this alternative would not result in any major decrease in acreages used, as the predominance of wetlands currently blocks physical access to these areas. OHV use in the planning area is primarily for subsistence purposes; only a tiny proportion is for casual uses. All subsistence OHV use would either be limited to ATVs only or ATV and UTV only. In Alternative B, 96 percent of BLM lands in the planning area would be open to ATV use, with the remaining 4 percent limited to existing trails or prohibited. Casual OHV use, which is a very small proportion of all OHV use, would be limited to ATVs only on existing trails throughout the planning area. About 29 percent of the planning area would be limited to ATVs only on existing trails for casual use. Subsistence OHV use would be restricted to a lesser extent, with only 4 percent of the planning area prohibited or limited to existing trails.

Vehicular access would also be the most restricted by TMA under Alternative B, resulting in the greatest change to potential vehicular access under the action alternatives. Alternative B would also have the most acreage where impacts from new development would be avoided and the least acreage managed as VRM Class III and IV. Therefore, Alternative B would provide the fewest opportunities for new development that could require new temporary routes/trails to access the development (with the most limitations on

new route locations). Alternative B would also include the limitation of OHV use to existing routes in many areas, which would limit subsistence, casual, and sport use and growth of the transportation network.

Effects from Alternative C

Alternative C would have more restrictions on vehicular access due to management actions to minimize impacts on vegetation and wildlife compared to Alternative D but fewer restrictions compared to Alternative B. Fewer acres would be prohibited for casual use under Alternative C than Alternative B; however, the entire planning area would still be closed to OHV use or limited to existing trails for casual use. About 23 percent of the planning area would be limited to ATVs only on existing trails for casual use, which is less than Alternative B. Subsistence OHV summer overland travel would be permitted throughout the 98 percent of the planning area, although 77 percent of the planning area would be limited to ATV and/or UTVs. Alternative C would provide fewer restrictions on OHV travel for subsistence use than Alternative B, with approximately 2 percent of the planning area prohibited from OHV subsistence use (the Rohn site would be limited to existing trails).

Alternative C would include more acreage potentially impacted by new development compared to Alternative B and less acreage potentially impacted by new development than Alternative D. Therefore, Alternative C would provide a larger potential for network expansion if new temporary routes/trails to access the development became designated routes after permitted uses were completed than Alternative B but fewer opportunities (over a smaller geographic area) than Alternative D. Alternative C would provide fewer limitations on the location of future routes because more acreage would be managed as VRM Class III and IV compared to Alternative B. Similar to Alternative B, Alternative C would limit OHV use to existing routes in many areas, which would limit subsistence, casual, and sport use and growth of the transportation network.

Effects from Alternative D

Under Alternative D, there would be the fewest restrictions on vehicular access. Restrictions on vehicle use would be limited to the Unalakleet Wild River Corridor and INHT NTMC TMA. Alternative D would prohibit casual OHV use on approximately 2 percent of the planning area and restrict less than 1 percent to existing trails. Subsistence OHV use would not be prohibited outright anywhere in the planning area but would be restricted to existing trails with ATV only in approximately 2 percent of the planning area. Therefore, Alternative D would have the least impact on existing access for both casual and subsistence use and would only limit OHV use to existing routes in one area (INHT NTMC TMA), thus providing opportunities for network expansion. Alternative D would also have the fewest acres where type of vehicle would be restricted: about 1 percent for casual use and 2 percent for subsistence use. Alternative D would also have the most acreage potentially impacted by new development and the most acreage managed as VRM Class III and IV. Therefore, Alternative D would provide the most opportunities for new development that could require new temporary routes/trails to access the development (with the fewest limitations on new route locations), which could expand the transportation network if these routes became designated routes after permitted uses were completed.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Travel in the planning area is by many modes including boats, helicopters, airplanes, ATVs, UTVs, snowmobiles, and over-the-snow vehicles. Travel and transportation in the planning area are restricted seasonally by weather, and there are very few developed access facilities. **Trend: Continues at a similar rate.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Trends of increased OHV use and travel via larger or heavier vehicles could expand the route network and result in access to new areas or additional users on existing routes/trails. Reasonably foreseeable actions include potential mineral and energy development, including the Donlin Gold Project and associated natural gas pipeline, and the development of new highways, which could alter access into and on BLM lands, potentially increasing the access and number of visitors to BLM lands. Routes would continue to be undesignated with no guidance on the location of new routes and reduced ability to curb route proliferation. **Trend: Degrading.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternatives B and C)

OHV and travel trends, as well as reasonably foreseeable actions, described above for Alternative A would also apply to Alternatives B and C. However, under Alternatives B and C, there would be requirements for new route development and restrictions on the use of existing routes in many areas. The designation of routes would provide the BLM with the ability to enforce route access limitations. **Trend: Improving.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

OHV and travel trends, as well as reasonably foreseeable actions, described above for Alternative A would also apply to Alternative D. Under Alternative D, the route network could increase due to fewer limitations on new routes and fewer restrictions on access modes. Designation of routes would provide the BLM with the ability to enforce route access limitations where relevant. **Trend: Degrading but at a lesser rate than Alternative A.**

3.3.8 Renewable Energy

Affected Environment

Renewable energy resources in the planning area consist of wind, biomass, peat, and hydropower. The following discussion summarizes the current conditions of renewable energy resources and forecasts related to potential future renewable energy opportunities.

Wind Resources

Several communities in the planning area, including Unalakleet, Toksook Bay, and Kwigillingok, use wind energy to supplement diesel-powered generating stations. However, large-scale wind projects are unlikely to be built on BLM-managed public land in the foreseeable future. Within the planning area, wind potential is generally poor to fair (see Map 3.3.8-1), and no lands with high potential for utility-scale

wind development have been identified. The population in the planning area is low (with correspondingly low energy demand), particularly in areas near BLM-managed public lands, and infrastructure to transport electricity to regional population centers is extremely limited. Transmission is costly to build, and typically, a large demand is necessary to warrant long distance transmission lines.

Biomass

Map 3.3.8-2 shows the distribution of biomass forest in the planning area. The majority of forest biomass is concentrated in the northern, central, and western portions of the planning area and consists of deciduous forest, or white or black spruce. There are currently no existing biomass projects using woody biomass from BLM-managed public lands in the planning area. Most BLM lands in the planning areas are far from population centers, making the commercial large-scale use of biomass economically unlikely in the near future.

Peat

As illustrated on Map 3.3.8-3, concentrations of peat are distributed throughout the eastern, southeastern, and central portions of the planning area. Currently, there are no requests to develop peat on BLM-managed public land, and only one feasibility study on large-scale use of peat has been completed in the planning area to date. The study concluded that the use of peat to fuel peat-fired power plants was not feasible because all of the peat drilled and sampled existed in permafrost, and excavation of the peat resource was likely to be costly and damaging to the permafrost conditions.

Hydropower

There are relatively limited hydropower resources located on BLM lands. Three FERC hydropower withdrawals have been made within the planning area, but none has resulted in project initiation. The Aniak and McGrath permits are still in place. The permit for the Chikuminuk Lake Hydroelectric Project was surrendered by the applicant in September 2014. Any future hydropower projects are likely to be small and located close to existing communities.

Direct and Indirect Effects

The planning area is thought to have limited renewable energy resource potential because of its remote location, low population, and lack of infrastructure. While there is some potential for the use of wind, hydroelectric, and peat/biomass, the use of these resources is likely to be small scale and in the immediate vicinity of communities. Because the land in the vicinity of the local communities is typically not managed by the BLM, it is unlikely that BLM land would be used for renewable energy development. As a result, the magnitude of impacts due to proposed management action items on renewable energy resources on BLM-managed land is relatively low for all alternatives.

Table 3.3.8-1 summarizes the nature and types of adverse effects that could occur to renewable energy resources, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.3.8-2 discloses the potential magnitude and extent of the effects by indicator across alternatives.

Table 3.3.8-1: Summary of Effects to Renewable Energy Resources by Management Action

Types of Effects	Management Actions	Indicators
Impacts to renewable energy resources are largely those that change or limit the acreage available for renewable energy development, the location of possible high-value renewable resources, and access to these locations, such as restrictions in 100-year floodplains and in the vicinity of springs; establishment of ROW exclusion and avoidance areas; restrictions on commercial woodland harvest; exclusion of areas for wind energy development; and implementation of wildlife management actions, such as prohibiting surface-disturbing activities during migratory bird nesting season. Additionally, using areas with renewable energy potential for another use, such as mineral development, would also preclude that area from being used for renewable energy.	• Watershed Decisions • Lands and Realty Decisions • Mineral Decisions • Lands Managed for Wilderness Characteristics as a Priority • Forestry and Woodland Products Decisions • Wind Energy Development • ACEC Designations • Travel Management Decisions	• Acreage not available for development of renewable resources and access to that acreage • Acreage not available for transmission of energy from sources to the users
Increased costs for development of renewable energy could result from costs incurred from conducting soil surveys, conducting surveys for sensitive resources, conducting cultural and paleontological surveys, and implementing project-specific management actions to avoid and minimize impacts to cultural and paleontological resources, burying utility lines in raptor nesting areas, compliance with APLIC guidelines, preparing RCE, and providing individual financial guarantees.	• Soils Decisions • Wildlife and SSS Decisions • Cultural Resource Decisions • Paleontological Resources Decisions • Requirements for a Detailed RCE and Individual Financial Guarantee • Requirements for Burying Utility Lines in Raptor Nesting Areas and Compliance with APLIC Guidelines	• Increased costs for development of renewable energy projects

Table 3.3.8-2: Summary of Impacts to Renewable Energy Resources by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acreage available for development of renewable resources and access to that acreage.	• 0 acres managed for wilderness characteristics as a priority • 1,583,751 acres (12%)[1] closed to commercial woodland harvest • 294,325 acres open to locatable mineral development in medium or high LMP (52%)[2] • 8,661,406 acres open to salable mineral development (64%)[1] • 0 acres (0%)[1] excluded from wind energy development • 1,884,376 acres (14%)[1] restricted due to ACEC designations	• 277,489 acres (2%)[1] managed for wilderness characteristics as a priority • 8,418,904 acres (63%)[1] closed to commercial woodland harvest • 202,610 acres open to locatable mineral development in medium or high LMP (36%)[2] • 3,623,397 acres open to salable mineral development (27%)[1] • 288,466 acres (2%)[1] excluded from wind energy development • 3,912,698 acres (29%)[1] restricted due to ACEC designations	• 0 acres managed for wilderness characteristics as a priority • 46,953 acres (<1%)[1] closed to commercial woodland harvest • 565,489 acres open to locatable mineral development in medium or high LMP (100%)[2] • 13,182,385 acres open to salable mineral development or open on a case-by-case basis (98%)[1] • 288,466 acres (2%)[1] excluded from wind energy development • 0 acres (0%)[1] restricted due to ACEC designations	• 0 acres (0%)[1] managed for wilderness characteristics as a priority • No restrictions on commercial woodland harvest • 565,489 acres open to locatable mineral development in medium or high LMP (100%)[2] • 13,182,385 acres open to salable mineral development (98%)[1] • 0 acres (0%)[1] energy development • 0 acres (0%)[1] restricted due to ACEC designations

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acreage available for transmission of energy from sources to the users.	• 0 acres (0%)[1] would be ROW exclusion areas • 0 acres (0%)[1] would be ROW avoidance areas • 13,465,894 acres (100%)[1] would be open to ROW permits granted on a case-by-case basis.	• 1,464,069 acres (11%)[1] would be ROW exclusion areas • 8,824,848 acres (66%)[1] would be ROW avoidance areas • 0 acres (0%)[1] would have ROW permitted on a case-by-case basis • 3,176,977 acres (24%)[1] would be open to ROW location	• 0 acres (0%)[1] would be ROW exclusion areas • 7,069,494 acres (52%)[1] would be ROW avoidance areas • 576,038 acres (4%) would be ROW avoidance for linear realty action • 0 acres (0%)[1] would have ROW permitted on a case-by-case basis • 5,820,362 acres (43%)[1] would be open to ROW location	• 0 acres (0%)[1] would be ROW exclusion areas • 5,130,927 acres (38%)[1] would be ROW avoidance areas • 100,644 acres (<1%)[1] would have ROW permitted on a case-by-case basis • 8,234,323 acres (61%)[1] would be open to ROW location
Increased costs for development of renewable energy projects.	Undetermined. No requirements for surveys, monitoring of paleontological resources, detailed reclamation plans, and individual financial guarantees could increase costs. Requirements for the management of cultural resources from disturbance under federal and State laws would continue.	Undetermined. Requirements for surveys, monitoring, burying utility lines, detailed reclamation plans, and individual financial guarantees could increase costs.	Undetermined. Requirements for surveys, monitoring, burying utility lines, detailed reclamation plans, and individual financial guarantees could increase costs.	Undetermined. Requirements for surveys, monitoring, burying utility lines, detailed reclamation plans, and individual financial guarantees could increase costs.

Notes:
1) Percentage is based on all BLM-managed lands in the planning area (13,465,894 acres).
2) Percentage is based on all medium or high LMP areas on BLM-managed land in the planning area.

Effects from Alternative A

Alternative A maintains current management of the planning area and would be the less restrictive to renewable energy development than Alternatives B and C. Under Alternative A, there are no specific management prescriptions for renewable energy development within floodplains, ACECs, or WSRs or in the vicinity of natural springs.

Management actions related to lands with wilderness characteristics, commercial harvesting, wind energy development, mineral development, and classification of ACECs would continue to limit the acreage available for renewable energy development. As shown in Table 3.3.8-2, Alternative A would provide more available acreage for renewable energy development than Alternatives B and C and less than Alternative D.

For Alternative A, no ROW avoidance or ROW exclusion areas would be designated, and there would be no associated limits on development of infrastructure for renewable energy projects. The travel and transportation networks under Alternative A would operate the same as existing conditions and would not hinder accessibility to develop or transport renewable energy resources.

Costs associated with development of renewable energy projects under Alternative A would be less than all the action alternatives because Alternative A would have no requirements for conducting soil surveys, conducting surveys for sensitive resources, implementing project-specific management actions for paleontological resources, preparing a detailed Reclamation Cost Estimate, or providing individual financial guarantees. Requirements to avoid and minimize impacts on cultural resources from disturbance under federal and State laws would continue under Alternative A, which would continue to contribute to

increased costs of the development of renewable energy resources due to actions required to meet Section 106 requirements. This impact on renewable energy development is expected to be minimal.

Effects Common to All Action Alternatives

Under all action alternatives, travel and transportation networks throughout the planning area would be subject to seasonal limitations or closures. All action alternatives would focus summer motorized use on existing routes, which would limit future growth of the transportation network. Under all action alternatives, travel and transportation network limitations and seasonal closures could hinder accessibility or transportation of renewable energy resources and result in fewer opportunities for renewable energy development projects as compared to Alternative A. Disturbance greater than 5 acres would be avoided in floodplains and streams for all action alternatives, which could limit development of renewable resources in those areas compared to Alternative A.

Costs associated with renewable energy development projects under all action alternatives could increase compared to Alternative A due to requirements for conducting soil surveys, conducting surveys for sensitive resources, implementing project-specific avoidance and minimization measures for cultural and paleontological resources, burying utility lines in raptor nesting areas, and complying with APLIC guidelines. Under all the action alternatives, the requirement for a detailed RCE and individual financial guarantee for some projects could increase the development cost of renewable energy projects.

Effects from Alternative B

Alternative B would be the most restrictive to renewable energy development as compared to Alternatives A, C, and D. Alternative B would exclude 8,418,904 acres (about 63% of BLM-managed lands in the planning area) from commercial woodland harvest and exclude 288,466 acres (about 2% of BLM-managed lands in the planning area) from wind energy development. Under Alternative B, 3,912,698 acres (about 29% of BLM-managed lands in the planning area), the most acreage of all the action alternatives, would be classified as ACECs, which also poses restrictions for surface-disturbance and new ROW that could limit the availability for renewable energy projects (Table 3.3.8-2). Surface-disturbing activities would not be permitted in the vicinity of natural springs.

Alternative B would open the least amount of acreage to locatable mineral development in areas of medium or high LMP in the planning area (202,610 acres; about 36% of BLM-managed lands in the planning area) and would also open the least amount of acreage to salable mineral development (3,623,397 acres; about 27% of BLM-managed lands in the planning area). Therefore, Alternative B would have fewer impacts to renewable energy resources than Alternatives A, C, and D because fewer areas could be developed for minerals, and consequently, not available for renewable energy development.

Alternative B would have the most acreage designated as ROW exclusion areas, most acreage designated as ROW avoidance areas, and the least amount of acreage open to ROW locations (Table 3.3.8-2). Therefore, Alternative B would have the most management prescriptions limiting development of infrastructure for renewable energy development requiring transmission, which would restrict transmission of energy from sources to users.

Effects from Alternative C

In general, Alternative C would have fewer restrictions on renewable energy development than Alternatives B and more restrictions than Alternative A and D (Table 3.3.8-2). Under Alternative C, all areas of medium or high LMP in the planning area would be open to locatable mineral development, and most (98%) of BLM-managed lands in the planning area would be open to salable mineral development on at least a case-by-case basis, which is similar to Alternative D and greater than Alternatives A and B. Areas where mineral development would occur would not be available for renewable energy development. Alternative C would have less impact related to the transmission of energy from sources to users as compared to Alternative B and more impact as compared to Alternatives A and D (Table 3.3.8-2) due to areas available for new ROW development. Alternative C would have no ROW exclusions; 7,069,494 acres (about 52% of BLM-managed lands in the planning area) of ROW avoidance areas; 576,038 acres (about 4% of BLM-managed land in the planning area) of ROW avoidance for linear realty actions; and 5,820,362 acres (about 43% of BLM-managed lands in the planning area) open to ROW. Alternative C would not allow ROW permitted on a case-by-case basis. Both Alternative A and D would have more area open to new ROW, facilitating transmission of energy and transportation of goods.

Although Alternative C would exclude 46,953 acres (less than 1% of BLM-managed lands in the planning area) from commercial woodland harvest and exclude 288,466 acres (about 2% of BLM-managed lands in the planning area) from wind energy development. Alternative C would open more areas to commercial woodland harvest, including biomass, than Alternative B but would open fewer areas than Alternative A and D. Although since the majority of areas open to commercial woodland harvest under Alternative A would be open on a case-by-case basis, meaning site-specific review would be required before issuing a permit, the difference between Alternative A and C during implementation would likely be small.

Like Alternative D, Alternative C would not have any acreage managed as ACECs and these areas would therefore be available for renewable energy development projects. Although there are 1,888,376 acres of ACECs under Alternative A, there are few management prescriptions for those areas. Therefore; the difference between Alternative A and C with respect to ACEC management would be small.

Effects from Alternative D

Alternative D would be the least restrictive to renewable energy development as compared to Alternatives B and C. Surface-disturbing activities within floodplains and in the vicinity of natural springs would be authorized on a case-by-case basis, which is likely to increase the acres where development of renewable energy resources could occur. Alternative D is more restrictive than Alternative A because Alternative A has no specific restrictions for surface-disturbing activities in these areas.

Under Alternative D, commercial harvest area would be allowed on 13,423,449 acres (nearly 100 percent of BLM-managed lands in the planning area). Alternative D has no exclusions for wind energy development, and no acreage would be managed as ACECs. Under Alternative D, all areas of medium or high LMP in the planning area would be open to locatable mineral development, which is the same as Alternative C but greater than Alternatives A and B. Therefore, renewable energy development would not be restricted due to these management activities under Alternative D and would provide the most

available acreage for renewable energy development as compared to Alternatives A, B, and C (Table 3.3.8-2).

Alternative D would have the fewest restrictions related to the transmission of energy from sources to users, which could be less restrictive to the development of infrastructure for renewable energy development, as compared to Alternatives B and C. Alternative D would have no ROW exclusions, fewer acres of ROW avoidance areas (5,130,927 acres; about 38% of BLM-managed lands in the planning area), and the most acres open to ROW (8,234,323 acres; about 61% of BLM-managed lands in the planning area) (Table 3.3.8-2).

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Due to the remote nature, low population, and lack of infrastructure, the planning area is thought to have relatively low potential for renewable energy resources. While there is some potential for the utilization of wind, hydroelectric, and peat/biomass, the use of these resources is likely to be small scale and in the immediate vicinity of communities. Because the land in the vicinity of the local communities is typically not owned by the BLM, is unlikely that BLM land would be used for renewable energy development.

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Under Alternative A, there would be no new impacts to renewable energy resources in the planning area. This alternative maintains current management of the planning area and is therefore not likely to increase or decrease development of renewable resources. **Trend: No cumulative contribution to existing trend.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Of the alternatives, Alternative B would have the greatest adverse impact to potential future development of renewable energy resource development in the planning area. Although Alternative B would restrict the greatest acreage of land available for renewable energy development and woodland harvest, including peat/biomass, there are no reasonably foreseeable renewable energy projects on BLM-managed land. Because of this, although Alternative B has the potential to impact future renewable energy development more than any other alternative, it is not likely to noticeably increase or decrease development of renewable resources due to the limited availability of these resources in the planning area. **Trend: No cumulative contribution to existing trend.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

Alternative C would result in an adverse impact of lesser magnitude to potential future development of renewable energy resource in the planning area compared with Alternative B. While Alternative C would restrict less acreage for renewable resource development and harvest, it would provide more flexibility. Despite this, there are no reasonably foreseeable renewable energy projects on BLM-managed lands. As such, Alternative C is not likely to increase or decrease development of renewable resources due to the limited availability of these resources in the planning area. **Trend: No cumulative contribution to existing trend.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

Alternative D would allow the greatest available acreage for renewable energy development and leave the greatest amount of room for future development of resources of all the action alternatives. However, there are no reasonably foreseeable renewable energy projects in the planning area. While there is some potential for peat to be harvested as a source of heat and for small-scale energy generation projects, these projects would be unlikely on BLM-managed lands. Because of this, Alternative D is not likely to increase or decrease development of renewable resources due to the limited availability of these resources in the planning area. **Trend: No cumulative contribution to existing trend.**

3.4 Special Designations

3.4.1 Areas of Critical Environmental Concern

BLM evaluated existing and nominated ACECs to determine presence of R&Is (BLM 2018b). Those ACECs for which nominated values were determined to be both relevant and important are referred to as "potential" ACECs and are considered for designation. In some cases, potential (nominated) ACECs encompass existing ACECs, as described in Table 3.4.1-1.

Table 3.4.1-1: Potential Existing and Nominated ACECs

ACEC Name	Potential (Existing) ACECs	Potential (Nominated) ACECs
Anvik Traditional Trapping Area ACEC	–	21,366 acres Relevance and Importance criteria: Cultural Resources
Anvik River ACEC	114,386 acres Relevance and Importance criteria: Fisheries	100,948 acres within the existing Anvik River ACEC would be managed as the Anvik River Watershed ACEC. 13,438 acres within the existing Anvik River ACEC boundary would no longer be managed as an ACEC.
Anvik River Watershed ACEC	–	248,872 acres Relevance and Importance criteria: Fisheries Anvik River Watershed ACEC would encompass 100,948 acres of land within the existing Anvik River Watershed.
Gisasa River ACEC	278,055 acres Relevance and Importance criteria: Fisheries	–
Inglutalik ACEC	71,713 acres Relevance and Importance criteria: Fisheries	–
Kateel River ACEC	568,083 acres Relevant and importance criteria: Fisheries	–
Nulato River ACEC	–	344,183 acres Relevance and Importance criteria: Fisheries Nulato River ACEC would encompass 649 acres of land within the existing North River ACEC boundary and 868 acres within the existing drainages of the Unalakleet ACEC boundary.
Shaktoolik River ACEC	192,591 acres Relevance and Importance criteria: Fisheries	Shaktoolik River ACEC would encompass 1,621 acres of land within the existing North River ACEC boundary.
Sheefish Spawning ACEC	–	696,902 acres Relevance and Importance criteria: Cultural Resources, Fisheries
Swift River Whitefish Spawning ACEC	–	220,032 acres Relevance and Importance criteria: Fisheries
Tagagawik River ACEC	–	301,044 acres Relevance and Importance criteria: Cultural Resources

ACEC Name	Potential (Existing) ACECs	Potential (Nominated) ACECs
Ungalik River ACEC	112,719 acres Relevance and Importance criteria: Fisheries	–
North River ACEC	132,200 acres Relevance and Importance criteria: Fisheries	67,316 acres within the existing North River ACEC would be managed as part of the Nulato River ACEC, Shaktoolik ACEC, and Unalakleet River Watershed ACECs. 64,885 acres within the existing North River ACEC boundary would no longer be managed as an ACEC.
Drainages of the Unalakleet ACEC	403,378 acres Relevance and Importance criteria: Cultural Resources, Fisheries.	300,836 acres within the existing drainages of the Unalakleet ACEC would be managed as part of the Nulato River ACEC and Unalakleet River Watershed ACECs. 102,542 acres within the existing drainages of the Unalakleet ACEC boundary would no longer be managed as an ACEC.
Unalakleet River Watershed ACEC	–	733,995 acres Relevance and Importance criteria: Cultural Resources, Fisheries. Unalakleet River Watershed ACEC would encompass 299,968 acres of land within the existing drainages of the Unalakleet ACEC boundary and 65,046 acres within the existing North River ACEC boundary.
Box River Treeline RNA	13,592 acres Relevance and Importance criteria: Not found to meet criteria	–
Peregrine Falcon Nesting Habitat ACEC	6,354 acres Relevance and Importance criteria: Not found to meet criteria	–
Kuskokwim River Raptor Nesting Habitat ACEC	4,896 acres Relevance and Importance criteria: Not found to meet criteria	–

The FLPMA provides for ACEC designation and establishes national policy for the protection of public land areas of critical environmental concern. Section 202(c)(3) of the FLPMA mandates the agency to give priority to the designation and protection of ACECs in the development and revision of land use plans. The BLM's planning regulations (43 CFR 1610.7-2) establish the process and procedural requirements for the designation of ACECs in resource management plans and plan amendments. Designation of ACECs is considered in Alternatives A and B. Designation of ACECs would manage R&Is in a manner that is consistent with the BLM's priority of creating a conservation legacy. Alternative C would not include the designation of ACECs; however, most of the lands that were proposed for ACEC designation under Alternative B would still be managed to minimize impacts to recognized R&Is. Potential impacts are summarized by nature and type of effect on R&Is for fish or cultural resources as listed in Table 3.4.1-1. Potential beneficial and/or adverse impacts to R&Is that could result in undesignated portions of potential ACECs are provided for Alternatives C and D, and as necessary for Alternative B.

- **Cultural resources:** Actions that could result in impacts to R&Is for cultural resources include surface disturbance from ROW development, commercial timber harvest, mineral development, or overland travel that could alter historic setting or damage or destroy cultural resources. Management prescriptions, such as VRM Class I and II, can manage allowable surface disturbance or development to minimize change in landscape character and beneficially impact cultural resources by limiting and regulating activities with the potential to damage or destroy artifacts or cultural sites. Therefore, VRM can be used as a tool to manage the cultural setting upon which the cultural R&I depends.
- **Fisheries resources:** Actions that could result in impacts to fish include surface disturbances near streams or waterbodies or that occur within areas of influence for these streams or waterbodies.

Activities with the highest potential to affect fish production include ROW development, commercial timber harvest, mineral development, or overland travel in or near important fish habitats. Management actions that restrict or regulate in-water and surface disturbance, such as designation and management as a HVW, provide beneficial impacts to fishery resources by limiting impactful activities that could degrade spawning habitat and water quality.

Direct and Indirect Effects

Table 3.4.1-2 summarizes the nature and types of beneficial or adverse effects that could occur in existing and potential ACECs, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.4.1-3 summarizes the potential magnitude and extent of the effects by indicator, across action alternatives. The "total potential ACEC acreage" reported in Table 3.4.1-3 is equal to the ACEC acreage that would be designated under Alternative B (i.e., areas that were determined to have R&Is). To analyze how R&Is could be impacted by the various alternatives, certain management actions were reviewed for each action alternative for the "total potential ACEC acreage." This provides an understanding of how the R&Is would be protected or impacted in the absence of an actual ACEC designation.

Table 3.4.1-2: Summary of Effects to ACECs by Management Action

Types of Effects	Management Actions	Indicators
Designation of VRM Class I and II would provide beneficial effects to cultural and historical resources by prioritizing preservation of the visual historic landscape.	• National Trail Decisions • VRM Decisions • ACEC Decisions • WSR Decisions	• Acres of VRM Class I or II
Ground disturbance from development could adversely affect cultural resource values by altering historic setting or damaging/destructing artifacts.	• Mineral Decisions • ROW Decisions • Commercial Woodland Harvest Decisions • Transportation and Travel Management Decisions	• Acres open to mineral development in medium or high LMP areas • Acres open to ROW development • Acres open to commercial woodland harvest and demand for this use
Creation of Cultural Landscape Reports would beneficially impact cultural resources by improving the understanding and documentation of cultural resources in the planning area.	• Cultural Resources Decisions • BSWI Communities Decisions	• Increased understanding and documentation of cultural resources
Increased levels of surface disturbance near waterways would adversely impact fisheries resources by increasing the likelihood of sedimentation and subsequent reductions in water quality.	• Water Resource and Fisheries Decisions • Mineral Decisions • Transportation and Travel Management Decisions • ROW Decisions • Woodland and Forest Products Decisions	• Acres that intersect HVW • Acres open to mineral development in medium or high LMP areas • Acres open to commercial woodland harvest and demand for this use • Size and route restrictions for summer travel • Acres open to ROW development

Effects from Alternative A

Alternative A includes the 11 existing ACECs in the planning area (44 percent of potential ACECs). In a 2016 evaluation, three of these (Peregrine Falcon and Kuskokwim River Raptor Nesting Habitat ACECs and the Box River Treeline RNA ACEC) were found to no longer support "Importance" criteria of their nominating values; however, these areas would remain designated under Alternative A.

Table 3.4.1-3: Summary of Impacts to Potential Relevant and Important Values by Action Alternative, ACEC, and Indicator

	Total Designated ACEC (acres)	Total Potential ACEC (acres)	% of Potential ACEC	VRM Class I	% VRM Class I	VRM Class II	% VRM Class II	VRM Class III	% VRM Class III	VRM Class IV	% VRM Class IV	HVW	% HVW
Alternative B													
Anvik River Watershed ACEC	248,867	248,867	100%	58,077	23%	190,790	77%	0	0%	0	0%	248,867	100%
Anvik Traditional Trapping Area ACEC	21,366	21,366	100%	21,366	100%	0	0%	0	0%	0	0%	5,168	24%
Gisasa River ACEC	278,241	278,241	100%	0	0%	62,189	22%	216,052	78%	0	0%	276,671	99%
Inglutalik River ACEC	70,888	70,888	100%	0	0%	0	0%	70,888	100%	0	0%	68,824	97%
Kateel River ACEC	692,659	692,659	100%	0	0%	55,820	8%	636,839	92%	0	0%	393,855	57%
Nulato River ACEC	344,182	344,182	100%	259	<1%	245,758	71%	98,165	29%	0	0%	327,976	95%
Shaktoolik River ACEC	191,067	191,067	100%	0	0%	69,724	36%	121,343	64%	0	0%	150,586	79%
Sheefish Spawning ACEC	696,901	696,901	100%	242,184	35%	454,717	65%	0	0%	0	0%	495,207	71%
Swift River Whitefish Spawning ACEC	220,032	220,032	100%	0	0%	13,504	6%	206,528	94%	0	0%	159,657	73%
Tagagawik River ACEC	301,044	301,044	100%	0	0%	301,044	100%	0	0%	0	0%	0	0%
Unalakleet Watershed ACEC	733,995	733,995	100%	352,094	48%	381,901	52%	0	0%	0	0%	683,096	93%
Ungalik River ACEC	113,454	113,454	100%	0	0%	0	0%	113,454	100%	0	0%	64,363	57%
Alternative C													
Anvik River Watershed ACEC	----	248,867	----	0	0%	4,198	2%	244,669	98%	0	0%	241,480	97%
Anvik Traditional Trapping Area ACEC	----	21,366	----	0	0%	21,366	100%	0	0%	0	0%	0	0%
Gisasa River ACEC	----	278,241	----	0	0%	0	0%	278,241	100%	0	0%	234,750	84%
Inglutalik River ACEC	----	70,888	----	0	0%	0	0%	70,888	100%	0	0%	17,992	25%
Kateel River ACEC	----	692,659	----	0	0%	0	0%	358,130	52%	334,529	48%	299,451	43%
Nulato River ACEC	----	344,182	----	1	0%	98,452	29%	245,729	71%	0	0%	297,923	87%
Shaktoolik River ACEC	----	191,067	----	0	0%	0	0%	191,067	99%	0	0%	123,808	65%
Sheefish Spawning ACEC	----	696,901	----	0	0%	421,036	60%	157,025	23%	118,840	17%	186,998	27%
Swift River Whitefish Spawning ACEC	----	220,032	----	0	0%	0	0%	220,032	100%	0	0%	102,478	47%
Tagagawik River ACEC	----	301,044	----	0	0%	301,044	100%	0	0%	0	0%	0	0%

	Total Designated ACEC (acres)	Total Potential ACEC (acres)	% of Potential ACEC	VRM Class I	% VRM Class I	VRM Class II	% VRM Class II	VRM Class III	% VRM Class III	VRM Class IV	% VRM Class IV	HVW	% HVW
Unalakleet Watershed ACEC	----	733,995	----	45,632	6%	688,363	94%	0	0%	0	0%	544,205	74%
Ungalik River ACEC	----	113,454	----	0	0%	0	0%	113,454	100%	0	0%	64,363	57%
Alternative D													
Anvik River Watershed ACEC	----	248,867	----	0	0%	0	0%	242,507	97%	6,360	3%	241,480	97%
Anvik Traditional Trapping Area ACEC	----	21,366	----	0	0%	0	0%	21,366	100%	0	0%	0	0%
Gisasa River ACEC	----	278,241	----	0	0%	0	0%	18,857	7%	259,384	93%	222,526	80%
Inglutalik River ACEC	----	70,888	----	0	0%	0	0%	27,005	38%	43,883	62%	17,992	25%
Kateel River ACEC	----	692,659	----	0	0%	0	0%	0	0%	692,659	100%	299,451	43%
Nulato River ACEC	----	344,182	----	1	0%	191	0%	196,484	57%	147,506	43%	297,923	87%
Shaktoolik River ACEC	----	191,067	----	0	0%	0	0%	55,506	29%	135,562	71%	123,808	65%
Sheefish Spawning ACEC	----	696,901	----	0	0%	177,428	25%	315,845	45%	203,628	29%	372,385	53%
Swift River Whitefish Spawning ACEC	----	220,032	----	0	0%	0	0%	78,427	36%	141,604	64%	102,478	47%
Tagagawik River ACEC	----	301,044	----	0	0%	0	0%	0	0%	301,044	100%	0	0%
Unalakleet Watershed ACEC	----	733,995	----	45,632	6%	229,297	31%	354,179	48%	104,886	14%	544,205	74%
Ungalik River ACEC	----	113,454	----	0	0%	0	0%	77,289	68%	36,166	32%	64,363	57%

Management actions differ among the existing ACECs and are currently enacted via regional land management plans and PLO withdrawals. There is no consistent management applied to ACECs to minimize impacts to R&Is. No existing ACECs are in areas of high LMP; consequently, risk of potential impacts to R&Is from mineral development is considered low. Existing ACECs are open to new ROW development on a case-by-case basis, and no direction exists for commercial woodland harvest; therefore, impacts to R&Is could result from surface disturbance should these actions occur in ACECs. Although there is currently little commercial timber harvest occurring in the planning area and future use is considered unlikely without added equipment and infrastructure, this analysis considers potential for localized impacts in the future.

VRM Class I designation is applied to the Unalakleet Wild River Corridor, thereby minimizing impacts to fisheries and cultural values where the WSR corridor overlaps the drainages of the Unalakleet River Watershed ACEC. Consequently, R&Is for fisheries and cultural resources would be managed in a localized portion of that ACEC as described above.

Effects Common to All Action Alternatives

Under all action alternatives, designated or undesignated portions of Tagagawik River ACEC would not intersect any areas designated as HVW. Therefore, impacts to fisheries R&Is associated with these areas would not be avoided or minimized (as layered management to designated ACECs, or management in lieu of designation in undesignated ACECs) through implementation of buffer zones that restrict surface disturbance and/or limitations on activities that could diminish the quality and diversity of habitats needed to sustain the production of fish populations at their natural potential.

Effects from Alternative B

Alternative B would designate 3,912,698 acres (91 percent) of the potential ACECs, minimizing impacts to R&Is for fish and cultural resources to a greater degree than Alternatives A, B, and C. ROW avoidance and prohibition of commercial woodland harvest would minimize impacts to fish and cultural R&Is as described above. Risk to fisheries resources from mineral development would be minimized by closing 528 acres of the Sheefish Spawning ACEC that overlaps areas of high mineral potential to locatable mineral development. All designated ACEC acreage under Alternative B would be withdrawn from locatable mineral development, either through maintaining existing withdrawals or proposing new withdrawals.

Additional management of R&Is would be achieved through layered management applied through VRM designation, overlap with the NTMC, and designation as HVW. One hundred percent of the Anvik Traditional Trapping Area ACEC, 48 percent of the Unalakleet Watershed ACEC, 35 percent of the Sheefish Spawning ACEC, and 23 percent of the Anvik River Watershed ACEC would be managed as VRM Class I. These areas would coincide with the NTMC where it crosses the Unalakleet Watershed and Sheefish Spawning ACECs. This level of management would result in beneficial impacts to cultural R&Is of these ACECs by preserving the historic setting of the ACEC and INHT. With the exception of Anvik Traditional Trapping Area ACEC (cultural) and Tagagawik River ACEC, all potential designated ACECs intersect HVWs for over 55 percent of their area, with over 95 percent of the Gisasa River, Inglutalik River, Nulato River, and Unalakleet Watershed potential ACECs overlapping HVWs. Overlap with HVWs would result in beneficial effects as described under “Effects Common to All Action Alternatives” above.

Although Alternative B would provide the greatest management of R&Is, it would also result in lower prioritization of the creation of Cultural Landscape Reports compared to Alternatives C or D. A higher prioritization would provide qualitative beneficial effects to the understanding and documentation of cultural, fisheries, and wildlife resources in the ACECs.

Effects from Alternative C

Alternative C does not include the designation of ACECs. However, there would be some management actions that would minimize impacts on identified cultural and fisheries R&Is in undesignated potential ACECs. The acreage covered by those management actions would include fewer acres than Alternative B in two cases: the Kateel River (52 percent of potential ACEC) and the Sheefish Spawning area (28 percent of potential ACEC). Management actions that would apply to these areas under Alternative C would be less restrictive than Alternative B in the following ways:

- Areas would be NSO leasable, open to locatable minerals, and open to salable mineral development on a case-by-case basis. As these locations primarily have low mineral potential (with the exception of 528 acres of medium potential in the Sheefish Spawning area) and would be managed as ROW avoidance areas, mineral development and associated impacts are unlikely.
- The areas would be open to commercial woodland harvest on a case-by-case basis.

One acre in the Nulato River area and 45,632 acres in the Unalakleet Watershed (6 percent of potential ACEC) would be managed as VRM Class I. VRM Class II designation would be applied to over 95 percent of the potential Anvik Traditional Trapping Area, and Tagagawik areas; and 89 percent of the Unalakleet Watershed, resulting in beneficial direct effects to cultural values by limiting development that could alter landscape character. Portions of the Nulato River, Sheefish Spawning, and Unalakleet Watershed undesignated potential ACEC areas would overlap the INHT and would receive additional management of cultural values through provisions that minimize impacts to historic setting.

Less than 50 percent of the Swift River Whitefish Spawning, Sheefish Spawning, Kateel River, and Inglutalik River undesignated potential ACEC areas, and no portion of the Anvik Traditional Trapping or Tagagawik River undesignated potential ACEC areas would intersect HVWs; consequently, none of the beneficial effects to fisheries R&Is described in Alternative B associated with HVWs would apply to these areas.

Four to six Cultural Landscape Reports would be prepared, which is more than Alternatives A or B although less than Alternative D. However, the areas covered by these reports have not been determined and might not overlap with any of the undesignated potential ACEC areas.

Effects from Alternative D

No ACECs would be designated under Alternative D. This alternative would have the least management for minimizing adverse effects from surface disturbance or visual impacts than the other alternatives. Some areas within the boundaries of undesignated potential ACEC areas would still be managed as ROW avoidance, minimizing impacts to R&Is through permit stipulations. Portions of the Sheefish Spawning and Unalakleet Watershed undesignated potential ACEC areas would be open to ROW on a case-by-case basis. Except where undesignated potential ACEC areas overlap the designated Unalakleet Wild River Corridor, all land would be open to locatable mineral entry. However, except for 528 acres within the undesignated potential Sheefish Spawning area, LMP is low, and mineral development and associated impacts are unlikely.

The majority of the undesignated potential ACECs would be managed as VRM Class III, with the majority of the Gisasa River, Inglutalik River, Kateel River, Shaktoolik River, Swift River Whitefish Spawning, and Tagagawik River undesignated potential ACEC areas managed as VRM Class IV. Although areas managed for VRM Class III could result in moderate change in landscape character, development in areas managed as VRM Class IV could result in major modification to the landscape that could adversely affect cultural and fisheries R&Is. Impacts to fisheries R&Is of undesignated potential ACECs would continue to be managed where undesignated potential ACEC areas overlap HVW. Under Alternative D, the following undesignated potential ACEC areas would overlap HVWs: Gisasa River and Nulato River areas (over 80 percent), Unalakleet Watershed area (74 percent), Shaktoolik River area (65 percent), Sheefish Spawning area (53 percent), and Ungalik area (57 percent).

The creation of Cultural Landscape Reports would be prioritized most in this alternative, which would provide a qualitative beneficial impact to ACEC values by increasing understanding and documentation of cultural, fisheries, and wildlife resources throughout the planning area.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Cultural R&Is: Reasonably foreseeable future actions that could affect cultural resources are primarily related to development of the Donlin Gold Project and the potential for exploration and development of locatable minerals in the planning area. Infrastructure development to communities also presents a high potential for impacts on cultural resources. Any development of roads and other transportation routes would result in additional surface disturbance.

Fish R&Is: Based on past commercial, subsistence, and personal use fisheries harvest data, resident fish production is generally forecast to remain stable in the planning area. The forecasted extent of disturbances to habitat is expected to remain minimal throughout the majority of the watersheds in the planning area. Activities that occur within the planning area that have the highest potential to affect fish production include placer mining, hard rock mining, and gravel mining; timber harvests; and stream crossings of roads, trails, and utility corridors in important fish habitats. Outside the planning area, commercial fishing is one of the biggest impacts on the R&I fisheries values. The undesignated potential ACEC areas contain habitat for spawning and rearing young. The fish populations are impacted in the ocean, where they are harvested commercially, an indirect effect on the fisheries value. Subsistence fishing and sport fishing directly affect the fisheries value but are not high enough uses to affect the R&I fisheries value in any undesignated potential ACECs.

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Alternative A continues managing 11 ACECs totaling 1,884,376 acres. It does not designate new ACECs. However, layered management for other special designations (VRM Class I lands) minimizes impacts from surface-disturbing activities in undesignated potential ACECs. Alternative A would **continue to stabilize** the existing trend of R&Is for fish through continued management of existing ACECs. Under Alternative A, cultural resources would **continue to degrade** despite ongoing management of existing ACECs.

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Alternative B designates 12 ACECs totaling 3,912,698 acres. Layered management through VRM, NTMC, and HVW designations would minimize impacts from surface-disturbing activities to undesignated potential ACECs to the greatest extent and magnitude of all alternatives. Alternative B would **continue to stabilize** the existing trend of R&Is for fish through management of potential ACECs. Under Alternative B, cultural resources would **stabilize**.

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

Alternative C does not designate ACECs. Layered management minimizes impacts from surface-disturbing activities to undesignated potential ACECs to a greater degree than Alternative A but less than Alternative B. Alternative C would **continue to stabilize** the existing trend of R&Is for fish and cultural resources through management of potential ACECs; however, this would occur in a smaller geographic extent than Alternative B.

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

Alternative D does not designate ACECs. Some layered management through HVW and NTMC designation would minimize impacts from surface-disturbing activities to undesignated potential ACECs; however, the geographic extent of areas receiving this management would be less than Alternative C. Cumulative impacts to fish and cultural resources would **continue to degrade.**

3.4.2 National Trails

Affected Environment

The INHT is the only national trail within the planning area and is the only National Historic Trail in Alaska. The INHT System is composed of 2,400 miles of trail segments and sites associated with a Gold Rush-era trail network that connected Seward to Nome via the Iditarod gold mining district. Historically, INHT travel occurred during winter and relied on roadhouses and cabins for shelter. Trail segments are still used as primary winter overland routes between communities. Approximately 1,600 miles of the INHT are on public lands and ROW identified for modern-day use. Over 700 miles of actively used trail segments are in the planning area, approximately 77 miles of which are on BLM-managed lands. The INHT's diverse climate, terrain, scenery, wildlife, and resources are largely unchanged since the Gold Rush, providing an opportunity to experience the natural primitive settings and challenges historically encountered. Contemporary use includes snowmobile travel between villages, trapping, firewood gathering, subsistence, and race events. Very little summer overland use occurs, although large waterways that freeze in winter see a substantial amount of summer motorboat traffic (i.e., Kuskokwim River, Innoko River, Yukon River).

Three INHT Primary Route segments, one Connecting Trail segment, and two historic sites are on BLM-managed public land within the planning area (Table 3.4.2-1).

Table 3.4.2-1: INHT Segments and Associated Historic Sites on BLM-Managed Land in the Planning Area

Site	Description
Farewell Burn	The NRHP-eligible, 20-mile Farewell Burn area is a contributing area of the Rainy Pass to Big River Roadhouse Primary Trail. It contains one historic roadhouse site and one BLM public shelter cabin associated with the INHT but is otherwise uninhabited. Use is associated with race events, trapping, subsistence, and bison hunts, with all occurring in winter.
Kaltag Portage	The NRHP-eligible 77-mile Kaltag Portage area includes 35 miles of BLM-managed trail between the Yukon River and Norton Sound. The eastern portion overlaps a portion of the Unalakleet Wild River Corridor. The uninhabited trail area contains prehistoric and historic sites and landforms, and contemporary BLM-managed public shelter cabins. Use is associated with transportation, subsistence, trapping, casual recreation, and race events. Recreational boat travelers on the Unalakleet occasionally use short portions during the summer.
Bonanza Creek	The 7-mile Bonanza Creek area of the NRHP-eligible Takotna-Flat Primary Trail is in the northeast-southwest upper Bonanza Creek area and includes the confluence of Ruby Creek. The remote area contains the remains of four historic roadhouse and cabin sites. The area is rarely used and only accessible overland in the winter or by helicopter in the summer and sees little human use of any kind.
Anvik-Shageluk-Iditarod	The Anvik-Shageluk-Iditarod segment includes 13 miles of BLM-managed trail on the 65-mile INHT Connecting Trail between Anvik and Shageluk and the abandoned Iditarod townsite. NRHP eligibility is unevaluated. Occasional use is associated with winter race events and a State of Alaska Iditarod Trail Public Safety Cabin.
Rohn Site	The 363-acre NRHP-eligible site at the confluence of the South Fork Kuskokwim River and Tatina River contains the historic Rohn Public Shelter Cabin, a gravel airstrip, and portions of the INHT Primary Route and Connecting Trail. Rohn is the most heavily used site on the INHT managed by BLM and is the only BLM shelter cabin accessible year-round.
Flat (Abandoned Townsite)	The NRHP-eligible abandoned Flat mining town and area was the primary source of gold transported on the INHT. The approximately 180-acre townsite contains buildings, structures, dredges, and road segments, some of which are co-located with the INHT. The BLM manages nearly 5 miles of the INHT within the Flat area.

Direct and Indirect Effects

Table 3.4.2-2 summarizes the nature and types of beneficial or adverse effects that could occur to the INHT, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.4.2-3 discloses the potential magnitude and extent of the effects by indicator, across alternatives. For both tables, the term "INHT" includes the acreages of proposed NTMCs.

Table 3.4.2-2: Summary of Effects to the INHT by Management Action

Types of Effects	Management Actions	Indicators
Surface-disturbing activities, including OHV travel, activities within ROWs and project development could directly impact the INHT surface through waterway interception, erosion, and rut creation or trail braiding. Activities could contribute to an overall decrease in trail quality by changing the visual and/or historic character of the INHT, or by possibly adversely impacting scientific information related to the trail.	• INHT NTMC Designation • Forestry and Woodland Harvest Decisions • Grazing Decisions • Mineral Decisions • Travel and Transportation Decisions • ROW Development Decisions	• Acres of the NTMC directly or indirectly affected by loss of integrity or destruction of physical remnants of the INHT • Acres of the NTMC where nature and purpose of the INHT is directly or indirectly affected.
Damage from wildland fire, erosion, downed trees, or changes in vegetation community from non-native plant species could impact the setting of the surrounding environment by altering the visual character or vegetation composition on lands adjacent to and surrounding the trail.	• Air Quality Decisions • NNIS Decisions • Forestry and Woodland Harvest Decisions • Travel and Transportation Decisions • Wildland Fire Management Decisions	• Acres of the NTMC directly or indirectly affected by change in cultural landscape that diminishes integrity of the trail's historic character.

Types of Effects	Management Actions	Indicators
Audible, pollution, and visual effects could diminish the integrity of the INHT's historic character by changing the setting and feeling of the trail.	• INHT NTMC Designation • Air Quality Decisions • NNIS Decisions • Forestry and Woodland Harvest Decisions • Travel and Transportation Decisions • Wildland Fire Management Decisions • Grazing Decisions • Mineral Decisions • Visual Resource Management • Air Safety and Night Lighting	• Acres of the INHT directly or indirectly affected by change in the cultural landscape that diminish the integrity of the INHT. • Adverse effects on the INHT per the NHPA.

Table 3.4.2-3: Summary of Impacts to the INHT by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
INHT NTMC within the planning area	No NTMC	288,466 acres	273,242 acres	273,242 acres
Lighting in the INHT NTMC viewshed	No current management	Prohibits air safety lighting Requires hooded surface lighting	Same as Alternative B	Restrictions determined on a case-by-case basis
VRM class (of the INHT)	Class I: 46,953 acres	Class I: 288,465 acres Class II: 1 acre	Class I: 46,953 acres Class II: 226,288	Class I: 46,953 acres Class II: 226,287 acres Class III: 1 acre
Non-subsistence house log harvest on case-by-case basis	See Note 1	13,759 acres	53,053 acres	273,242 acres
Closed to commercial woodland harvest		288,466 acres	46,953 acres	0 acres
Closed to grazing	46,953 acres	288,466 acres	273,241 acres	0 acres
Open to locatable mineral development in areas of medium or high mineral potential	See Note 2 and 3	0 acres	0 acres	0 acres
Open to salable mineral development		0 acres	226,289 acres	226,289 acres
NSO leasable	0 acres	0 acres	226,288 acres	0 acres
Open to leasing subject to standard stipulations	0 acres	0 acres	0 acres	221,689 acres
ROW exclusion areas	No current management	288,466 acres	0 acres	0 acres
ROW avoidance areas		0 acres	273,241 acres	172,598 acres
ROW permitted case-by-case basis		0 acres	0 acres	100,644 acres
INHT SRMA area	No current management	288,466 acres	273,242 acres	273,242 acres
Summer casual OHV access prohibited	All lands are undesignated	288,466 acres	225,925 acres	225,925 acres
Summer subsistence OHV access prohibited		241,512 acres	225,925 acres	0 acres
Summer casual OHV access limited to existing trails		0 acres	47,316 acres	46,953 acres
Summer casual cross-country summer OHV access		0 acres	0 acres	363 acres
Summer subsistence OHV access limited to existing trails		46,953 acres	363 acres	225,925 acres
Summer subsistence cross country OHV access		0 acres	46,953 acres	47,316 acres
Winter casual and subsistence use – snowmobiles only		288,466 acres	273,242 acres	273,242 acres

Notes:
1) All forest lands open to casual, subsistence, and commercial timber harvest, except for 46,953 acres of the Unalakleet Wild River Corridor that are closed to commercial woodland harvest.
2) The INHT NTMC does not cross any areas of medium or high LMP.
3) Unalakleet Wild River Corridor withdrawn from locatable and closed to salable minerals, including 115,622 acres of the Kaltag Portage area. Farewell Burn area closed to mining, except for metalliferous minerals

Effects from Alternative A

The BLM has not designated an NTMC for the INHT within the planning area; the INHT is only managed where the proposed Kaltag Portage corridor is co-located with the Unalakleet Wild River Corridor. The lack of a trail protection management framework leaves the NHT and associated resource values and qualities vulnerable to activities and land uses that could interfere with the trail's integrity and purpose.

All lands along the INHT except for the overlapping 46,953 acres of the Unalakleet Wild River Corridor are open to casual, subsistence, and commercial woodland harvest, and grazing leases for domestic livestock where feasible. Due to the lack of mineral potential along the INHT, mineral development is unlikely and therefore associated impacts to the integrity of the trail are also unlikely.

All lands within the planning area are managed as undesignated for transportation use, which allows unrestricted OHV travel within the proposed NTMC in summer and winter months. A substantial shortening of the winter travel season on the trail has occurred in the last 15 years. Due to the predominance of wetlands in the area, the INHT is highly susceptible to damage from OHV traffic in the summer months due to rutting and erosion. Current regulations do not limit the size and weight of OHVs allowed on the trail. Larger, heavier vehicles have the potential to create deeper and wider ruts in the trail that increase erosion. An increase in virtually any summer OHV use has the potential to create parallel ruts.

The BLM has not prescribed VRM classes to the majority of the INHT NTMC; therefore, no indirect beneficial or adverse impacts from VRM management would occur under Alternative A. The BLM manages the Unalakleet Wild River Corridor as VRM Class I, which includes 46,953 acres of the proposed Kaltag Portage NTMC area.

Effects Common to All Action Alternatives

All action alternatives would designate lands for the INHT NTMC. The purpose of the NTMC is to conserve the resources, qualities, values, associated settings, and the primary uses that support the nature and purpose of the INHT. The BLM would pursue opportunities to acquire lands or public use easements within the INHT NTMC to support the goals and objectives of the NTMC, which would enhance the user experience by providing consistent management to large portions of the INHT where possible. For all action alternatives, INHT SRMA management controls would include, but not be limited to, limits to group size, limits to duration of stay, waste management (human and litter), and permitted activities and commercial filming. Dispersed recreation uses would be lightly managed, with little to no cost to the public.

The BLM would prioritize preservation of historic structures along the INHT during wildland fires and include fuels reduction and treatment to further protect the structures. Prohibiting surface-disturbing vehicles and fire management activities in the NTMC would limit effects to the INHT and preserve the visual integrity of the trail corridor, but these limits to suppression could put the INHT and the surrounding landscape at a greater risk of impact from wildland fire. After a wildland fire, the BLM would implement emergency stabilization and burned area rehabilitation projects; this would support the restoration of the scenic and historic conditions within the NTMC. Only projects that resulted in short-term, minimal adverse impacts on air quality would be authorized in the NTMC, thereby maintaining the nature and purpose of the INHT. Leasable mineral actions would be managed with noise and atmospheric guidelines to maintain the current remote and isolated trail experience and maintain the integrity, nature, and purpose of the INHT.

Effects from Alternative B

Alternative B designates 288,466 acres in three NTMC areas: Farewell Burn (46,591 acres), Kaltag Portage (241,512 acres), and Rohn (363 acres). This action provides designated protection of 288,466 more acres of the INHT than Alternative A. The BLM would retain the Rohn parcel as an NTMC area, preserving the integrity of the heavily used site.

Alternative B prohibits surface-disturbing activities in the NTMC (unless allowed under ANILCA Title XI). This action would only authorize realty actions that are consistent with the integrity, nature, and purpose of the INHT and preserve the user experience. This action would prevent direct impacts on 288,466 acres, compared with Alternative A, thereby preventing visible surface disturbance in the NTMC and maintaining the nature, purpose, and integrity of the INHT.

Permits would be required for casual and non-commercial woodland harvesting within the NTMC, imposing controls on 288,466 acres of the NTMC, compared with Alternative A. Non-subsistence house log harvesting would be prohibited on 274,707 acres, compared with Alternative A. Commercial harvesting would be prohibited, removing an additional 196,111 acres from commercial harvest compared with Alternative A. Controls on casual, subsistence, and commercial harvesting would prevent potential direct and indirect impacts on the proposed NTMC. Management actions intended to prevent woodland harvest activities near the trail would preserve the viewshed, physical characteristics, and integrity of the trail. Grazing would be prohibited in the NTMC, compared to Alternative A, avoiding long-term impacts to the INHT from aesthetic changes and diminished integrity from overgrazing.

The NTMC would be withdrawn from locatable mineral exploration and development by retaining existing withdrawals and new proposed withdrawals, closed to salable mineral development, and closed to mineral leasing. These closures would prevent surface disturbance along the INHT within the NTMC and preserve the integrity, nature, and purpose of the trail.

Alternative B would prohibit summer casual OHV use on 241,512 acres of the NTMC compared to Alternative A and maintain the integrity of winter trail surfaces from summer damage to the INHT during the vulnerable summer months. The 46,953 acres within the overlapping Unalakleet Wild River Corridor would be limited to existing trails and to ATVs only. Unlimited subsistence OHV use on this section would pose a risk to the INHT, but current travel is almost non-existent in the summer months due to extensive wetlands and waterways.

The NTMC would be managed as a ROW exclusion area, which would minimize changes to the unique visual and historic qualities of the INHT and potential for noise impacts. Alternative B would not allow structures that require air safety lighting as required by FAA and would require hooded lighting for night lighting in the NTMC. These management actions would maintain the user experience during the dark winter months and preserve the integrity, nature, and purpose of the INHT; however, precluding lighting would mean that BLM would not be able to respond to ROW action requests within the NTMC. The preclusion of lighting or requirement for hooded lighting could also add to the costs for the public if existing structures need to be relocated or modified.

Alternative B would designate the NTMC as VRM Class I, except for 0.5 acre of the Kaltag Portage NTMC, which would be managed as VRM Class II, providing the strictest visual management of the NTMC to preserve the existing landscape character and maintain the isolated and primitive nature of the trail.

Effects from Alternative C

Alternative C designates 273,242 acres of three NTMC segments: Farewell Burn (31,367 acres), Kaltag Portage (241,512 acres), and Rohn (363 acres). This action provides designated protection of 273,242 more acres than Alternative A, and 15,224 fewer than Alternative B.

Alternative C authorizes surface-disturbing activities and other realty decisions within the NTMC if it is determined by the AO that they meet the VRM Class allocations for the disturbance area and impacts associated with the action would be consistent with the integrity, nature, and purpose of the INHT. This would prevent visible surface disturbance from within the NTMC.

Alternative C would require individuals to obtain permits for casual woodland harvesting within the NTMC but would allow subsistence harvesting without a permit in the NTMC. This action would impose controls on casual harvesting on 273,242 acres and would prohibit non-subsistence house log harvesting on 220,189 acres, compared with Alternative A. Alternative C would prohibit commercial harvesting on 46,953 acres of the Kaltag Portage NTMC and require permits for commercial harvesting on the remainder of the NTMC. Restrictions on casual and commercial harvesting would maintain low levels of direct and indirect impacts on the NTMC. Subsistence harvesting would continue in the Kaltag Portage NTMC area. Management under Alternative C would preserve the integrity, nature, and purpose of the INHT.

Grazing would be prohibited in the NTMC, compared to Alternative A. Effects from livestock grazing management on the INHT would be the same as those described under Alternative B.

Effects from withdrawals to locatable mineral exploration would be same as Alternative B due to lack of potential in the NTMC. Effects from salable mineral development would occur to a smaller geographic extent than under Alternative B and would be the same as Alternative D. Alternative C would apply NSO restrictions to leasable mineral development on 226,288acres, including 20,693 acres of the Kaltag Portage NTMC that was not protected under current leasing restrictions for the Unalakleet Wild River Corridor. Alternative C would prohibit surface disturbance within the NTMC from leasable mineral development but would allow disturbance adjacent to the NTMC.

Alternative C would prohibit summer casual OHV use and summer subsistence OHV use in 225,925 acres of the NTMC with similar impacts as those for Alternative B. Within the Unalakleet Wild River Corridor, casual use would be allowed on existing routes and trails, and overland subsistence OHV use would be allowed; however, the Unalakleet Wild River Corridor is not conducive to summer travel, so associated impacts from summer OHV use would be limited. Casual and subsistence OHV use would be allowed on existing roads and trails within the Rohn site.

The NTMC would be managed as a ROW avoidance area. Avoiding new ROW development would minimize changes to the unique visual and historic qualities of the INHT and potential for project-level noise impacts. Lighting restrictions and associated impacts are the same as those for Alternative B.

Alternative C would designate 226,289 acres of the NTMC as VRM Class II, which would provide visual management of 226,289 acres that are currently undesignated. Under Alternative C, the 46,953 acres of the Unalakleet Wild River Corridor would continue to be managed as VRM Class I, the same as Alternative A. Visual management under VRM Class II would retain the existing landscape character and maintain the isolated and primitive nature of the trail, but would not include the same management actions as the Class I designation under Alternative B, which allow only very low changes to the characteristic landscape.

Effects from Alternative D

Alternative D designates the same NTMC areas as Alternative C.

Surface-disturbing activities and other realty decisions would be authorized if the AO determines that the activities would not substantively conflict or interfere with the integrity, nature, and purpose of the INHT. These activities could interfere with the user experience.

Effects from casual harvesting and subsistence harvesting would be the same as Alternative C. Alternative D would have fewer restrictions on non-subsistence house log harvest or commercial woodland harvest in the NTMC than Alternative A. This action would increase the potential for direct and indirect impacts on the NTMC from heavy equipment, clear cutting, or overharvesting near the INHT. However, due to the remoteness of the NTMC and low probability for commercial woodland harvest adjacent to the INHT, the likelihood for Alternative D to substantially interfere with the integrity, nature, and purpose of the INHT is low.

All lands in the NTMC would be open to permitted grazing on a case-by-case basis, including the 46,953 acres in the overlapping Unalakleet Wild River Corridor closed to grazing under Alternative A. Grazing would be permitted in the NTMC only if it is determined to not adversely affect the historical and cultural setting of the INHT.

Alternative D would open 226,289 more acres of the NTMC to salable mineral development than Alternative B and would open 221,689 acres to mineral leasing subject to standard stipulations. This would increase potential for visual and audible effects from mining activity over Alternative B and C that could affect the historic integrity, nature, and purpose of the INHT.

Restrictions on summer casual OHV use in the NTMC would be similar to Alternative C. Effects from winter snowmobile-only casual and subsistence use would be the same as Alternative C. Alternative D would limit summer subsistence OHV access to existing trails on 225,925 acres in the NTMC, but 46,953 acres would be open to unrestricted summer substance OHV use. This action could cause multiple deep ruts on the INHT that could damage the surface of the winter trail treadway, and create hazards for trail users

The BLM would grant ROWs within the proposed NTMC on a case-by-case basis, similar to Alternative A. Structure lighting restrictions would be determined on a case-by-case basis with site-specific analysis that considers the darkness and winter-time use of the trail and the effect of lighting colors on trail experiences, impacting the user experience during darkness or winter time. Effects from VRM actions are the same as Alternative C, except that 0.5 acre of the Kaltag Portage NTMC area would be managed as VRM Class III, which would allow moderate changes to the characteristic landscape to less than 1 percent of the Kaltag Portage NTMC.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

The primary natural phenomena directly affecting trail resources are erosion, wildland fire, and changes to the length and intensity of winter weather. A number of historic roadhouses and shelter cabins originally located near waterways are either vulnerable to, or have been eroded or flooded by, shifting river and creek beds. Historic structures, historic trail landforms, and contemporary public facilities are also vulnerable to loss from wildland fire. **Trend: Degrading; not achieving the congressionally identified nature and purpose of the INHT.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Alternative A continues the current management for the INHT. It does not designate NTMCs for the INHT and does not include additional management actions that would limit potentially impactful activities such as OHV travel, grazing, mineral development, and woodland harvest. Increased use could occur as a result of increased number of permit requests, and the INHT could experience additional impacts from use of larger and heavier OHVs from new technologies. Likewise, proliferation of new user trails could result from the pipeline ROW for the Donlin Gold Project, once constructed. **Trend: Continue to degrade the resource at a similar rate to current conditions as it extends the current management practice. Not achieving the congressionally identified nature and purpose of the INHT.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Alternative B designates three NTMC areas associated with the INHT and includes the most management actions that would limit potentially impactful activities such as OHV travel, grazing, mineral development, and woodland harvest to the INHT. **Trend: Counter the existing degradation trend and moving toward maintaining and conserving the condition of the INHT and associated NTMCs; moves toward achieving the congressionally identified nature and purpose of the INHT.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

Alternative C designates three NTMCs associated with the INHT and includes additional management actions that would limit potentially impactful activities compared with Alternative A but to a lesser extent than Alternative B. **Trend: Counter the existing degradation trend and maintain and conserve the condition of the INHT and associated NTMCs in some cases. In other instances, degradation could be accelerated but to a lesser extent than under Alternative B. Moves toward achieving the congressionally identified nature and purpose of the INHT.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

Alternative D designates three NTMCs. Alternative D would offer fewer management actions that would limit potential for impacts to the INHT and adjacent NTMCs compared with Alternatives A, B, and C. **Trend: Continue to degrade the INHT and associated NTMCs at a similar or greater rate than current conditions and not achieve congressionally identified nature and purpose of the INHT.**

3.4.3 Wild and Scenic Rivers

Affected Environment

One designated WSR currently exists in the planning area. The upper 83 miles of the Unalakleet River are a designated Wild River, which was designated in 1983. The Unalakleet Wild River Corridor is managed by BLM under its WSR Management Plan (BLM 1983). In 2018, the BLM looked at 255 waterways in the planning area and determined that 18 were eligible for WSR designation (BLM 2018f). Table 3.4.3-1 summarizes the waterways and their eligibility criteria. All of the 18 eligible waterways would be recommended as suitable for WSR designation under Alternative B.

Table 3.4.3-1: Rivers Eligible for Wild and Scenic Designation

Watercourse	Approximate Total Length (miles)	Approximate Length on BLM Land (miles)	Approximate Acres in Corridor	Outstandingly Remarkable Values(s)	Region of Comparison
Anvik River	150	119	61,100	Fish, Cultural	Yukon River
Bear Creek (Nikolai)	51	41	17,224	Fish, Historic	Kuskokwim River
Big River	137	35	21,859	Fish	Kuskokwim River
Blackwater Creek	67	12	7,617	Fish	Kuskokwim River
Canyon Creek	16	16	8,233	Fish	Yukon River
Middle Fork Kuskokwim River	131	52	23,212	Fish	Yukon River
North Fork Unalakleet River	48	48	28,987	Fish	Unalakleet River
Otter Creek (Anvik)	35	35	20,130	Fish	Yukon River
Otter Creek (Tuluksak)	27	5	3,247	Fish	Yukon River
Pitka Fork Middle Fork Kuskokwim River	92	62	24,921	Fish, Historic	Kuskokwim River
Salmon River (Nikolai)	35	21	10,536	Fish, Historic	Kuskokwim River; Regional INHT
Sheep Creek	61	36	15,861	Fish	Kuskokwim River
Sullivan Creek	22	22	9,192	Fish, Historic	Kuskokwim River; Regional INHT
Swift River (Anvik)	32	31	16,381	Fish	Kuskokwim River
Tatlawiksuk River	81	17	8,975	Fish	Kuskokwim River
Theodore Creek	15	15	7,384	Fish	Yukon River
Yellow River	72	70	28,409	Fish	Yukon River
Yukon River	1291	13	18,908	Cultural	Yukon River

Under all alternatives, the designated Unalakleet Wild River Corridor would continue to be managed as a component of the National System consistent with the WSR Act, as amended. Resource pressures on the Unalakleet are low and are not forecast to substantially increase. As such, the beneficial or adverse effects of management actions on the designated Unalakleet Wild River are likely to be small because of the remoteness of the area, its low mineral potential, and low demand for travel or resource use.

In 2018, BLM determined that 18 additional waterways in the planning area meet WSR eligible criteria (BLM 2018f). Under Alternatives C and D, future development that lessens WSR values could occur near those waterways. However, because most of the waterways are located within remote, low mineral potential areas and travel and resource pressure is very low, such development is not currently foreseen. The types of effects to WSRs (designated, eligible, or recommended suitable) that could result from management actions and other resources and resource uses considered in the RMP/EIS are summarized in the tables below.

Direct and Indirect Effects

Table 3.4.3-2 summarizes the nature and types of beneficial or adverse effects that could occur to WSRs, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.4.3-3 summarizes the potential magnitude and extent of the effects by indicator, across alternatives.

Table 3.4.3-2: Summary of Effects to Wild and Scenic Rivers by Management Action

Types of Effects	Management Actions	Indicators
Managing the 18 eligible rivers as eligible or suitable would maintain or increase current management of the ORVs in these WSR corridors. Designation as not suitable would increase potential for impact to these ORVs.	• WSR Decisions (Managed as Eligible, Suitable, or Designated)	• Rivers (and acres of study/WSR corridor) managed per WSR Act or in BLM Manual 6400 (BLM 2012c)
Impacts to water quality, free-flowing condition, ORVs, or tentative/designated classification (wild, scenic, or recreational)	• Travel and Transportation Management Decisions • Land and Realty ROW Decisions • Forest and Woodland Products Decisions	Acres of eligible, suitable, or designated WSRs that overlap: • VRM Class I, II, II, or IV • ROW exclusion or avoidance areas • Areas closed to grazing • Areas closed to commercial woodland harvest • Areas closed to salable minerals • Areas closed to leasable minerals
Surface disturbance in riparian zones or floodplains could cause sedimentation and adverse impacts to water quality and ORVs. Special designations, soils management requirements, and ROW exclusion or avoidance zones in the floodplain would minimize impacts to WSR ORVs and water quality.	• Soils Decisions • Land and Realty ROW Decisions • Water and Fisheries Habitat Management Decisions	Acres of eligible, suitable, or designated WSRs that overlap: • ROW exclusion or avoidance areas • HVWs
Additional ("layered") management aimed at minimizing impacts to free-flowing condition, water quality, and ORVs would limit impacts to these attributes of a designated, eligible, or suitable WSR.	• Special Designations, such as ACECs • Water and Fisheries Habitat Management Decisions • Designation of HVWs • VRM Class Designations • INHT NTMC Designation	Acres of eligible, suitable, or designated WSRs that overlap: • ACECs • HVWs • INHT NTMC

Table 3.4.3-3: Summary of Beneficial or Adverse Impacts to WSRs by Indicator

	Alternative A	Alternative B	Alternative C[1]	Alternative D[1]
Quantitative Indicators (acres)				
WSR: Designated	46,953	46,953	46,953	46,953
WSR: Eligible	332,176	0	0	0
WSR: Suitable	0	332,176	0	0
HVW protections (protections vary by alternative)	0	332,327 (88%)[2]	307,191 (81%)[2]	301,919 (80%)[2]
VRM Class I	46,953 (12%)[2]	378,073 (100%)[2]	46,953 (12%)[2]	46,953 (12%)[2]
VRM Class II	0	0	147,941 (39%)[2]	72,895 (19%)[2]
VRM Class III	0	0	118,936 (31%)[2]	164,804 (43%)[2]
VRM Class IV	0	0	64,242 (17%)[2]	93,420 (25%)[2]
ROW exclusion	0	378,073 (100%)[2]	0	0
ROW avoidance	0	0	313,144 (83%)[2]	325,095 (86%)[2]
ROW linear projects avoidance	0	0	28,396 (7%)[2]	0
Closed to grazing	110,455 (29%)[2]	378,073 (100%)[2]	69,359 (18%)[2]	0
Closed to commercial woodland harvest	52,342 (14%)[2]	301,922 (80%)[2]	46,953 (12%)[2]	0
Closed to leasable minerals	174,231 (46%)[2]	362,860 (96%)[2]	46,953 (12%)[2]	46,953 (12%)[2]
Closed to salable minerals	83,679 (22%)[2]	371,173 (98%)[2]	54,755 (14%)[2]	56,777 (15%)[2]
Withdrawn from locatable minerals	83,679 (22%)[2]	371,173 (98%)[2]	46,953 (12%)[2]	46,953 (12%)[2]

	Alternative A	Alternative B	Alternative C[1]	Alternative D[1]
Qualitative Indicators				
Fisheries ORV impacts	• Fish ORVs are prioritized for all WSR rivers except the Yukon River. • PLO withdrawals limit surface disturbance for some of the eligible WSR rivers.	• Minimizes damage or destruction to fisheries from surface disturbance to the greatest extent; includes WSR management prescriptions limiting impacts to designated and suitable rivers.	• Minimizes damage or destruction to fisheries from surface disturbance in the Unalakleet Wild River Corridor. • Fisheries ORV management in other areas do not stem from WSR management actions and include a smaller area.	• Minimizes against damage or destruction to fisheries from surface disturbance in the Unalakleet Wild River Corridor. • Fisheries ORV management in other areas do not stem from WSR management actions and include the smallest area.
Cultural ORV impacts	Cultural ORVs prioritized for six eligible rivers.	• Minimizes damage or destruction of cultural sites from surface disturbance to the greatest extent. • Cultural ORVs prioritized for six suitable rivers. • VRM strongly protects historic landscape within and around designated and eligible corridors.	• Cultural ORV management does not stem from WSR management actions. • Cultural landscape reports prepared for four to six high-priority villages – may not intersect with WSR locations.	• Cultural ORV management does not stem from WSR actions. • Cultural landscape reports prepared for whole planning area.
Historic ORV impacts	Cultural ORVs prioritized for six eligible rivers, primarily those coinciding with the INHT.	VRM strongly preserves historic landscape within and around designated and eligible corridors.	Historical ORV management does not stem from WSR management actions.	Historical ORV management does not stem from WSR management actions.
Wild attributes impacts	Protection of wild character prioritized for designated and eligible rivers.	• Protection of wild character prioritized for designated and suitable rivers. • VRM strongly preserves wild character of landscape within and around designated and eligible corridors.	• Protection of wild character prioritized for designated river. • VRM strongly preserves wild character of landscape within and around designated river.	• Protection of wild character prioritized for designated river. • VRM strongly preserves wild character of landscape within and around designated river.

Note:
1) These values indicate acres of overlap with vacated study corridors to demonstrate management of WSR values that would still apply despite not being considered as suitable for inclusion in the National System.
2) Percentages are based on acres within designated or eligible WSR corridors (BLM 2018f).

Note that the acreages given in Table 3.4.3-3 include the effects of non-WSR actions proposed under each alternative, such as those associated with HVWs, where those actions intersect with the currently designated or eligible WSRs. All acreages are approximate and not surveyed. The table below provides the specific management actions that could contribute to the generalized impacts from the table above. Impacts in this context could be beneficial or adverse regarding WSR designation, ORVs, water quality, and free-flowing condition of the waterways.

Effects from Alternative A

Because no changes to management actions would occur under Alternative A, no beneficial or adverse impacts to WSR values are expected. The Unalakleet Wild River Corridor would be managed under the 1983 *Unalakleet National Wild River Management Plan* (BLM 1983). The 46,953 acres would continue

to be managed to maintain and enhance free-flowing condition, water quality, wild river classification, and ORVs. Eligible rivers (332,176 acres) would continue to be managed per the SWMFP and CYRMP, as applicable. Free-flowing condition, water quality, wild river classification, and ORVs would be managed per guidelines provided in BLM Manual 6400 (BLM 2012c) until a decision on their suitability is made. Grazing is currently allowed except along the Anvik and Unalakleet Rivers, although demand for this use is low. All of the eligible rivers are located in areas of low mineral potential, where entry or leasing is unlikely.

Effects Common to All Action Alternatives

Under all alternatives, the designated Unalakleet Wild River Corridor would continue to be managed as a component of the National Wild and Scenic Rivers System consistent with the WSR Act, as amended.

Effects from Alternative B

Of the alternatives, Alternative B would limit surface-disturbing activities to the greatest extent and magnitude near designated and suitable WSRs, resulting in fewer impacts to ORVs, water quality, and free-flowing wild attributes of these waterways. Table 3.4.3-4 summarizes the approximate acreage of management actions by waterway under Alternative B.

Table 3.4.3-4: Alternative B, Approximate Acreage of Management Actions by Waterway

Watercourse	HVW[1] Acres	VRM Class I Acres	ROW Exclusion Acres
Anvik River	61,100 (100%)	61,100 (100%)	61,100 (100%)
Bear Creek (Nikolai)	16,947 (98%)	17,224 (100%)	17,224 (100%)
Big River	21,837 (100%)	21859 (100%)	21859 (100%)
Blackwater Creek	227 (3%)	7,617 (100%)	7,617 (100%)
Canyon Creek	8,233 (100%)	8,233 (100%)	8,233 (100%)
Middle Fork Kuskokwim River	20,751 (89%)	23,212(100%)	23,212 (100%)
North Fork Unalakleet River	27,934 (100%)	27,934 (100%)	27,934 (100%)
Otter Creek (Anvik)	19,968 (99%)	20,130(100%)	20,130 (100%)
Otter Creek (Tuluksak)	3,247 (100%)	3,247 (100%)	3,247 (100%)
Pitka Fork Middle Fork Kuskokwim River	22,921 (92%)	24,921 (100%)	24,921 (100%)
Salmon River (Nikolai)	10,269 (97%)	10,536 (100%)	10,536 (100%)
Sheep Creek	9,241 (58%)	15,861 (100%)	15,861 (100%)
Sullivan Creek	9,192 (100%)	9,192 (100%)	9,192 (100%)
Swift River (Anvik)	16,381 (100%)	16,381 (100%)	16,381 (100%)
Tatlawiksuk River	8,975 (100%)	8,975 (100%)	8,975 (100%)
Theodore Creek	7,384 (100%)	7,384 (100%)	7,384 (100%)
Unalakleet River	34,808 (74%)	46,953 (100%)	46,953 (100%)
Yellow River	28,168 (99%)	28,409 (100%)	28,409 (100%)
Yukon River	5,030 (27%)	18,908 (100%)	18,908 (100%)
Total	333,384 (88%)	**378,073 (100%)**	**378,073 (100%)**

Note:
1) Percentages are based on the WSR study corridor for the respective river (BLM 2018f).

The 378,073 acres (3 percent of planning area) of river corridors managed as WSRs would continue to be managed to minimize impacts to WSR values per BLM Manual 6400 (BLM 2012c). All of the WSR corridors would become ROW exclusion areas. Casual summer OHV use would be prohibited in the

Unalakleet; subsistence use of ATVs would be permitted on existing routes. These limitations on surface disturbance near WSR waterways would avoid and minimize impacts to fish and cultural ORVs as well as wild character.

The 18 suitable river segments would be managed as VRM Class I, which limits impacts to wild attributes and cultural ORVs to the greatest extent. An additional 15-mile buffer outside of the WSR corridors would be managed as VRM Class II (4,396,984 acres, 33 percent of planning area). Within the corridors, 333,384 acres (88 percent of WSR acreage) would be classified as HVW and would be closed to salable minerals, withdrawn from locatable minerals, and be closed to leasable mineral development. Commercial woodland harvest would be prohibited on 80 percent of designated and suitable corridors, and transportation and travel management decisions would minimize surface disturbance that could have adverse impacts on water quality and fisheries. The entire planning area would be closed to grazing.

Effects from Alternative C

Alternative C would have greater beneficial impacts to water quality and ORVs than Alternative A, but fewer than Alternative B. The acreage covered by management prescriptions would be smaller than Alternative B, and the management directives would put less priority on the water quality, ORVs, and wild attributes. Table 3.4.3-5 summarizes the approximate acreage of management actions by waterway under Alternative C.

Table 3.4.3-5: Alternative C, Approximate Acreage of Management Actions by Waterway

Watercourse	HVW[1] Acres	VRM Class II Acres	VRM Class III Acres	ROW Avoidance Acres
Anvik River	59,589 (98%)	177 (<1%)	60,922 (100%)	60,057 (98%)
Bear Creek (Nikolai)	15,922 (92%)	17,224 (100%)	0 (0%)	16,453 (96%)
Big River	21,315 (98%)	21,044 (96%)	710 (3%)	21,315 (98%)
Blackwater Creek	198 (3%)	198 (3%)	7,419 (97%)	198 (3%)
Canyon Creek	8,233 (100%)	0 (0%)	3,502 (43%)	8,233 (100%)
Middle Fork Kuskokwim River	19,858 (86%)	19,988 (86%)	874 (4%)	19,858 (86%)
North Fork Unalakleet River	27,934 (100%)	27,930 (100%)	0 (0%)	27,934 (100%)
Otter Creek (Anvik)	19,968 (99%)	0 (0%)	6,420 (32%)	19,968 (99%)
Otter Creek (Tuluksak)	3,218 (99%)	0 (0%)	1,733 (53%)	3,218 (99%)
Pitka Fork Middle Fork Kuskokwim River	22,069 (89%)	23,885 (96%)	1,036 (4%)	22,833 (92%)
Salmon River (Nikolai)	10,269 (97%)	10,536 (100%)	0 (0%)	10,536 (100%)
Sheep Creek	121 (1%)	15,861 (100%)	0 (0%)	1,708 (11%)
Sullivan Creek	9,123 (99%)	9,192 (100%)	0 (0%)	9,192 (100%)
Swift River (Anvik)	16,381 (100%)	0 (0%)	9,668 (59%)	16,381 (100%)
Tatlawiksuk River	8,792 (98%)	0 (0%)	858 (10%)	8,792 (98%)
Theodore Creek	514 (7%)	0 (0%)	3,860 (52%)	7,308 (99%)
Unalakleet River	31,578 (97%)	0 (0%)	0 (0%)	46,953 (100%)
Yellow River	27,680 (97%)	0 (0%)	4,933 (17%)	27,680 (97%)
Yukon River	5,022 (27%)	1,906 (10%)	17,002 (90%)	13,336 (71%)
Total	**327,651 (83%)**	**147,941 (39%)**	**119,019 (31%)**	**341,540 (90%)**

Note:
1) Percentages are based on the WSR study corridor for the respective river (BLM 2018f).

Only the designated Unalakleet River (46,953 acres) would remain a WSR corridor under Alternative C and would have its wild attributes managed as VRM Class I. Additionally, a 15-mile buffer outside the designated corridor (976,185 acres) would be managed as VRM Class II. The corridor would be a ROW avoidance area. Casual OHV use would be allowed on existing trails, and subsistence ATV use would be allowed cross-country. No grazing or commercial woodland harvest would be allowed.

Although the 18 currently eligible rivers would not be recommended as suitable under Alternative C and would no longer be considered for inclusion in the National System, 275,612 acres (83 percent of the WSR study corridors) would be managed as HVW. As such, surface disturbance would not be permitted within the 100-year floodplain of these waterways (about 38,000 acres); they would become ROW avoidance areas, and they would be closed to grazing until the development of grazing management standards. They would be open to locatable mineral entry and salable mineral development on a case-by-case basis and open to NSO mineral leasing. All of this acreage is located in areas with low LMP, so mineral development is unlikely.

Effects from Alternative D

Alternative D would have the greatest potential for adverse impact on WSR ORVs and wild attributes. Table 3.4.3-6 summarizes the approximate acreage of management actions by waterway under Alternative D.

Table 3.4.3-6: Alternative D, Approximate Acreage of Management Actions by Waterway

Watercourse	HVW[1] Acres	VRM Class II Acres	VRM Class III Acres	ROW Avoidance Acres
Anvik River	59,589 (98%)	0 (0%)	61,100 (100%)	59,589 (98%)
Bear Creek (Nikolai)	15,922 (92%)	17,224 (100%)	0 (0%)	15,922 (92%)
Big River	21,315 (98%)	0 (0%)	8,223 (38%)	21,315 (98%)
Blackwater Creek	198 (3%)	0 (0%)	7,617 (100%)	198 (3%)
Canyon Creek	8,186 (99%)	0 (0%)	3,502 (43%)	8,186 (99%)
Middle Fork Kuskokwim River	19,858 (86%)	0 (0%)	12,174 (52%)	19,858 (86%)
North Fork Unalakleet River	28,396 (98%)	8,032 (31%)	19,899 (59%)	28,396 (98%)
Otter Creek (Anvik)	19,968 (99%)	0 (0%)	3,622 (18%)	19,968 (99%)
Otter Creek (Tuluksak)	3,218 (99%)	0 (0%)	1 (<1%)	3,218 (99%)
Pitka Fork Middle Fork Kuskokwim River	22,069 (89%)	13,307 (53%)	11,614 (47%)	22,069 (89%)
Salmon River (Nikolai)	10,269 (97%)	10,536 (100%)	0 (0%)	10,269 (97%)
Sheep Creek	121 (1%)	14,605 (0%)	1,256 (8%)	121 (1%)
Sullivan Creek	9,123 (100%)	9,192 (100%)	0 (0%)	9,123 (99%)
Swift River (Anvik)	16,381 (100%)	0 (0%)	7,238 (44%)	16,381 (100%)
Tatlawiksuk River	8,792 (98%)	0 (0%)	858 (10%)	8,792 (98%)
Theodore Creek	514 (7%)	0 (0%)	3,860 (52%)	514 (7%)
Unalakleet	31,578 (67%)	0 (0%)	0 (0%)	46,953 (100%)
Yellow River	27,478 (97%)	0 (0%)	4,933 (17%)	27,478 (97%)
Yukon River	0 (0%)	0 (0%)	18,908 (100%)	7,801 (41%)
Total	**301,919 (80%)**	**72,896 (19%)**	**164,804 (44%)**	**325,095 (86%)**

Note:
1) Percentages are based on the WSR study corridor for the respective river (BLM 2018f).

The designated Unalakleet River (46,953 acres) would remain a WSR corridor under Alternative D and would have its wild attributes managed as VRM Class I. Additionally, a 15-mile buffer outside the WSR (976,185 acres) would be managed as VRM Class III. The corridor would be a ROW avoidance area. Casual OHV use would be allowed on existing trails with ATV and UTV, and subsistence ATV and UTV use would be allowed cross-country. Grazing would be allowed if it is determined to be consistent with maintenance of ORVs for which the Unalakleet Wild River Corridor was designated. Commercial woodland harvest would be allowed in the Unalakleet Wild River Corridor.

Although the 18 currently eligible rivers would not be recommended as suitable under Alternative D and would no longer be considered for inclusion in the National System, 301,919 acres (80 percent of the WSR study corridors) would be managed as HVW. Under Alternative D, this means that these acres would become ROW avoidance areas but would be open to most other uses. Surface disturbance within the floodplain would require analysis of sedimentation effects and would be permitted on a case-by-case basis. Commercial woodland harvest and grazing would be allowed, although these locations are typically very remote, and demand for these uses is currently low. Mineral entry or leasing would be permitted under standard conditions in management plans. All of this acreage is located in areas with low mineral potential, so mineral development is unlikely.

VRM management actions for other resources under Alternative D would affect portions of the 18 currently eligible rivers. North Fork Unalakleet would be managed as VRM Class I within 1,057 acres (due to its overlap with the designated Unalakleet River), and 72,896 acres (19 percent of currently eligible acreage) along Bear Creek (Nikolai), the North Fork Unalakleet, Pitka Fork Middle Fork Kuskokwim, Salmon River (Nikolai), Sheep Creek, and Sullivan Creek would be managed as VRM Class II.

Because of the management actions for other resources that would affect these areas and the increase in VRM management for the designated Unalakleet, Alternative D would be minimize impacts to ORVs and water quality to a greater extent than Alternative A but less than Alternatives B and C. Maintenance of free-flowing conditions would not be addressed for the currently eligible rivers under Alternative D.

Cumulative Effects

The levels of activity and demand for access within the designated Unalakleet Wild River Corridor are expected to remain stable. No existing plans or pressure that could affect its classification as a wild river have been identified. The corridor continues to be used for primitive recreation opportunities. Historic and archeological values, wildlife/wildlands use, and water quality remain stable largely due to the remoteness of the WSR corridor.

WSR values of all rivers would be enhanced by inclusion in the National System. With the exception of the Big River, no development projects that are likely to affect these values have been identified. The currently permitted Donlin Gold Project pipeline ROW intersects the Big River. Under all action alternatives, the Big River would be managed as a ROW exclusion or avoidance zone, which would conflict with the currently permitted ROW.

Trends and Forecasts: Past and Present Actions

Designated and eligible rivers experience low use, with little pressure on water quality, free-flowing condition, wild river character, and ORVs. These qualities are expected to remain stable due to the remoteness of the rivers. All WSR rivers except for the Yukon have fish as an ORV. Ocean-based commercial fishing of anadromous fish that spawn in the planning area could adversely affect rates of return needed to stabilize or increase spawning runs of anadromous fish in WSRs.

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

The Unalakleet would be the only river managed as a WSR. Free-flowing condition, wild classification, ORVs, and water quality would be managed to maintain and enhance these attributes. Measures to minimize impacts to eligible rivers would be implemented under BLM Manual 6400 (BLM 2012c) until a decision on their suitability is made. **Trend: Continues to improve.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

Effects of WSR management decisions would be the same as under Alternative A. Other management actions proposed (HVW designation, ACEC designation, VRM classifications, establishment of the INHT NTMC) would minimize the potential for impacts to WSR values compared to Alternative A. **Trend: Continues to improve.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

The Unalakleet would be the only river managed as a WSR. Rivers eliminated from consideration in the National System would retain no special status, but applicable WSR values would receive protections from HVW, ACEC, VRM designation, or the INHT, where the WSR study area intersects with those designated areas. **Trend: Continues to improve**.

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

Effects of WSR management would be the same as Alternative C; however, management of formerly eligible rivers would be less from other management actions because there would be no designation of ACECs, acreage of HVW would be smaller, restrictions within HVWs would be less, and VRM intersections would be half the acreage as under Alternative C. **Trend: Stabilizes.**

3.5 Social and Economic Features

3.5.1 Support for BSWI Communities

Affected Environment

Socioeconomic Conditions

The planning area contains portions of five Census Areas: Bethel, Nome, Kusilvak (formerly Wade Hampton), Yukon-Koyukuk, and Dillingham. Of the approximately 60 rural communities within the planning area, Lingle and others (2011) identified 25 villages and census-designated places in the vicinity of BLM-managed public land within or near the planning area. Bethel is added because it is a major hub within the planning area, and Lime Village is added because it is adjacent to BLM-managed lands in the southwestern part of the planning area. The 27 communities range in size from 23 (Red Devil) to 6,080

(Bethel), with 8 having a 2010 population under 100, 12 between 100 and 500, and 7 over 500. Between 1990 and 2010, 11 of the communities increased in population, 11 decreased, and 5 stayed roughly the same size. Nearly all the communities are predominantly Alaska Native, with 15 having a population in 2010 that was over 90 percent Alaska Native and another 7 over 80 percent.

The planning area is largely roadless and the villages within it are isolated. The planning area's residents participate in a mixed subsistence-cash economy (Kurtak et al. 2010). With little cash available for store-bought items, subsistence hunting, fishing, and gathering is a major part of life in rural Alaska, often governed by both State and federal institutions and yet informed by informal institutions and local traditions.

The planning area supports just over 15,000 jobs, with about 7,200 jobs in the private sector and about 7,800 jobs in the government sector (Headwaters Economics 2013). Most of the communities rely on local government as a major source of jobs; the percent of workers employed by local government ranged from 20 percent in Bethel to 73 percent in Pitkas Point, with an average of 55 percent across all communities. Within the 7,566 private sector jobs, most (6,170) were services-related jobs, which include a wide range of sectors such as trade; transportation and utilities; information; financial activities; professional and business services; education and health services; and leisure and hospitality. Average annual wages across service sectors varied widely, from about $15,000 in leisure and hospitality jobs to about $51,000 in education and health services and information, with an overall annual average of about $40,000.

Unemployment rates in the four Census Areas have been consistently high, increasing from 10 percent in 2000 to 15.3 percent in 2012, and these reported rates could be low because they do not include "discouraged" workers (Association of Village Council Presidents 2014). The proportion of households receiving public assistance in the 27 communities ranged from 0 to 100 percent, with an average of 63 percent. The percent of persons living in poverty in the communities ranged from 8 percent in Bethel and 10 percent in Red Devil up to 80 percent in Stony River and 81 percent in Nikolai, with an average of 27 percent across all 27 communities.

Cost of living in the planning area (including fuel costs) is higher than averages for other places in Alaska and much higher than for the United States as a whole. High fuel cost is a key factor that has socioeconomic effects throughout the planning area. Higher fuel prices ripple through village lifestyles in many ways, including increasing the cost of store-bought foods through transportation costs and storage costs. Subsistence activity gets more expensive because of higher fuel costs for snowmobiles, four wheelers, and motorboats, while high food prices have increased the need for subsistence as a food source. The increased reliance on subsistence as a source of food, coupled with increased costs of getting to the fish, moose, or caribou, and a poor commercial fishing season, are problems in many villages.

The planning area communities have limited opportunities for commercial development, although larger communities such as Bethel serve as regional hubs and provide more opportunities for jobs. The role of commercial fishing as an industry and employer varies across the communities but is an essential component in many, as reflected by the number of people having a commercial fishing license or crew permit. Due to the remote location of the planning area to global markets, costs of transportation and infrastructure development are high. Outside of the Donlin Gold Project, mineral development potential is also weak in the planning area due to the low grade of minerals in the planning area. Mineral production contributes to economic activity throughout the state, though the majority of mineral material sales in the planning area occur on State and Native lands. The Donlin Gold Project is expected to employ an estimated 1,600 to 1,900 regional residents during construction and 500 to 600 during operation.

BLM-managed lands play a limited role in supporting jobs and income in the planning area given the geographic context of the planning area and the unfavorable economic conditions to support commodities markets. Recreation and visitation provide limited opportunities for rural communities to benefit from jobs and income; however, many of the direct economic benefits related to guided big-game hunts and fly-in fishing lodges and excursions, as well as competitive events, benefit the urban communities outside the planning area, such as Anchorage. However, the non-market values provided by the BLM-managed lands, NWR lands, National Park lands, State lands, and Native lands play a substantial role in the subsistence economy of planning area communities.

Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires that federal agencies identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations.

Low-income populations are identified using the statistical poverty thresholds from the Bureau of the Census data, per CEQ guidelines. In the United States as a whole, a total of 14.3 percent of the population lives below the poverty level; the comparable estimate for the State of Alaska was lower, at 9.5 percent (http://quickfacts.census.gov/qfd/states/02000.html).[6] For the BSWI RMP, any community in which the number of individuals below the poverty rate is greater than the national average of 14.3 percent was considered a low-income community. As a result, 21 of the 27 communities within the planning area are considered low-income.

Minority populations are present when either: (1) a minority population exceeds 50 percent of the population of the affected area; or (2) a minority population represents a meaningfully greater increment of the affected population than of the population of some other appropriate geographic unit as a whole. Nearly every one of the 27 communities in the planning area has a population that is more than 50 percent Alaska Native, for the people who, in the 2010 Census, reported that they were one race. Only Red Devil, McGrath, and Takotna do not reach the 50 percent level. However, when adding in the number of people who reported they were two or more races, one of which was Alaska Native, then Red Devil reaches 58 percent Native, adding it to the list of communities where environmental justice is a concern. Takotna has a poverty level (58 percent) that far exceeds the national average, so it is already a community where environmental justice is a concern. McGrath reaches 46 percent Native when adding in the number of people who reported they were two or more races, one of which was Alaska Native. McGrath's poverty level (13 percent) is just a percentage point below the national average, so in combination with its substantial Native population, it does not make sense to exclude it from environmental justice considerations. In summary, all of the 27 identified communities in the planning area are environmental justice populations.

BLM Support for Planning Area Communities

BLM management supports communities in the planning area through the actions and directions contained in the RMP, particularly those that manage subsistence resources and access to these resources. The BLM has the opportunity to support planning area communities by staying informed about resource uses and concerns particular to individual communities. The BLM also has the potential to support planning area communities through infrastructure development, or inversely, through restrictions of development or competing land uses that would conflict with subsistence activities. The BLM manages nonmarket resources essential to planning area communities (i.e., fish, cultural resources, and wildlife

resources) through the designation and management of ACECs and other mechanisms. The BLM also contributes to community economies via operational expenditures and BLM employee personal expenditures, as well as through employment (e.g., wildland firefighting positions).

Direct and Indirect Effects

Table 3.5.1-1 summarizes the nature and types of beneficial or adverse effects that could occur to social and economic conditions, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects.

Table 3.5.1-1: Summary of Effects to Social and Economic Conditions by Management Action

Type of Effects	Management Action	Indicators
Resources and habitats support subsistence lifestyles and the rural mixed economy. They could be affected by development, climate change, and other actions or conditions.	Actions designed to address impacts and risks to subsistence resources: • Wildlife Management • Designation of HVWs • Designation of ACECs • Lands with Wilderness Characteristics Management Decisions • Locatable Mineral Decisions	Level of management beneficial to subsistence resources and habitats.
Access to subsistence resources and species could be adversely affected by competition with other resource users, conditions, or BLM management actions that make access more costly or cumbersome.	• Recreation and Visitor Services Decisions (SRP management) • Travel and Transportation Management Decisions • Forestry and Woodland Harvest Management Decisions	Level of access to and competition for subsistence resources.
Opportunities for jobs and income are scarce in bush communities so there is community desire for BLM management to facilitate or at least not impede economic development opportunities.	Actions that have the potential to preclude economic development: • Mineral Withdrawal Decisions Actions designed to facilitate economic development: • Support for BSWI Communities	Level of effect on opportunities for jobs and income.
Communities have expressed a desire to work more closely with the BLM and have more of a say in management of BLM lands of value to community residents.	Support for BSWI Communities	Level of coordination and collaboration with communities.
All of the communities in the planning area are considered environmental justice communities due to their low-income or Alaska Native status, or both. Communities should not be disproportionately, adversely affected by BLM management actions.	The net effects of all of the above actions on communities in the planning area.	Level of effects on environmental justice populations.

Table 3.5.1-2 estimates the potential magnitude and extent of the effects by indicator, across alternatives. The table uses a rating system that describes the expected change from existing conditions resulting from implementation of an alternative. A rating of "–" indicates that the resource or socioeconomic condition would be expected to become worse under that alternative; a rating of "=" indicates that the resource or socioeconomic condition would remain about the same (although some aspects or components of that condition could increase/improve and some decrease/become worse); and a rating of "+" indicates that the resource or socioeconomic condition would be expected to improve under that alternative. In some cases, an extra "+" is added to indicate a larger difference relative to other alternatives.

Table 3.5.1-2: Summary of Impacts to Social and Economic Conditions by Indicator

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Level of management beneficial to subsistence species and habitats	-	++	+	=
Level of access to subsistence resources	=	=	+	+
Level of support for economic development	=	=	+	++
Level of coordination and collaboration with communities	-	+	++	++
Effects on environmental justice populations	-	+	+	=

Effects from Alternative A

This alternative represents existing management mandated by current land use plans for the planning area. Alternative A does not propose to designate any HVWs. The BLM has designated 11 ACECs covering 1,884,376 acres within the planning area, fewer than proposed under Alternative B, but retaining these existing areas, unlike Alternatives C and D where they would be eliminated. Alternative A would not provide any additional management of lands with wilderness characteristics or work to create connectivity corridors. The other alternatives all presume that some additional level of management is necessary to address possible threats to resources over the next 20 years, so this alternative is not responsive to community demands for ensured, sustainable management of subsistence resources. Alternative A has the fewest open acres where commercial woodland harvest is allowed by permit, instead relying primarily on issuance of permits on a case-by-case basis. This alternative also has the second-fewest acres open to locatable mineral development that overlap with medium or high potential areas for locatable minerals (about 271,000 acres). While this would help minimize impacts to resources and habitats, it also poses restrictions to possible future mining activities that could bring jobs and additional income to some community residents. There is support for more jobs in the planning area, as was demonstrated through the public comment in support of the Donlin Gold Project, but communities also do not want to see subsistence resources and access damaged by the mine and associated development, including the natural gas pipeline corridor that will bring energy to the Donlin operation.

Alternative A manages travel in the planning area as undesignated, with no limitations on summer or winter cross-country travel for subsistence (or casual use), with the exception of the Unalakleet Wild River Corridor where OHV travel would continue to be prohibited. Alternative A does not require a permit for subsistence collection of firewood and non-timber forest products (e.g., berries). Subsistence and casual use would continue under the management to which people are accustomed but would not address any issues or problems where they exist now or would be likely to develop under this alternative.

There would be no new attempts to restrict guides in areas near communities or to require any additional training on sport-subsistence conflicts. Currently, many residents point out that sport hunting can conflict with subsistence use and that communities do not necessarily reap the benefits of sport hunting occurring near communities. Thus, Alternative A would not be responsive to this concern.

None of the new efforts proposed for coordinating and collaborating with communities would be instituted. Existing levels and types of coordination would continue. No additional ACECs would be designated, including those proposed by communities and tribes, which could discourage future collaboration. The BLM would not seek out opportunities to assist with cultural tourism activities to communities or to work collaboratively to develop Cultural Landscape Reports or similar analyses that describe how communities use BLM-managed and other lands. Community leaders and residents have expressed the desire for the BLM to be a good neighbor, part of which is how effectively the BLM

coordinates and collaborates with communities and whether communities feel that their input and views are being considered and applied by the BLM. Alternative A would not meet these community needs.

Alternative A would lead to adverse effects on low-income and minority populations because no new actions would be taken to minimize impacts to subsistence resources, reduce conflicts with other uses, facilitate economic development, collect additional information about community use areas and values, or increase coordination and collaboration with communities. The other three alternatives address these issues to varying degrees. No other populations of users or stakeholders would be similarly affected, so this level of impact is considered a disproportionate, adverse effect on environmental justice populations.

Effects Common to All Action Alternatives

The three action alternatives contain a variety of measures to minimize impacts to subsistence uses of BLM-managed lands and address community demands for protection of and increased participation in management of resources and opportunities. These and other actions would reduce the potential impacts to subsistence resources.

The action alternatives generally pose fewer restrictions on OHV use and routes for subsistence use than for casual use, maintaining access while reducing potential conflict. The travel management goal for all alternatives is to "Maintain the BSWI planning area in such a manner that local communities retain unfettered access to the land." When the BLM develops travel management plans, it would consider travel routes and corridors among the communities and how to meet connectivity and destination goals for the communities. These travel management actions would help to meet community needs for travel, including access to subsistence resources.

The action alternatives also contain measures designed to reduce conflicts with hunting guides and outfitters and other users. In addition to allocation decisions, these measures include supporting community efforts to train residents as guides, considering community concerns when making decisions about allocation, and encouraging permitted hunting guide/outfitters to coordinate activities with local communities. Such actions could decrease conflicts and improve community-guide relations.

All the alternatives allow for ROW permitting for essential community infrastructure, including communication sites. Actions common to all action alternatives include making lands available for lease or sale to benefit local communities per the criteria for R&PP Act and considering land exchange and other mechanisms on a case-by-case basis to benefit public interests including community expansion or relocation. This would assure communities that management of BLM lands would not hinder development of needed infrastructure and allows the BLM to address impacts from climate change.

As funding permits, the BLM would continue to hire employees stationed in planning area communities. This could include implementing a program similar to the USFWS Refuge Information Technician system, whereby community residents are hired as BLM employees (or through a similar mechanism) to coordinate management activities and conduct outreach between the BLM and the rural communities. This hiring practice would establish a closer link between the BLM and communities, paving the way for better relationships, trust, and collaboration on management activities, as requested by community leaders and residents.

Effects from Alternative B

Alternative B emphasizes reducing the potential for competition between recreational and subsistence resources by designating key areas to manage long-term resource values within the planning area. This

alternative designates more miles as HVWs and generally provides management preventing and minimizing surface-disturbing activity in HVWs than do the other two action alternatives. Seven new ACECs would be established, 3 existing ACECs would no longer be managed as ACECs although some of their acreage would be managed as part of 7 new ACECs established, and 3 existing ACECs would no longer be managed as ACECs and none of their acreage would be managed as an ACEC. Total acres of ACECs would cover just under 4 million acres. Alternative B would also manage more land for wilderness characteristics either as a priority or to reduce impacts, while emphasizing multiple uses, than all other alternatives and manage two connectivity corridors. As a result, this alternative is the one most likely to minimize and avoid impacts to species and habitats valuable for subsistence and to successfully address current and future threats. This alternative also has the fewest acres open to locatable mineral development that overlap with medium or high potential areas for locatable minerals (about 202,610 acres). Alternative B would revoke about a third as many acres of 17(d)(1) withdrawals on locatable minerals than Alternatives C and D, providing a lower level of support for economic opportunity from locatable mineral development. While this would minimize and avoid impacts to resources and habitats important for subsistence, it also poses the greatest restrictions to possible future mining activities that could bring jobs and additional income to some community residents.

Alternative B has only a small amount of acreage (slightly larger than Alternative C) where summer subsistence OHV access would be prohibited and no limitations on winter cross-country travel for subsistence. This alternative generally is the most restrictive of casual OHV use, thereby reducing potential conflict with subsistence use. However, Alternative B is the only alternative under which the BLM would require a permit for subsistence collection of firewood and non-timber forest products (e.g., berries), which would be a concern for many residents who are accustomed to collecting without a permit. Many commenters noted how difficult it was to accept having to obtain a permit from an agency to do something they have always done. The associated conflict could be reduced somewhat because the system would be administered by hiring a local in a targeted area to issue permits and collect use information, but enforcement could be difficult. Access to affected subsistence resources could be more difficult due to this permit and other restrictive resource measures, which could make access more costly or difficult in some situations. This alternative also closes more acres to commercial woodland harvest than any other alternative.

Application of the largest CFZ among the alternatives would mean that SRPs for hunting guide/outfitters would not be authorized within a 10-mile radius of any established community in the planning area (818,395 acres of BLM-managed public lands). Requiring transporters that are also hunting guide/outfitters to obtain SRPs in the ERMA would reduce the risk of conflict with subsistence uses but could increase the burden on transporters that are also hunting guide/outfitters. Therefore, Alternative B would be the most likely alternative to address conflicts to the satisfaction of community residents, although some residents requested that the zones not be drawn around communities but from the outside boundary of State and private lands surrounding communities.

For nominated ACECs not found to be relevant and important for cultural resources, the BLM would work with tribes to gather more information on the particular areas and resources. The BLM would assist with cultural tourism activities to communities requesting assistance. The BLM would support rural BSWI communities by working collaboratively with them and other partners to develop Cultural Landscape Reports for a small number of communities. The BLM would have a greater presence in the communities, allowing for better relationships and trust to develop, which would improve the BLM's ability to manage its resources and make it more likely that management would be consistent with community needs.

Alternative B would lead to positive effects on low-income and minority populations—essentially all of the residents of planning area communities. New management actions would be implemented to minimize impacts to subsistence resources, reduce conflicts with other uses, collect additional information about community use areas and values, and increase coordination and collaboration with communities. However, this alternative would not be as favorable to market opportunities as the other action alternatives.

Effects from Alternative C

Alternative C emphasizes adaptive management at the planning level to protect the long-term sustainability of resources while providing for multiple resource uses. This alternative would manage approximately 2,000 more river miles in HVWs than Alternative D but fewer than Alternative B. Alternative C would manage lands with wilderness characteristics, though not as a priority or to the extent of Alternative B, and would establish one connectivity corridor. This alternative would open all areas of medium or high LMP to locatable mineral development. Alternative C would revoke all 17(d)(1) withdrawals on locatable minerals, providing a greater level of support for locatable mineral development than Alternative A. Alternative C, like Alternative D, considerably reduces the amount of land closed to salable mineral development, from 4,804,488 acres in Alternative A to 283,509 acres. While not providing additional management for resources and habitats, it provides the most opportunities for future mining activities that could bring jobs and additional income to some community residents.

Alternative C has only a small amount of acreage (slightly less than Alternative B) where summer subsistence OHV access would be prohibited and no limitations on winter cross-country travel for subsistence. This alternative is generally intermediate (between Alternatives B and D) regarding restrictions of casual OHV use. Alternative C would require a permit for personal use collection of firewood over 10 cords per household and non-timber forest products (e.g., berries) but would not require a permit for subsistence users. The requirement that non-subsistence users obtain a permit could reduce conflict and competition for resources among subsistence and non-subsistence users in some areas, providing the most benefit to subsistence users as compared to the other alternatives. As a result, Alternative C would improve community access to subsistence resources. This alternative opens a large proportion of acres to commercial woodland harvest by permit (second only to Alternative D) but also relies on case-by-case issuance of permits in more sensitive areas.

Alternative C would add measures designed to reduce conflicts with guided sport SRPs for hunting guide/outfitters, which would not be authorized within a 5-mile radius of any established community in the planning area (the 5-mile radius of all communities includes 95,307 acres of BLM-managed public lands). This acreage is considerably less than that proposed under Alternative B, so would be less compatible with community concerns, but would pose fewer restrictions on guided hunting. Transporters would not be initially required to obtain SRPs, as would be required under Alternative B, but if any increases in use, conflict, and public interest resulted in the objectives in the ERMA being exceeded, the BLM would engage in additional planning to maintain the objectives of the ERMA. Possible remedies could include, but are not limited to, requiring SRPs, limiting SRPs, and restricting seasonal visitation. This would focus attention on areas where conflicts developed, rather than making all transporters apply for SRPs. While this would pose less of a burden to transporters, it would require additional monitoring and not immediately address existing conflicts through the SRP process.

No ACECs would be designated, including those proposed by communities and tribes, which is not consistent with community requests for increased protection of resources. However, this alternative would provide more opportunity for BLM to work with the specific affected communities when faced with a

decision and to tailor resource management to specific conditions on the ground. The BLM would assist with cultural tourism activities to communities requesting assistance. The BLM would support rural BSWI communities by working collaboratively with them and other partners to develop Cultural Landscape Reports for a number of communities. Alternative C is responsive to community demands for greater involvement and participation in land management activities and would improve relations between the agency and communities.

Alternative C would lead to beneficial effects on low-income and minority populations—essentially all of the residents of planning area communities. New management actions would be implemented to minimize impacts to subsistence resources, reduce conflicts with other uses, collect additional information about community use areas and values, and increase coordination and collaboration with communities. However, some adverse impacts to subsistence resources could occur from allowable surface-disturbing uses.

Effects from Alternative D

Alternative D provides additional flexibility at the project-specific implementation level and fewer overarching management restrictions at the planning level. This alternative generally provides the fewest measures intended to reduce impacts to HVWs compared with Alternatives B and C. Alternative D would not provide any additional management of lands with wilderness characteristics or establish any connectivity corridors. Instead, decisions about resources and uses would be made on a case-by-case basis, providing the BLM the opportunity to more closely tailor management to individual community needs and situations, rather than relying on broad restrictions and allocations that may not be needed in a given situation. One of the tensions in the planning area, and in other parts of the state, is balancing scarce economic development opportunities with protection of subsistence resources and access. Alternative D provides an opportunity for the BLM to work with specific affected communities and to use increased community use data and traditional knowledge to inform its decision-making process. However, there is greater uncertainty regarding the outcomes of these case-by-case decisions compared to predetermined allocations or designations, which could be uncomfortable to some.

This alternative would open all medium or high LMP areas to locatable mineral development, the same as Alternative A. While not providing additional management for resources and habitats, it provides the most opportunities for future mining activities that could bring jobs and additional income to some community residents. Alternative D would revoke all 17(d)(1) withdrawals on locatable minerals, providing a greater level of support for locatable mineral development than Alternative A. Alternative D, like Alternative C, has fewer acres of land closed to salable mineral development than Alternative A and B.

Alternative D has no acreage where summer subsistence OHV access would be prohibited and has the fewest restrictions on winter cross-country travel for subsistence. This alternative generally is the least restrictive of casual OHV use among the action alternatives. Like Alternative C, Alternative D would require a permit for personal use collection of firewood and non-timber forest products (e.g., berries) but would not require a permit for subsistence users; the effects would be similar to those described under Alternative C and would likely be acceptable to subsistence users. Nearly all BLM-managed land in the planning area would be open to commercial woodland harvest by permit.

There would be no CFZs where permits for guided hunting would not be issued. Measures to limit guided sport hunting to address conflict and/or resource impacts would be determined on a case-by-case basis, rather than by predetermining limits. This could end up being effective at reducing conflicts and would

avoid establishing limits in places or instances where they might not be needed. However, the methods and effectiveness of measures eventually taken to reduce conflict would be more uncertain, and this approach is not responsive to community concerns about conflict and competition. Transporters would not be initially required to obtain SRPs, as would be required under Alternative B. However, if any increases in use, conflict, and public interest resulted in ERMA objectives being exceeded, the BLM would increase monitoring, outreach, education, and/or enforcement to those affected on a case-by-case basis, focusing attention on areas where conflicts developed. While this approach would pose less of a burden to transporters, it would require additional monitoring and not immediately address existing conflicts through the SRP process. Communities could also view this approach to conflict as less responsive than the actions taken under Alternative C, which includes restrictions and requirements to obtain SRPs as possible solutions.

No ACECs would be designated, including those proposed by communities and tribes, which is not consistent with community requests for increased protection of resources. However, this alternative would provide more opportunity for the BLM to work with specific affected communities when faced with decision and to tailor resource management to specific conditions on the ground. The BLM would assist with cultural tourism activities to communities requesting assistance. The BLM would support rural BSWI communities by working collaboratively with them and other partners to develop Cultural Landscape Reports for all communities, which is desirable when decisions are being made on a case-by-case basis. Alternative D would therefore increase community opportunities to collaborate in BLM management processes, consistent with community requests.

Alternative D would likely maintain or slightly improve conditions for low-income and minority populations—essentially all of the residents of planning area communities. This alternative would provide some additional management of subsistence resources, although not to the extent of the other action alternatives. Reducing conflicts between subsistence and other resource uses would continue to be a goal, but with actions taken on a case-by-case basis rather than with predetermined allocations or regulations. Alternative D's flexible approach would necessitate additional coordination and collaboration with communities, and the actions "common to all" include many community goals. For example, this is the only alternative that calls for a collaborative effort to develop Cultural Landscape Reports or similar analyses for all environmental justice communities.

Cumulative Effects

Because the BLM's mission is to manage resources and opportunities on lands it manages, it cannot directly address or attempt to resolve many social issues and trends facing rural communities in the planning area. These issues include fuel costs, opportunities for jobs and income, crime and mental health issues, education, or changes in population. However, BLM management could address some of these issues either incrementally or indirectly. Opportunities such as the Donlin Gold Project would be expected to have a greater effect on jobs than any of the actions contained in the alternatives. The BLM could provide the greatest assistance to communities by managing subsistence resources and access to them, supporting job and income opportunities where possible, and taking actions consistent with being a good neighbor.

Limited opportunities to increase jobs and income in the planning area, in the face of volatile global market conditions related to the cost of crude oil, belay the importance of maintaining a strong subsistence economy to support household livelihoods and community vitality. In times of rising oil prices, households rely increasingly on subsistence resources that can be gathered and produced with a low overhead cost for petroleum-based fuel products. Management under Alternative B is the most

restrictive (and Alternative D is the least restrictive) to activities that would adversely affect subsistence resources.

While Alternative A provides the least amount of restriction regarding where travel is allowed and thereby affords the greatest opportunity for people to minimize travel distances, it also includes few measures to guard against potential risks to subsistence resources caused by the development of projects. Alternative B would provide the greatest measure of protection for the maintenance and perpetuation of subsistence resources indirectly affected by the development of the Donlin Gold Project and the associated natural gas pipeline.

The development of ancillary facilities, temporary access roads, and airstrips developed in association with the pipeline could result in unintended development along this corridor, which affects subsistence gathering regions. Designations that provide measures to avoid and minimize impacts to aquatic and terrestrial habitats, such as HVW, ACEC, WSR, and areas managed to preserve wilderness characteristics, would reduce risk to sensitive areas important for the reproduction of subsistence values.

Changes in snowfall patterns and frequency, forest type, and overall shifting cliomes would likely drive changes in subsistence resource distribution related to plants, fish, wildlife, and timber. Such changes would increase economic insecurity of communities in the planning area reliant upon subsistence incomes due to increased time and fuel costs to locate resources or to cultivate new methods to secure subsistence livelihoods closer to their villages. When the effects of Alternative B are considered in context with the cumulative effects of climate change, measures to reduce direct and indirect stressors on ecological systems that support important subsistence species could result in a higher level of ecological resilience in responding to changing climate, which could result in decreased risk to households and communities reliant upon subsistence resources. On the other hand, Alternative D could be viewed as allowing BLM management to be more adaptable to changing conditions on a site-specific basis.

3.5.2 Subsistence

Affected Environment

Resources Harvested and Subsistence Harvest Levels

Subsistence in Alaska is the traditional way of life for many residents of the state and is central to the customs and traditions of many cultural groups. Major subsistence activities throughout the planning area include the hunting of birds, caribou, and moose; fishing for salmon, whitefish, and other fish; trapping; harvesting of plants and berries; and logging for firewood, housing, artwork and other customary uses. Appendix M describes available harvest information by community.

Subsistence Use Patterns

Communities use large portions of the planning area and subunits to harvest resources for subsistence, with overlapping use areas between communities (Map 3.5.2-1). Hunting and gathering follows a seasonal round that varies from year to year and between communities, based on local traditional knowledge and observations of resources, river and weather conditions, and migratory patterns. Subsistence harvesting follows a pattern of recurring use during specific seasons. Rural residents harvest fish, wildlife, and vegetation resources as a major part of their diet (BLM 2016f). River communities tend to harvest larger numbers of fish (primarily salmon), whereas other communities harvest more moose, caribou, and non-salmon fish. Extensive sharing networks exist between the Kuskokwim and Yukon

River communities (Ikuta et al. 2014). Sharing of resources between the two river drainages connects and interconnects the communities, and the use areas overlap.

Subsistence Use Areas

Subsistence use areas for communities organized by river drainage within the planning area are described in Appendix M. Limited data are available for specific places or areas essential to and for subsistence. Available data are mainly from technical reports by ADF&G Division of Subsistence. The lack of data for a community is not an indication that subsistence harvests lack importance in the area.

Non-Market Values of Subsistence Resources and Activities

Hunting and gathering of fish, wildlife, and vegetative resources have values that extend beyond economic worth, are passed generation to generation, and change in response to technology, resource availability and regulations. Hunting and gathering have shaped the culture, customs, and tradition of the people through generations. Customary trade and sharing within and between families is important to the ongoing relationships with neighbors inside and outside of the planning areas. Movements and timing of activities occur on seasonal rounds, dictated by availability of resources; and more recently by hunting, fishing, and trapping regulations, and employment and school schedules (Case 1986 in BLM 2016c).

Direct and Indirect Effects

Table 3.5.2-1 summarizes the nature and types of beneficial or adverse effects that could occur to subsistence, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.5.2-2 discloses the potential magnitude and extent of the effects by indicator, across alternatives. For additional information on the methods of analysis and summary of effects and indicators, see Appendix N. Management actions with the greatest likelihood to affect abundance of, availability of, and access to subsistence resources include ROW development, locatable mineral decisions, and OHV access. These actions are the primary focus of the Alaska National Interest Lands Conservation Act (ANILCA) Preliminary Section 810 Evaluation, provided in Appendix O of this Draft RMP/EIS.

Table 3.5.2-1: Summary of Effects to Subsistence by Management Action

Types of Effects	Management Actions	Indicators
• Impacts to subsistence resources would alter the traditional lifestyles of rural residents. • Mineral entry could result in impacts to abundance and availability of subsistence resources and access to resources. • New ROW development could result in impacts to availability of subsistence resources.	• Minerals Decisions in HVWs • Vegetation Management Decisions • Wildlife Management Decisions • Establishment of Innoko Bottoms Priority Wildlife Habitat Area • Establishment of Connectivity Corridors • BLM-permitted Surface Disturbance • Travel Management Decisions • FLPMA ROW Exclusion and Avoidance Areas • Permits and Leases • Land s and Realty Decisions • Recreation and Visitor Services Decisions (CFZs)	• Distribution and abundance of subsistence resources within the planning area • Current and past use of resources within the planning area • Availability and access • Subsistence closures

Types of Effects	Management Actions	Indicators
• Casual and subsistence OHV use could result in resource impacts within CSUs. • Summer subsistence OHV restrictions could limit access to subsistence resources. • Summer cross-country OHV use could result in resource degradation and impact ORVs.	• Travel Management Decisions • Establishment of Innoko Bottoms Priority Wildlife Habitat Area • Unalakleet Wild River Corridor • Designation of the INHT NTMC TMA • Recreation and Visitor Services Decisions	• Distribution and abundance of subsistence resources within the planning area • Current and past use of resources within the planning area • Availability and access • Subsistence closures

Table 3.5.2-2: Summary of Impacts to Subsistence by Indicator

Management Actions and Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres of SSS vegetation habitat with limited OHV use	Unspecified	OHV use limitations, trail relocation, trail hardening, or trail closure in: • Dwarf shrub and lichen: 2,711,156 acres (20%) • Sparse vegetation: 139 acres (<1%)	OHV use limitations, trail relocation, trail hardening, or trail closure in: • Dwarf shrub and lichen habitats: 2,711,156 acres (20%) • Sparse vegetation: 139 acres (<1%)	Unspecified
Acres open to commercial woodland harvest	1,644,588 acres (12%)	5,017,161 acres permitted (37%)	9,811,727 acres (73%)	13,423,449 acres (>99%)
Acres open to commercial woodland harvest on a case-by-case basis	10,237,555 acres (76%)	29,829 acres (<1%)	3,607,214 acres (27%)	42,445 acres (<1%)
Closed to Commercial Woodland Harvest	1,583,751 acres (12%)	8,418,904 acres (63%)	46,953 acres (<1%)	0 acres (0%)
Acres covered by management actions that target key wildlife habitat important for subsistence (type of management varies by alternative).[1]	Unspecified	Caribou and moose calving/wintering habitat 10,251,780 acres (76%)	Caribou and moose calving/wintering habitat: 540,896 acres (4%)	Caribou and moose calving/wintering habitat: 0
	Unspecified	Innoko Bottoms 236,556 acres (2%)	Innoko Bottoms 236,556 acres (2%)	Innoko Bottoms 236,556 acres (2%)
	Unspecified	2 connectivity corridors: 845,670 acres (6%)	1 connectivity corridor: 576,038 acres (4%)	Connectivity corridors: 0
Acres open to mineral development	294,325 acres open to locatable mineral development in medium or high LMP	202,610 acres open to locatable mineral development in medium or high LMP	565,489 acres open to locatable mineral development in medium or high LMP	565,489 acres open to locatable mineral development in medium or high LMP
	8,661,406 acres would continue to be open to salable mineral development	3,623,397 acres open to salable mineral development	• 6,645,750 acres open to salable mineral development • 6,536,635 acres open to salable mineral development case-by-case	13,182,385 acres open to salable mineral development
Acres of FLPMA ROW xclusion or avoidance areas	Unspecified	• 1,464,069 (exclusion) • 8,824,848 (avoidance) • 3,176,977 (open) • 342,360 (available for exchange)	• 0 (exclusion) • 7,069,494(avoidance) • 576,038 acres (avoidance for linear realty actions) • 5,820,362 (open) • 356,942 (available for exchange)	• 0 (exclusion) • 5,130,927 (avoidance) • 8,234,323 (open) • 0 (available for exchange)

Management Actions and Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Acres (or RM where noted) with high and medium mineral potential and open to development that overlap important wildlife habitat and important for subsistence.[2]	• Open: 294,325 (2%) • Riparian areas: 609 RM (2%) • Caribou calving: 0 • Caribou wintering: 14,001 (<1%) • Moose calving: 0 • Moose wintering: 294,325 (33%) • Innoko Bottoms: 0 • Important Bird Area: 0 • Muskox range: 0 • Wood bison range: 8,402 (<1%)	• Open: 202,610 (2%) • Riparian areas: 409 RM (1%) • Caribou calving: 0 • Caribou wintering: 133,467 (1%) • Moose calving: 5,414 (1%) • Moose wintering: 8,213 • Innoko Bottoms: 0 • Important Bird Area: 0 • Muskox range: 0 • Wood bison range: 4,639 acres (<1%)	• Open: 565,489 (4%) • Riparian areas: 11 RM (<1%) • Caribou calving: 0 • Caribou wintering: 403,146 (4%) • Moose calving: 529 (1%) • Moose wintering: 16,404 (2%) • Innoko Bottoms: 0 • Important Bird Area: 0 • Muskox range: 0 • Wood bison range: 9,672 (<1%)	• Open: 565,489 (4%) • Riparian areas: 1,173 RM (4%) • Caribou calving: 0 • Caribou wintering: 403,146 (4%) • Moose calving: 5,529 (1%) • Moose wintering: 16,404 (2%) • Innoko Bottoms: 0 • Important Bird Area: 0 • Muskox range: 0 • Wood bison range: 9,672 (<1%)
Acres of mineral leasing actions	• Closed: 5,202,221 • NSO: 17,521 • Open with Standard Stipulations: 8,246,152	• Closed: 9,350,881 • NSO: 1,597,599 • Open with Standard Stipulations: 2,517,414	• Closed: 46,953 • NSO: 6,824,035 • Open with Standard Stipulations: 6,594,906	• Closed: 46,953 • NSO: 236,556 • Open with Standard Stipulations: 13, 182,385
• Acres of the INHT SRMA • Acres managed as ERMA	• Unspecified • Unspecified	• 355,799 (SRMA) • 13,110,096 (ERMA)	• 340,574 (SRMA) • 13,125,320 (ERMA)	• 340,574 (SRMA) • 13,125,320 (ERMA)
Acres of summer OHV use prohibited	46,953 acres	Subsistence: 241,512 Casual: 565,955	Subsistence: 225,925 Casual: 225,925	Subsistence: 0 Casual: 225,925
Acres of summer OHV use limited to existing trails	Unspecified	Subsistence: 324,443 Casual: 12,899,939	Subsistence: 363 Casual 13,239,969	Subsistence 225,925 Casual: 46,953
Acres of winter OHV use: snowmobiles only	Unspecified	Subsistence: 4,423,914 Casual: 13,465,984	Subsistence 3,097,798 Casual: 3,097,798	Subsistence 225,925 Casual: 225,925

Notes:
1) Percentages listed are the percent of BLM-managed lands in the planning area.
2) Percentages for the area with no restrictions are the percent of BLM-managed lands in the planning area. Percentages for important habitat types are the percent of the total amount of that habitat on BLM-managed lands in the planning area.

Effects from Alternative A

Surface-disturbing activities could alter stream processes and degrade fish habitat, which could adversely affect water and fish resources. The duration of these impacts would be highly variable depending on the activity and the BMPs that are implemented. The BLM would continue to consider minimizing impacts to floodplains and crucial salmon spawning habitat when implementing actions, reducing the potential for habitat loss or degradation due to surface-disturbing activities, human disturbance, and reduction in salmon. BMPs include the avoidance and minimization of impacts to streams and associated fish habitats, including avoidance of known spawning habitat and migration/spawning time periods.

Under Alternative A, mineral leasing is closed in essential riverine habitat to minimize impacts to anadromous spawning areas. The closed areas equal 12,857 miles of streams (39 percent of total streams on BLM-managed land) and 20,430 acres of waterbodies (24 percent of total waterbodies on BLM-managed land). The geographic extent of management actions under Alternative A would be less than under the action alternatives, as HVWs would not be defined or designated. Therefore, the amount of fisheries resources managed as HVWs would also be less than under Alternatives B or C.

Existing land use plans provide some management for floodplains, wetlands, riparian areas, threatened and endangered plant habitat and caribou habitat (lichen-rich areas) and provide guidance for sustainable

yield of forest resources that would benefit vegetation communities. Alternative A does not have management direction specific to seeding and planting for reclamation and/or restoration activities. There would be no additional management specific to vegetation or special status plants in the planning area that would benefit subsistence resources. No acres of land would be managed to minimize impacts to vegetation, and there would be no formal program for controlling invasive weeds.

Existing conditions would continue under Alternative A. BLM would consider impacts to wildlife, such as caribou and moose, used as subsistence resources when evaluating actions in the planning area that could affect subsistence resources and would implement mitigation on a case-by-case basis. Alternative A could have a long-term impact on migration and species movement if future development occurs in areas where it would fragment ranges and reduce habitat connectivity, because Alternative A does not include establishment of connectivity corridors. However, the proposed connectivity corridors under Alternatives B and C occur in areas that do not have medium or high LMP, so future development could have a low impact on migration for species important to subsistence under this alternative even without the corridors.

Under Alternative A, 8,661,406 acres (64 percent) of the planning area would continue to be open to locatable and salable mineral development. Impacts could occur to wildlife and wildlife habitat, including habitat degradation, fragmentation, and wildlife moving away from mineral activity. If these impacts were to occur, they would be of high magnitude; however, likelihood for salable mineral development is low due to low potential and demand in the planning area. Likelihood of impacts from locatable mineral development in areas of medium to high mineral potential is high. Alternative A would continue to allow locatable mineral development in 294,325 acres on medium and high LMP areas, constituting 52 percent of medium or high LMP areas or 2 percent of total BLM-managed land in the planning area, which is more than Alternative B but less than Alternatives C and D. Areas open to locatable mineral development with medium to high mineral LMP include important wildlife habitat areas as described in Appendix N.

Under Alternative A, new ROW would be permitted on the entire planning area on a case-by-case basis, which would affect availability of subsistence resources. The communities most likely to experience impacts to availability and access to subsistence resources from new ROW development under Alternative A include Aniak, Anvik, Bethel, Crooked Creek, Chuathbaluk, Grayling, Holy Cross, Kaltag, Lime Village, Lower Kalskag, Marshall, McGrath, Nikolai, Nulato, Russian Mission, Shageluk, Sleetmute, Stony River, Unalakleet, and Upper Kalskag. Alternative A would continue to include management stipulations that would minimize impacts to fish, wildlife, and SSS in the planning area.

Approximately 8,246,152 acres (61 percent) would remain open to mineral leasing with standard stipulations and 17,521 acres (less than 1 percent) would be designated as NSO leasable. Alternative A could impact subsistence resources to a greater geographic extent than Alternatives B and C but would have higher magnitude impacts compared to all action alternatives due to fewer BMPs, SOPs, and required reclamation than would be implemented under the action alternatives.

Alternative A does not require a permit for subsistence collection of firewood or non-timber forest products (e.g., berries). Subsistence and casual use would continue under the management to which people are accustomed but would not address any issues or problems where they exist now or would be likely to develop under this alternative. Under this alternative, personal use and subsistence woodland harvest area permits for the harvest of house logs, poles, and firewood are issued on a case-by-case basis. Existing conditions would be maintained.

Due to an increase in vehicle technology, there would be more frequent and intense conflicts between motorized and nonmotorized users. The BLM would not designate Recreation Management Areas, and in general, would support dispersed and unstructured recreation opportunities throughout the entire decision area. Continuing to issue SRPs on a case-by-case basis would allow outfitters to accommodate demand for guided hunting and fishing (which could conflict with subsistence activities and compete for resources), special events on the INHT, and other specially permitted activities. Over time, the expanding number and size of SRP activities would increase the potential for conflicts with subsistence users and damage natural resources that contribute to the recreation setting for all users. These impacts to subsistence would be greatest in areas of high recreation use, such as along the INHT.

All lands in the planning area are managed as undesignated for travel and transportation management, which allows full access to the planning area for subsistence uses. Traditional means of access such as outboard motorboats, airplanes, dogsleds, and snowmobiles are allowed for all river users. Other means of access, such as inboard jet boats, airboats, hovercraft, and ATVs are not allowed in the Unalakleet Wild River Corridor. OHV vehicle use could result in loss or degradation of subsistence resource habitat from physical disturbance and could fragment habitat if new trails were created. OHV use could also create additional access for activities that compete for subsistence resources, such as sport hunting and fishing. Due to the lack of management direction on OHV use, the route network would continue to expand which would adversely affect subsistence resources. Additionally, restricting summer subsistence OHV use in the Unalakleet Wild River Corridor could obstruct access to fishing and harvesting subsistence use areas. The communities most likely to experience impacts to the availability of subsistence resources from summer OHV restrictions under Alternative A include Aniak, Anvik, Bethel, Crooked Creek, Chuathbaluk, Grayling, Holy Cross, Kaltag, Lime Village, Lower Kalskag, Marshall, McGrath, Nikolai, Nulato, Russian Mission, Shageluk, Sleetmute, Stony River, Unalakleet, and Upper Kalskag.

Effects Common to All Action Alternatives

Under each of the action alternatives, subsistence users would benefit from efforts to minimize impacts to water resources and fisheries and wildlife habitats. Maintenance of healthy watersheds, riparian areas, and associated fish and wildlife habitats would support continued harvests of subsistence resources including fish, vegetation and woodland products, land mammals, waterfowl, and small furbearers. Under all of the action alternatives, subsistence resources would be managed to sustain wild resource population levels to provide for continued rural economic opportunity and support subsistence lifestyles.

The BLM would implement actions to consolidate land management that could affect the amount of habitat that is important for subsistence use and resources. The BLM would consider objectives to manage subsistence resource habitat and reduce habitat fragmentation when making decisions about land disposal, exchange, and acquisition. Additionally, the BLM would attempt to co-locate linear projects within existing ROWs and would require ROWs to provide for unimpeded caribou passage in all caribou connectivity corridors or where essential winter habitat exists.

Recreation and travel management would have the potential to affect subsistence by influencing the amount of associated human presence and habitat disturbance. Proposed management would allow the BLM to reduce the impacts on important subsistence resource areas and limit the potential for conflicts between user groups. The BLM would seek to reduce conflicts between recreation and subsistence users by taking community interests and impact into account in hunting guide permitting decisions and by encouraging hunting guide/outfitters to coordinate with local communities. Resource competition from recreational users would be mitigated through more lenient restrictions on subsistence-use motorized

watercraft, snowmobiles, and OHVs. The BLM would support overland travel needed to access subsistence resources and travel between communities to share subsistence resources by working with communities to maintain existing trail systems and by managing winter and summer travel routes. The BLM would also support the development of communications infrastructure, such as cell phone towers and emergency shelter cabins. Communications infrastructure would improve safety for subsistence harvesters.

BMPs/SOPs (Appendix K) would include measures to minimize degradation of habitats and expedite reclamation of disturbed areas. These measures would help reduce the level of impact to wildlife habitats and subsistence in areas that remain open to locatable and salable mineral development.

Effects from Alternative B

Under Alternative B, there would be more river miles in HVWs than under Alternatives C and D, which would result in fewer adverse impacts on water quality and fisheries than the other alternatives. Any proposals to develop land, water, or resources in the 100-year floodplain associated with HVWs (21,382 river miles; 65 percent of river miles on BLM-managed lands) would be required to demonstrate that the development would not diminish the quality or diversity of habitats needed for fish and wildlife populations, including those used for subsistence. HVWs would be withdrawn from locatable mineral development and closed to salable and leasable mineral development. These restrictions from potential mineral development would help maintain the quality and diversity of areas of high fish and wildlife habitat value and river-based subsistence use. Alternative B would result in long-term improvement to distribution and abundance of subsistence resources in HVWs and would minimize impacts on streams and waterbodies, more than any other alternative.

OHV use limitations, trail relocation, trail hardening, or trail closures implemented to reduce or eliminate degradation to SSS flora habitats would minimize impacts to vegetation in these areas. Only native seeds and propagules would be used for reclamation and restoration and could include species that are used for subsistence, which would help maintain distribution and abundance of subsistence resources.

Alternative B would result in fewer impacts than Alternative C or D on wildlife and thereby subsistence resources due to construction and mineral development, which could interfere with or displace subsistence activities in migratory bird habitat, the Innoko Bottoms Priority Wildlife Habitat Area, and in moose and caribou calving and wintering habitat. Wildlife and SSS are important to subsistence in the Innoko Bottoms. Fall hunting for moose and waterfowl is largely by Yukon and Innoko River village residents using river boats. A winter subsistence moose hunt occurs in February and March using snowmobiles. Moose are an important subsistence resource for village residents of the area. Moose populations in the Innoko Bottoms Priority Wildlife Habitat Area are recognized as having some of the highest population densities in the State of Alaska by both Alaska resident and non-resident sport and subsistence hunters. The two proposed connectivity corridors would be withdrawn from locatable mineral entry, designated as NSO for leasable development, closed to salable development, and designated as NSO for surface-disturbing BLM-permitted activities. Wildlife management actions under Alternative B would result in a greater magnitude and extent of beneficial impacts compared to all other alternatives.

The connectivity corridors would be ROW exclusion areas, and casual use airboats and hovercraft would have restrictions. These actions would reduce disturbance to wildlife and subsistence activities, and minimize impacts to these key habitats by reducing the potential for habitat loss, degradation, and fragmentation. The area managed as connectivity corridors under Alternative B would be 845,670 acres

(6 percent of the planning area). These management actions would maintain the existing distribution and abundance of bird and terrestrial wildlife subsistence resources in the planning area.

Under Alternative B, 3,623,397 acres of the planning area would be open to locatable and salable mineral development which is less than half of that open under Alternative A. There would be 202,610 acres open to locatable mineral development within areas of medium or high LMP (or 36 percent of that available on BLM-managed land in the planning area), where development and associated impacts to availability of subsistence resources is likely. Areas that would be open to locatable mineral development in areas of medium to high LMP include the important wildlife habitat areas described in Section 3.2.7 that are also important to subsistence. Since Alternative B would open a smaller area to locatable mineral development, particularly in areas with medium or high LMP, than all other alternatives, it would reduce the potential for impacts to wildlife and SSS habitat over a larger geographic extent than current management as well as Alternatives C and D. The communities most likely to experience impacts to availability of subsistence resources from locatable mineral development under Alternative B include Aniak, Crooked Creek, Chuathbaluk, Lower Kalskag, McGrath, Sleetmute, and Upper Kalskag.

Alternative B would include the most restrictions on leasable and salable mineral development, although potential for impacts would be low due to low salable and leasable mineral potential and demand in the planning area. BMPs/SOPs would include measures to minimize habitat degradation, expedite reclamation of disturbed areas, and minimize conflicts with subsistence activities and access (see Appendix K). These measures would help reduce the level of impact to wildlife habitats important to subsistence and on subsistence activities in areas that would be open to mineral development.

Alternative B would have the fewest acres open to new ROW development compared to all alternatives due to areas proposed for ROW exclusion and avoidance, which would minimize habitat fragmentation and degradation in these areas and impacts on availability of subsistence resources. It would also minimize the unintentional creation of new access routes to uses competing with subsistence activities. ROW exclusion areas would occur on 1,464,069 acres (11 percent) of the planning area and include high-value wildlife habitat, such as Innoko Bottoms, connectivity corridors, and the Unalakleet Wild River Corridor. ROW avoidance areas would occur on an additional 8,824,848 acres (66 percent) of the planning area and would minimize impacts on fish and wildlife habitats in additional areas. Restrictions on where trapping /subsistence cabins could occur would reduce impacts in fish, wildlife and subsistence locations and would provide a minimal benefit to those resources but could also restrict the traditional subsistence use of cabins. Areas with the greatest potential for habitat loss, degradation, and fragmentation from development of ROWs that could reduce availability of subsistence resources would be in the 3,176,977 acres (about 24 percent of BLM-managed land in the planning area) outside of ROW exclusion and avoidance areas. The communities most likely to experience impacts to access and availability of subsistence resources from new ROW development under Alternative B include Aniak, Crooked Creek, Holy Cross, Kaltag, McGrath, Marshall, Nikolai, Sleetmute, Unalakleet, Upper Kalskag, and Lime Village.

Available exchanges could reduce the total amount of wildlife habitat under BLM management depending on the areas that were added to BLM-management under the exchange. Available exchanges and acquisitions under Alternative B that would affect important wildlife habitat and subsistence in the planning area include reductions in riparian area, moose calving and wintering areas, caribou crucial

winter habitat, and Innoko Bottoms Priority Wildlife Habitat Area. These reductions could be offset to some degree by available acquisitions, which would include a smaller geographic extent of riparian areas and moose calving and wintering areas, and no caribou crucial winter habitat, but a greater extent of Innoko Bottoms Priority Wildlife Habitat Area. Adverse effects to subsistence resources could result if there were reductions in harvest success and limits in access to resources in areas where BLM is no longer managing the land.

Under Alternative B, 5,017,161 acres (37 percent of the planning area) would be open for commercial harvest and 29,829 acres (less than 1 percent of the planning area) would be open for commercial harvest on a case-by-case basis. Under this alternative, house log harvesting would not be allowed within the riparian zone of perennial streams in personal use and subsistence woodland harvest areas. Subsistence use and personal use gathering of forest firewood more than that required for incidental use for camping and forestry products would require a permit (e.g., by instituting a pilot project to hire a local in a targeted area to issues permits and collect use information and/or include maps or questions in local subsistence surveys). This would apply to all areas within 15 miles of a river area open for subsistence and personal use woodland harvest, all areas within 25 miles of a community open for subsistence and personal use woodland harvest, and all burned areas outside of the areas above, open for subsistence, and personal use woodland harvest. This alternative would also include additional restrictions that would reduce impacts to fish, wildlife and SSS habitat in 100-year floodplains of HVWs, the INHT NTMC, lands managed for wilderness characteristics as a priority, and ACECs which would be closed to commercial woodland harvest. Permits would be granted outside these areas on a case-by-case basis dependent on resource concerns. These permits would include required stipulations to minimize harvesting impacts. Under Alternative B, cutting or otherwise disturbing trees used for trapping would be prohibited. This could limit the success of subsistence trapping activities that require these materials.

Under Alternative B, the entire planning area would be managed either as SRMA (355,799 acres) and ERMA (13,110,096 acres) and would have an OHV designation of “Limited.” Compared with Alternative A, there would be a reduction in the potential for user conflicts. The 355,799-acre INHT SRMA would provide outcome-focused management objectives and setting characteristics intended to reduce conflicts while supporting trail-based recreation activities and positive user experiences. Alternative B applies a CFZ within a 10-mile buffer surrounding BSWI communities. SRPs for hunting guide/outfitter businesses would not be authorized within a 10-mile radius of any established community in the planning area (10-mile radius of all communities includes 818,395 acres of BLM-managed public lands). This would reduce conflicts with subsistence users in comparison to Alternative A, although shuttle service operations would be allowed throughout the ERMA with a required SRP.

OHV designation in the Unalakleet Wild River Corridor would be limited. Casual summer access would be prohibited, and subsistence summer access would be limited to existing trails, primitive roads, and roads. This would remove potential for use conflicts between recreational and subsistence users. Winter casual use would be permitted by snowmobile only, providing for recreation opportunities that do not cause resource damage. Because winter recreation use is low, it is not expected to conflict with subsistence or other casual uses of the area.

Casual use of airboats and hovercraft would not be allowed on non-navigable waterways on BLM-managed land within the designated connectivity corridors (845,670 acres [6 percent]) or Innoko Bottoms Priority Wildlife Habitat Area. These actions would help reduce impacts to habitat used by caribou and

other wildlife important to subsistence. In Innoko Bottoms, restrictions on airboats and hovercraft would reduce disturbance impacts to subsistence resources and avoid conflicts with recreational users.

Alternative B would be more restrictive on summer overland travel for casual use (565,955 acres, 4 percent of the planning area) than for subsistence uses. Alternative B is more restrictive on overland travel than Alternatives C and D. OHV restrictions would impede subsistence activities but would also minimize impacts to subsistence resources and reduce the potential for competition between casual and subsistence users by providing more access to more of the planning area for subsistence uses. However, the 241,512 acres (about 2 percent of BLM-managed land in the planning area) that would be closed to summer subsistence OHV use would impact access to hunting, fishing, and harvesting subsistence use areas.

Impacts from OHV restrictions for winter or summer use could occur for the following communities: Anvik, Grayling, Holy Cross, Kaltag, McGrath, Nikolai, Shageluk, Sleetmute, Stony River, Unalakleet, and Lime Village.

Designation of the two connectivity corridors and Innoko Bottoms Priority Wildlife Habitat Area and associated management actions under Alternative B would minimize impacts to subsistence resources and reduce subsistence conflict with recreation use in those areas.

Effects from Alternative C

There would be 14,888 river miles (about 45 percent of streams in the planning area) within HVWs under Alternative C. Certain management actions that would apply to the entire planning area under Alternative B would only apply to HVWs under Alternative C, including avoidance of permanent structures in the 100-year floodplain and restrictions on surface-disturbing activities or permanent structures in the 100-year floodplain of fish-bearing streams. Therefore, the incidental beneficial impacts to subsistence fish resources would be less than under Alternative B. Compared to Alternative B, this alternative has a greater potential to impact fish and aquatic resources due to fewer exclusions to surface-disturbing activities in or around streams or waterbodies. Within HVWs (with the exception of locatable and salable mineral development and permitted activities by other agencies [ADF&G]) and subsistence users for permitted camps within HVWs, most surface-disturbing activities would be restricted. There would be long-term improvement to distribution and abundance of subsistence resources by maintaining the quality and diversity of areas of high fish and wildlife habitat value and river-based subsistence use from potential mineral development although to a lesser magnitude and geographic extent than Alternative B.

Management for SSS flora habitats (including dwarf shrub and lichen habitats or sparse vegetation types) from OHV use would be the same as under Alternative B. Alternative C recommends the use of native species for revegetation of disturbed areas but would allow nonnative seed and propagules to be considered if applicable for the climatic condition and ecosystem function and if native plant species were not available or feasible. The use of nonnative plant species for restoration could lead to an adverse effect to subsistence users if reduction of the availability of plants traditionally used for subsistence purposes occurred and therefore affected harvest rates of traditionally used resources.

Alternative C would restrict development on BLM-managed land in one connectivity corridor (576,038 acres; 4 percent). Management actions for the connectivity corridor under Alternative C would be less restrictive for locatable and salable mineral development (which would be allowed) than those under Alternative B. This alternative would maintain the long-term benefits to wildlife movement in the Innoko Bottoms Priority Wildlife Habitat Area in the South Connectivity Corridor but would not provide

the same management in the area identified as the North Connectivity Corridor, which intersects the range of the Western Arctic Caribou Herd. One connectivity corridor would still allow for landscape connectivity, but would offer fewer options for movement across the landscape and would provide fewer beneficial impacts to wildlife subsistence resources than Alternative B. Because neither proposed connectivity corridor under Alternative B occurs in an area of medium or high LMP, the probability of future development in key movement areas would be low, and having only one corridor under Alternative C may not make a sizable difference on wildlife movement and habitat connectivity. In general, having one corridor rather than two could increase the distance subsistence hunters would have to travel to reach the corridor. This in turn could reduce rates of subsistence harvest of wildlife species in this area as hunters would have to travel further to be successful.

Alternative C includes more restrictions than Alternative D and fewer than Alternative B on construction and mineral development activities, which could interfere with or displace subsistence activities in migratory bird habitat, Innoko Bottoms Priority Wildlife Habitat Area, and in moose and caribou calving and wintering habitat. Restrictions on casual use airboats and hovercraft would be the same as Alternative B. Alternative C would have slightly more impacts than Alternative B and have a greater risk for disturbance to subsistence resources during the breeding season during certain activities unless they were addressed through specific SOPs and BMPs.

For caribou and moose, the leasable minerals and construction management actions would apply only to calving habitat. While impacts to caribou and moose would be avoided during the breeding period, they could be disturbed in their crucial winter habitat areas. The disturbances could cause increased energy expenditures and stresses on wintering populations, which could result in decreased survivorship. This in turn could affect levels of subsistence hunting success and rates of harvest and sharing. However, due to low potential for leasable development in the planning area, the potential for these impacts is low. Also, although the Innoko Bottoms Priority Wildlife Habitat Area and the South Connectivity Corridor would be open to locatable mineral development under Alternative C, there is no medium or high LMP in that area, so potential impacts would be low based on low likelihood for mineral development.

Under Alternative C, 13,418,941 acres (over 99 percent) of BLM-managed land in the planning area would be open to locatable mineral development, and 6,645,750 acres (about 49 percent) would be open to salable mineral development, with another 6,536,635 acres (about 49 percent) open on a case-by-case basis. However, all areas of medium or high LMP on BLM-managed land would be open to locatable mineral development. Areas that would be open to locatable and salable mineral development, in areas of medium to high mineral potential, include important wildlife habitat areas that are important to subsistence (Appendix M). Alternative C would open more areas to locatable and salable mineral development than Alternative B, including in areas of medium or high LMP where likelihood for development and associated impacts is highest. While Alternative C would open fewer areas to salable mineral development than Alternative A, Alternative C has more land that is open to salable mineral development on a case-by-case basis. This means that Alternative C has the potential to open more areas than Alternative A when lands open to salable mineral development on a case-by-case basis are considered. Potential for salable mineral development is generally low in the planning area, although development could occur if sand or gravel resources are needed for projects in the planning area. Alternative C would, however, open more areas of medium or high LMP to locatable mineral development than Alternative A where development is more likely. There would be high magnitude

impacts to subsistence resources over a greater geographic extent than Alternative A. Similar to Alternatives A and B, the potential for a number of new mines and associated infrastructure would likely increase, dependent on future demand for minerals, but would not occur in portions of the planning area closed to development. The communities most likely to experience impacts to availability of subsistence resources from locatable mineral development under Alternative C include Aniak, Crooked Creek, Chuathbaluk, Lower Kalskag, McGrath, Sleetmute, and Upper Kalskag.

The area designated as NSO leasable (6,824,035 acres; 51 percent) and closed to leasing (46,953 acres; less than 1 percent) would be less than under Alternative B, and 6,594,906 acres (49 percent) would be open to leasing with standard stipulations. Therefore, this alternative would be more likely to impact wildlife and subsistence resources from mineral leasing than Alternative B.

Alternative C would have a greater risk for habitat fragmentation and degradation affecting availability of subsistence resources than Alternative B, because there would be more acres open to ROW development, no designated ROW exclusion areas, and fewer ROW avoidance areas. Additionally, a smaller portion of the planning area (7,069,494 acres; 52 percent of the planning area) would be identified as ROW avoidance area (including areas of ROW avoidance for linear realty actions only). Areas outside of ROW avoidance areas, with the greatest potential for habitat loss, degradation, and fragmentation from development of ROWs would include habitats important to subsistence harvest of resources. The communities most likely to experience impacts to access and availability of subsistence resources from new ROW development under Alternative C include Aniak, Crooked Creek, Grayling, Holy Cross, Kaltag, Lower Kalskag, McGrath, Marshall, Nikolai, Russian Mission, Shageluk, Sleetmute, Stony River, Unalakleet, Upper Kalskag, Lime Village.

The potential increase in wildlife habitat managed by BLM that could affect subsistence in the planning area would be slightly less than Alternative B, with greater reductions in riparian areas and moose calving and wintering areas but the same amount of caribou crucial winter habitat and Innoko Bottoms Priority Wildlife Habitat Area. Available acquisitions would be the same as under Alternative B.

In personal use and subsistence woodland harvest areas, house log harvesting would not be allowed within the riparian zone of perennial streams. Subsistence gathering of forest firewood and forestry products would not require a permit. Personal use gathering of more than 10 cords of firewood per household per year and gathering forestry products would require a permit. All areas within 15 miles of a river would be open for subsistence and personal use woodland harvest; all areas within 25 miles of a community would be open for subsistence and personal use woodland harvest; and all burned areas outside of the areas above are open for subsistence and personal use woodland harvest. Permits would be granted outside these areas on a case-by-case basis dependent on resource concerns. Under Alternative C, cutting or otherwise disturbing trees used for trapping would be prohibited. This could limit the success of subsistence individual trapping activities that require the use of these materials.

Under Alternative C, 13,125,320 acres would be managed as ERMA and 340,574 acres as SRMA. Impacts under Alternative C would be similar to Alternative B with the exception of a slightly smaller SRMA. Casual use would be permitted on existing routes at the Rohn Site. Winter casual and subsistence access would be allowed for snowmobiles only, similar to Alternative B, and impacts from winter travel would be the same as Alternative B. Management actions would provide for increased recreation opportunity during summer months and could also result in increased conflicts between recreational,

casual, and subsistence users. Increased use could result in damage to the trail resource, thereby altering recreation setting, opportunity, and experience over time. Summer OHV casual use would be limited to existing routes. Subsistence cross-country summer OHV access on all lands managed as undesignated would be allowed by ATV and UTV. Alternative C applies a CFZ within a 5-mile buffer surrounding BSWI communities. SRPs for hunting guide/outfitter businesses would not be authorized within a 5-mile radius of any established community in the planning area (5-mile radius of all communities includes 95,307 acres of BLM-managed public lands). Shuttle service operations would be allowed without an SRP throughout the ERMA unless increase in use conflicts with the BSWI ERMA objectives, at which point the BLM would engage in additional planning to maintain the objectives. This would reduce conflicts with subsistence users compared to Alternatives A and D, although to a lesser extent than under Alternative B.

In the Unalakleet Wild River Corridor OHV casual summer access would be limited to existing trails, primitive roads, and roads and would include ATVs only. Subsistence cross-country summer OHV access on lands in the Unalakleet Wild River Corridor would be allowed by ATV. Recreation access in the summer would provide for increased opportunity for conflict. However, due to the wet and boggy condition of the area, summer travel is expected to be minimal such that while damage to the lands (rutting, braiding) could occur and there could be an increased potential for use conflicts between recreationists and subsistence users, it would be low in terms of magnitude.

Alternative C would be less restrictive on overland subsistence travel than Alternative B and more restrictive than Alternative D.

Designation of one connectivity corridor and Innoko Bottoms Priority Wildlife Habitat Area and associated management actions under Alternative C would minimize impacts to subsistence resources and reduce subsistence conflict with recreation use in those areas.

Effects from Alternative D

Alternative D proposes management of 12,982 river miles of streams within HVWs (39 percent of river miles on BLM-managed lands). Any proposals to develop land, water, or resources within the 100-year floodplain of HVWs would be required to demonstrate that the development would not diminish quality and diversity of habitats needed for fish and wildlife populations, including those used for subsistence. Alternative D would provide some management to minimize impacts from surface-disturbing activity in HVWs, but to a lesser extent than Alternatives B or C and would rely on the operator to characterize the potential of streams for reclamation. Because watersheds with medium-high and medium resource values would not be managed as HVWs as proposed in Alternatives B and C, resources in these areas could degrade due to development activities. They would still be subject the same SOPs and BMPs as Alternative B and C that could be implemented by the BLM.

No specific management for SSS flora habitats and lichen areas would be implemented if these areas become degraded by OHV use, and therefore these areas could be subject to further degradation. Revegetation of disturbed areas would focus on using plant species that are appropriate for the climatic condition and ecological function, including nonnative plant species. There could be an adverse effect to subsistence users if native plants important for subsistence uses were not considered in revegetating areas, limiting the availability of these plants for subsistence harvest and use compared to Alternatives B and C. However, subsistence users could respond to a decrease in the availability of an edible plant by harvesting

more of another edible resource. This would be limited to a small portion of the planning area and would not necessarily coincide with vegetation subsistence harvest areas.

Alternative D offers fewer restrictions than either Alternative B or C on construction and mineral development, which could interfere with or displace subsistence activities in migratory bird habitat, Innoko Bottoms Priority Wildlife Habitat Area, and in moose and caribou calving and wintering habitat. The BLM would not manage connectivity corridors under Alternative D, but the proposed connectivity corridors occur in areas with low LMP, so future development could have a low impact on migration under this alternative even without the corridors. Fewer management actions would exist for caribou and moose, particularly during the winter use period, during which there would be no additional management beyond those described for all action alternatives and the BMPs/SOPs listed in Appendix K. For Innoko Bottoms Priority Wildlife Habitat Area, management actions and effects pertaining to mineral decisions and ROWs would be the same as those under Alternative C. However, there would be no restrictions on casual use airboats and hovercraft, and therefore no reduction in the potential for impacts to waterbirds and other species from associated disturbance. Because restrictions and mitigations for migratory birds would be determined on a case-by-case basis, it is difficult to assess potential effect levels.

Alternative D would open the more acreage to locatable mineral development than Alternative C. Alternative D would close the same acreage to salable mineral development as Alternative C and would open the remaining BLM-managed lands in the planning area to salable development rather than opening some areas on a case-by-case basis, as with Alternative C. Impacts to subsistence resources from locatable mineral development would be the same as Alternative C and nearly the same for impacts associated with salable mineral development due to low salable mineral potential and demand in the planning area. Areas that would be open to locatable and salable mineral development, in areas of medium to high mineral potential, include important wildlife habitat areas as described in Section 3.2.7. The communities most likely to experience impacts to availability of subsistence resources from locatable mineral development under Alternative D include Aniak, Crooked Creek, Chuathbaluk, Lower Kalskag, McGrath, Sleetmute, and Upper Kalskag.

Alternative D would have the greatest proportion of land designated as open to leasing subject to standard stipulations (see Table 2-1b). Therefore, Alternative D could impact fish, wildlife, and SSS important for subsistence from leasable mineral development over a greater geographic extent and higher magnitude than Alternatives B and C. It could have subsistence impacts over a greater geographic extent than Alternative A although the magnitude of impacts would be less due to BMPs, SOPs, and reclamation procedures that would be implemented under Alternative D. Similar to Alternatives A and B, the potential for a number of new mines and associated infrastructure would likely increase, dependent on future demand for minerals, but would not occur in portions of the planning area closed to development. Surface-disturbing activities or permanent structures would be allowed on a case-by-case basis within the 100-year floodplain of perennial and fish-bearing streams, if permittees demonstrate these activities would not substantively impact floodplain function. If adverse effects resulted from these actions in displacement and disturbance to the resource then subsistence activities in these areas and harvest could be affected. BMPs and reclamation procedures under this alternative would be the same as Alternatives B and C.

Alternative D would have a higher likelihood of wildlife and subsistence habitat fragmentation and degradation affecting availability of subsistence resources than Alternatives B and C because there would

be no designated ROW exclusion areas and the acreage of ROW avoidance areas would be the lowest of all the action alternatives (5,130,927 acres; 38 percent of the planning areas). Areas outside of ROW exclusion and avoidance areas with the greatest potential for habitat loss, degradation, and fragmentation from development of ROWs would include habitats that are important for subsistence resources. The communities most likely to experience impacts to access and availability of subsistence resources from new ROW development under Alternative D include Aniak, Anvik, Crooked Creek, Chuathbaluk, Grayling, Holy Cross, Kaltag, Lower Kalskag, McGrath, Marshall, Nikolai, Russian Mission, Shageluk, Sleetmute, Stony River, Unalakleet, Upper Kalskag, and Lime Village.

BLM would not pursue opportunities to acquire public land under Alternative D, so there would be no potential increase in wildlife habitat. This alternative would result in the similar but potentially slightly greater impacts to reduction in the amount of wildlife habitat under BLM management from exchange and/or disposal as Alternatives B and C, but there would be no available acquisitions of these habitats to help offset the losses. Overall, Alternative D could have a greater adverse impact on fish and wildlife habitat and related subsistence resources than Alternatives A, B, and C in terms of the geographic extent of key wildlife habitats important for subsistence on lands available for exchange or disposal.

Under this alternative, subsistence gathering of forest firewood and forestry products and personal use gathering of forest firewood would not require a permit. Personal use gathering of forestry products would require a permit. Unless otherwise restricted by other resource management actions in this RMP, all of the planning area would be available for personal use and subsistence woodland harvest. Under Alternative D cutting or otherwise disturbing trees used for trapping would be prohibited. This could limit the success of subsistence individual trapping activities that require these materials.

Under Alternative D, 13,125,320 acres would be managed as ERMA and 340,574 as SRMA, same as Alternative C. BLM would designate the INHT SRMA; however, there would be limited additional management beyond that specified in Alternative A to limit SRPs or mitigate user conflicts. The BLM's recreation program would accommodate demand for future permitted recreation activities, and these could conflict with each other and with other subsistence and individual users. OHV designation in the Unalakleet Wild River Corridor would be limited. Casual and subsistence summer access would be the same as Alternative C; however, travel could be by ATV or UTV. Winter access would be the same as under Alternative B. The expanded mode of summer travel would provide increased recreation opportunities. However, due to the wet and boggy condition of the area, summer travel is expected to be minimal such that while damage to the lands (rutting, braiding) could occur, and there could be an increase potential for use conflicts between recreationists and subsistence users it would be low in terms of magnitude, similar to Alternative C. Impacts from winter travel would be identical to Alternative C. There would be no CFZs applied under this alternative. Alternative D does not propose SRPs for hunting guide/outfitter business authorizations operating within a radius of any established community in the planning area. Additionally, Alternative D allows shuttle service operations throughout ERMA without an SRP. However, if the ERMA objectives are not being met, BLM would increase monitoring, outreach, education, and/or enforcement, case-by-case. Therefore, Alternative D would result in more impacts to subsistence resources than Alternatives B and C.

Alternative D would be somewhat more restrictive on summer overland travel for casual use than for subsistence use in comparison to Alternative A, which has no restrictions. Alternative D would be less restrictive on overland subsistence travel than Alternatives B and C. Alternative D would prohibit casual

OHV use on about 2 percent of the planning area and restrict less than 1 percent to existing trails but would have no prohibitions on summer subsistence OHV travel. Since Alternative D would not prohibit summer OHV subsistence access, it would not impact access to subsistence resources for any communities.

Alternative D would not prohibit casual use airboats or hovercraft on non-navigable waterways on BLM-managed land and does not include travel management actions in Innoko Bottoms Priority Wildlife Habitat Area or caribou habitat, so disturbance could increase potential for conflicts between recreationists and subsistence users. Alternative D would have the least impact on existing access for both casual and subsistence use and would only limit OHV use to existing routes in one area (INHT NTMC TMA), providing opportunities for network expansion. The communities most likely to experience impacts to abundance of subsistence resources from OHV decisions under Alternative D include Aniak, Anvik, Crooked Creek, Chuathbaluk, Grayling, Holy Cross, Kaltag, Lower Kalskag, McGrath, Marshall, Nikolai, Russian Mission, Shageluk, Sleetmute, Stony River, Unalakleet, Upper Kalskag, Bethel, Lime Village, and Nulato.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

Residents harvest a wide variety of wild fish, wildlife, and vegetation for myriad purposes including for food, fuel, arts and crafts, tools, and clothing. Past and present activities have disturbed and displaced subsistence resources and activities, but harvest levels and practices would likely continue. **Trend: No change overall for wildlife habitat important for subsistence resources but degrading for some species and improving for others.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

With the trends of continued natural resource development and increased casual and recreational use in the planning area, some subsistence resources could continue to be degraded and some subsistence users could face increased competition for resources. Donlin Gold's proposed mine could result in a restriction to subsistence uses for communities along the Kuskokwim River and communities along the gas pipeline ROW. The development of ancillary facilities, temporary access roads, and airstrips in association with the pipeline could result in unintended development along this corridor, which affects subsistence gathering regions. Designations that manage aquatic and terrestrial habitats, such as HVW, ACEC, WSR, and lands managed for wilderness characteristics, would minimize impacts to sensitive areas important for the management of subsistence values. **Trend: Existing trends would continue, with no trend overall, but degrading for some species important to subsistence and improving for others. With increased development in the planning area, species with affected habitat could experience a trend of increased degradation or lessened improvement at a similar rate.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative B)

With the trends of continued natural resource development and increased casual and recreational use in the planning area, some subsistence resources could continue to be degraded and some subsistence users could face increased competition for resources. Alternative B would provide more management prescriptions than the other alternatives for the maintenance and perpetuation of subsistence resources indirectly affected by the development of the Donlin Gold Project and the associated natural gas pipeline.

Trend: Improving. It is expected that implementing Alternative B would result in an improved trend for most fish and wildlife that are subsistence resources. For species with habitat or populations that are degrading, this alternative would lessen the rate of degradation or stabilize or counter the existing trend. For species with habitat or populations that are improving, this alternative would allow the improvement to continue at a similar or greater rate.

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative C)

With the trends of continued natural resource development and increased casual and recreational use in the planning area, some subsistence resources could continue to be degraded and some subsistence users could face increased competition for resources. Alternative C would minimize impacts to subsistence use to a greater extent than Alternatives A and D but to a lesser extent than Alternative B for the maintenance and perpetuation of subsistence resources indirectly affected by the development of the Donlin Gold Project and the associated natural gas pipeline.

Trend: Varies between species important to subsistence. It is expected that implementing Alternative C would result in a degrading trend for most fish and wildlife that are subsistence resources, though this trend would be less than Alternative A. With the trends of continued natural resource development and increased casual and recreational use in the planning area, subsistence resources would continue to be degraded, and subsistence users could face increased competition for available resources by non-local users. For species with habitat or populations that are degrading, the degradation could continue but at a lesser rate and could be stabilized.

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative D)

With the trends of continued natural resource development and increased casual and recreational use in the planning area, some subsistence resources could continue to be degraded and some subsistence users could face increased competition for resources. Donlin Gold's proposed mine could result in restrictions to subsistence uses for communities along the Kuskokwim River and communities along the gas pipeline ROW.

Trend: Varies between species important to subsistence, stable or declining. For forest and woodland species and species in areas of medium to high LMP that are important as subsistence resources potential, trends could degrade as a result of the cumulative effects of future development, climate change, and fragmentation of habitats. These species would experience a trend of increased degradation or lessened improvement.

3.5.3 Hazardous Materials and Health and Human Safety

Affected Environment

Abandoned Mines on BLM-Managed Public Lands

A search of the ADEC Contaminated Sites Database (ADEC 2016) indicates there are two active contaminated sites on BLM-managed lands in the planning area: Red Devil Mine and Kolmakof Mine.

The Red Devil Mine is located on the south bank of the Kuskokwim River, 1.5 miles upstream from the village of Red Devil and 8 miles downstream from Sleetmute. The site was mined from 1933 to 1971, yielding approximately 35,000 2.5-quart flasks of mercury. Extensive underground and surface mining occurred, and mine tailings and processing wastes were disposed of on site. The BLM began addressing

hazardous materials and physical safety hazards at the site in 1987. Initial efforts focused on removing the remaining processing chemicals and polychlorinated biphenyls in transformers and backfilling open mine shafts and adits. In 2002, the derelict mine buildings and mercury production facilities were demolished and buried in on-site landfills. Since 2003, BLM has been addressing multiple fuel spills discovered around the site. Since 2009, BLM has been conducting a CERCLA Remedial Investigation/Feasibility Study to address heavy metals issues related to the past mining operation.

The Kolmakof Mine Site is an abandoned cinnabar mine on the north bank of the Kuskokwim River, located approximately 19.5 miles east of Aniak and approximately 10 miles west of Napaimute. The site was mined from 1838 to 1970. BLM conducted a CERCLA Environmental Engineering and Cost Analysis for the site from 2008 through 2012, with a Removal Action Memorandum signed in May 2013. Since then, BLM has achieved all cleanup/removal objectives except at the former mercury retorting area, where soil contaminated with cinnabar will continue to be removed and properly disposed of off-site as the annual federal budget process makes funding available.

Ongoing Use of Hazardous Materials

Every community, every commercial activity, and nearly all recreational and casual use activities throughout the planning area use hazardous materials to some degree. Petroleum oil is the most common hazardous material present, although mining wastes, asbestos, lead-based paint, and chemicals such as solvents are also present. Tens to hundreds of thousands of gallons of oil are stored and used at every community and large commercial enterprise. Smaller amounts (i.e., 50 to 250 gallons typically) are stored and used at nearly every residence. Recreational and casual users almost always use oil in amounts ranging from less than a gallon to hundreds of gallons to power outboard engines, chainsaws, small aircraft, camp stoves, and lanterns.

Public Safety

The BLM-managed lands in the planning area are generally far from villages and are reached by the public mainly by snowmobile, dogsled, or boat. One ranger is currently employed to oversee the entirety of the BLM-managed lands included in the Anchorage Field Office, which includes the BSWI, Bay, Kobuk-Seward, and Ring of Fire planning areas. To access most of the BLM-managed lands, the ranger pilots a small Cessna 206 aircraft. The degree to which the ranger flies this airplane is made on a flight-by-flight basis considering management, budget, and law enforcement parameters. Alaska State Troopers have primary law enforcement responsibility within the planning area; one State Trooper could be responsible for as many as 10 villages.

Direct and Indirect Effects

Table 3.5.3-1 summarizes the nature and types of beneficial or adverse effects that could occur to hazardous materials and health and human safety, the proposed management actions that could influence those effects, and the indicators used to measure the potential magnitude and extent of the effects. Table 3.5.3-2 discloses the potential magnitude and extent of the effects by indicator across alternatives (acreages given are approximate).

Table 3.5.3-1: Summary of Effects to Hazardous Materials and Health and Human Safety by Management Action

Types of Effects	Management Actions	Indicators
Management of BLM lands could result in the uncontrolled release of hazardous materials to sensitive receptors.	• Water Resources Decisions • Mineral Decisions • BMPs and Mitigation Measures for Restoration and Reclamation of Surface-Disturbing Activities	• Permit application, monitoring, and closeout • Amount of land that is publicly accessible from transportation channels and methods such as trails and OHV and snowmobile routes • Areas, including location and size, that have been identified and managed as being subject to surface-disturbing activities • Number of ROW authorizations, grants, and leases that have been issued
Management actions could result in hazardous site conditions that could impact health and human safety.	• Water Resources Decisions • Mineral Decisions • BMPs and Mitigation Measures for Restoration and Reclamation of Surface-Disturbing Activities	• Permit application, monitoring, and closeout • Amount of land that is publicly accessible from transportation channels and methods such as trails and OHV and snowmobile routes • Areas, including location and size, that have been identified and managed as being subject to surface-disturbing activities • Number of ROW authorizations, grants, and leases that have been issued
Actions resulting from the management of BLM lands could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	• Mineral Decisions • Wildland Fire Management Decisions • BMPs and Mitigation Measures for Restoration and Reclamation of Surface-Disturbing Activities	• Permit application, monitoring, and closeout • Amount of land that is publicly accessible from transportation channels and methods such as trails and OHV and snowmobile routes • Areas, including location and size, that have been identified and managed as being subject to surface-disturbing activities • Number of ROW authorizations, grants, and leases that have been issued
Management decisions could expose people or structures to a higher likelihood of loss, injury or death involving wildland fires.	• Wildland Fire Management Decisions	• Areas, including location and size, that have been identified and managed as being subject to surface-disturbing activities • Number of ROW authorizations, grants, and leases that have been issued • Acres managed as ACECs

Table 3.5.3-2: Summary of Impacts to Hazardous Materials and Health and Human Safety by Indicator

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Permit application, monitoring, and closeout	No cumulative management decisions for floodplains	Minimum distances from perennial bodies of water for human waste disposal. BLM would require a spill prevention control and countermeasures plan for activities that meet certain thresholds. No hazardous materials would be allowed to be stored within the 100-year floodplain or within 100 feet of surface waters.	Minimum distances from perennial bodies of water for human waste disposal. BLM would require a spill prevention control and countermeasures plan for activities that meet certain thresholds. No hazardous materials would be allowed to be stored within the 100-year floodplain or within 100 feet of surface waters.	Minimum distances from perennial bodies of water for human waste disposal. BLM would require a spill prevention control and countermeasures plan for activities that meet certain thresholds. No hazardous materials would be allowed to be stored within the 100-year floodplain or within 100 feet of surface waters.

Resource Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Amount of land that is publicly accessible from transportation channels and methods such as trails and OHV and snowmobile routes	• 46,953 acres (<1%)[1] would have summer casual OHV access prohibited • Rest of planning area is undesignated and therefore open.	• 565,955 acres (4%)[1] would have summer casual OHV access prohibited • 241,512 acres (2%)[1] would have summer subsistence OHV access prohibited • 12,899,939 acres (96%)[1] would have summer casual OHV access limited to existing trails • 324,443 acres (2%)[1] would have summer subsistence OHV access limited to existing trails	• 225,925 acres (2%)[1] would have summer casual OHV access prohibited • 225,925 acres (2%)[1] would have summer subsistence OHV access prohibited • 13,239,969 acres (98%)[1] would have summer casual OHV access limited to existing trails • 363 acres (<1%)[1] would have summer subsistence OHV access limited to existing trails	• 225,925 acres (2%)[1] would have summer casual OHV access prohibited • 0 acres (0%)[1] would have summer subsistence OHV access prohibited • 46,953 acres (<1%)[1] would have summer casual OHV access limited to existing trails • 225,925 acres (2%)[1] would have summer subsistence OHV access limited to existing trails
Areas, including location and size, subject to surface-disturbing activities	294,325 acres open to locatable mineral development in medium or high LMP (52%)[2]	202,610 acres open to locatable mineral development in medium or high LMP (36%)[2]	565,489 acres open to locatable mineral development in medium or high LMP (100%)[2]	565,489 acres open to locatable mineral development in medium or high LMP (100%)[2]
Number of ROW authorizations, grants, and leases that have been issued	13,465,894 acres (100%)[1] open to ROW permits granted on a case-by-case basis	• ROW exclusion: 1,464,069 acres (11%)[1] • ROW avoidance: 8,824,848 acres (66%)[1] • Open to ROW location: 3,176,977 acres (24%)[1] • ROW available for exchange only: 342,360 acres (3%)[1] • ROW permitted on a case-by-case basis: 0 acres (0%)[1]	• ROW exclusion: 0 acres (0%)[1] • ROW avoidance: 7,069,494 acres (52%)[1] • ROW avoidance for linear realty actions: 576,038 acres (4%) • Open to ROW location: 5,820,362 acres (43%)[1] • ROW available for exchange only: 356,942 acres (3%)[1] • ROW permitted on a case-by-case basis: 0 acres (0%)[1]	• ROW exclusion: 0 acres (0%)[1] • ROW avoidance: 5,130,927 acres (38%)[1] • Open to ROW location: 8,234,323 acres (61%)[1] • ROW available for exchange only: 0 acres (0%)[1] • ROW permitted on a case-by-case basis: 100,644 acres (<1%)[1]
Acres managed as ACECs	1,884,376 acres (14%)[1]	3,912,698 acres (29%)[1]	0 acres (0%)[1]	0 acres (0%)[1]

Notes:
1) Percentage is based on all BLM-managed lands in the planning area.
2) Percentage is based on all medium and high LMP areas on BLM-managed land in the planning area.

Effects from Alternative A

Alternative A would be a continuation of current policies, which would generally minimize impacts on health and human safety to a lesser extent than the action alternatives. Most management actions under Alternative A would not have a quantifiable impact on hazardous materials and health and human safety but could have a qualitative impact due to increased or decreased risk and exposure to hazardous environmental conditions. There are no specific restrictions for development in floodplains under Alternative A, which could expose more people to risks if hazardous materials are stored in the floodplains and could lead to safety concerns in the event of a flood. Alternative A would manage vegetation adjacent to populated areas to reduce risk of wildland fires but lacks the specifics of wildland fire management that Alternatives B, C, and D would provide.

Management of surface-disturbing mineral actions, ROW authorization, and OHV use could expose the public or BLM employees to hazardous materials or unsafe conditions. Table 3.5.3-2 lists the acreages of land that could be impacted under Alternative A. In general, extents of land that could be subject to these actions are identified less precisely than under the action alternatives and rely more on case-by-case

authorization. OHV use could occur anywhere in the planning area, though it would more likely be restricted to commonly used travel, subsistence, and recreation routes. Alternative A would have 294,325 acres of high or medium mineral potential land that would be withdrawn from locatable and closed to salable mineral developments. This acreage is greater than Alternative B and less than Alternatives C and D.

Effects Common to All Action Alternatives

Risks to health and human safety could result where vegetation and soil conditions degrade to the extent that the ground becomes unstable. Minimization of surface-disturbing activities would lead to fewer impacts to hazardous materials and health and human safety. Using existing roads and trails where feasible would minimize the potential safety impacts from construction of new roads and trails. Avoiding the use of heavy equipment and overland travel in snow-free months, avoiding of creation of new roads and trails in wetlands and floodplains, and minimizing disturbance to riparian communities would minimize the vegetation and soil degradation in these areas.

All of the action alternatives would include national trails management actions to ensure that visitors are not exposed to unhealthy or unsafe human-created conditions. These management actions would seek to manage conflicts between recreation participants and other resource and/or resource uses and also between users and property owners to decrease illegal trespassing, all to decrease the potential for harmful interactions between conflicting uses.

Effects from Alternative B

Alternative B would include the greatest restrictions to surface-disturbing activities and potential use conflicts under all the alternatives, including limitations on mining, casual summer OHV use, and ROW authorizations. This alternative would have the smallest extent of potential impacts to hazardous materials and health and human safety (see Table 3.5.3-2). Alternative B has the lowest number of acres of high or medium mineral potential land that would be open to locatable and closed to salable mineral developments.

Under Alternative B, acres of ROW exclusion and avoidance, vegetation buffers, floodplain management, OHV restrictions, land closures, and lands managed for ACECs are higher than all other alternatives. Limiting use of or the degree of surface-disturbing activities helps to minimize the possibility of release or exposure to hazardous materials and limits the safety risks inherent in the various uses of the land. ACECs afford numerous restrictions such as closure to commercial harvest, ROW avoidance, withdrawal from locatable mineral entry, NSO for leasable mineral development, closure to salable mineral development, and limitation on casual summer OHV use to existing trails. These restrictions would minimize impacts by limiting access to ACEC areas and helping to maintain natural conditions in the area.

Effects from Alternative C

ROW avoidance areas, vegetation buffers, floodplain management, limitations on casual summer OHV use, and land closures under Alternative C are not as extensive as Alternative B but would minimize impacts to a greater degree than under Alternatives A and D. Acreages of these restrictions are presented in Table 3.5.3-2. Limiting use of or the degree of surface-disturbing activities helps to minimize the

possibility of release or exposure to hazardous materials and limits the safety risks inherent in the various uses of the land. Overall, management under Alternative C would minimize impacts to hazardous materials and health and human safety to a lesser degree than under Alternative B but to a greater degree than under Alternatives A and D, with the exception of impacts to hazardous materials and risks to health and human safety from mineral development activities and ACEC management actions.

While Alternative C would withdraw more lands from locatable development and close more acres to salable development than Alternative A, it would open 271,164 more acres to locatable mineral development in areas of medium or high potential where development is most likely to occur. Alternative C would have fewer acres open to locatable development in medium or high potential areas than Alternative B and the same acres open to locatable development in medium or high potential areas as Alternative D.

Alternative C would have no ACECs; however, because Alternative A does not include specific restrictions associated with ACECs, impacts to hazardous materials and health and human safety due to ACEC management actions would be similar for both alternatives. Limiting use of or the degree of surface-disturbing activities helps to minimize the possibility of release or exposure to hazardous materials and limits the safety risks inherent in the various uses of the land.

Effects from Alternative D

Alternative D would include the fewest restrictions to surface-disturbing activities and potential use conflicts under the action alternatives, including limitations on mining, casual summer OHV use, and ROW authorizations. This alternative would have the most potential impacts to hazardous materials and health and human safety of all the action alternatives. Acreages of these restrictions are presented in Table 3.5.3-2. Alternative D has more acres of high or medium LMP that would be open to locatable and closed to salable mineral developments as compared to Alternatives A and B but the same as Alternative C.

ROW avoidance areas, vegetation buffers, casual summer OHV access, and land closures under Alternative D are not as extensive as under Alternatives B and C but would minimize impacts to a greater extent than under Alternative A. Similar to Alternative C, Alternative D would have no ACECs, and for the reasons described under Alternative C, impacts to hazardous materials and health and human safety due to ACEC management actions would be similar for Alternatives A and D. Overall, management under Alternative D would minimize impacts to hazardous materials and health and human safety to a lesser degree than under Alternatives B and C but to a greater degree than under Alternative A.

Cumulative Effects

Trends and Forecasts: Past and Present Actions

The lack of development and access to the planning area has limited the risks from hazardous materials and threats to health and human safety. **Trend: Stabilized.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternative A)

Continued resource uses and community development would occur as discussed in Appendix N. Past, present, and reasonably foreseeable future actions would represent increased opportunities for exposure to hazardous materials and safety risks due to the anticipated uses of the land, which include inherently

dangerous activities such as mining and OHV and snowmobile use. Other reasonably foreseeable actions include access road development and potential for new energy development, which could increase the opportunities for exposure or release of hazardous materials and present new health and human safety concerns throughout the planning area. **Trend: Degrading, with a potential for impacts due to hazardous materials and health and human safety risks.**

Trends and Forecasts: Past, Present, and Reasonably Foreseeable Future Actions (Alternatives B, C, and D)

Under the action alternatives, site-specific reductions in cumulative contributions to hazardous materials and health and human safety risks could occur from a reduction in human uses. Resource uses and community development would continue. Reasonably foreseeable future actions would represent increased opportunities for exposure to hazardous materials and safety risks due to the anticipated uses of the land, which include inherently dangerous activities such as mining and OHV and snowmobile use. Other reasonably foreseeable actions include access road development and potential for new energy development, which could increase the opportunities for exposure or release of hazardous materials and present new health and human safety concerns throughout the planning area. There is a potential for impacts due to hazardous materials and health and human safety risks to increase, but generally to a lesser degree than Alternative A. Impacts would be lowest under Alternative B, highest under Alternative D, and intermediate under Alternative C. **Trend: Degrading for all alternatives.**

3.6 Unavoidable Adverse Impacts

Unavoidable adverse impacts are those that cannot be fully mitigated. These vary between alternatives and are generally least under Alternative B and highest under Alternative D.

- Surface disturbance is the main indicator of unavoidable adverse impacts for the proposed BSWI actions. Surface disturbance can cause soil erosion and dust emission; remove and alter vegetation communities; remove, alter, or fragment wildlife habitat; change water quantity; or harm water quality. Restoration requirements help reduce the degree and intensity of impacts.
- Management actions associated with increases in surface disturbance include mineral development, opening land to grazing or commercial harvest, and development of ROW, roads, trails, or water crossings.
- Mining can produce potentially non-negligible air emissions of criteria pollutants, and mine operations can result in changes to the surrounding landscape that impact visual resources.
- Vegetation or wildlife habitat actions can limit fuels treatments used for wildland fire control.

3.7 Irreversible and Irretrievable Commitment of Resources

Irreversible commitments include effects that are permanent, such as species extinction, loss of cultural or paleontological sites, permanent alteration of a waterway, or exhausting a mineral resource. *Irretrievable* commitments involve short-term loss that could be regained over time. Restrictions, mitigation, or permits could reduce the intensity or duration of effects. Effects are least under Alternative B and highest under Alternative D.

Irreversible effects could result from sizable surface disturbance, such as from commercial woodland harvest or mineral development, due to reduction of water quality or permanent loss of vegetation,

habitat, cultural resources, or paleontological resources. Removal of mineral resources during mining operations is an irreversible commitment.

Irretrievable effects to water quantity or quality, vegetation, fisheries, or wildlife could result from surface disturbance from facility, ROW, or mineral development or fuels management.

3.8 Relationship of the Short-Term Uses of the Environment to Long-Term Productivity

Short-term impacts are those that revert to pre-project conditions within a few years. Long-term impacts take longer to revert or are permanent. Because the alternatives are management actions, most effects are long term and could have beneficial or adverse effects on productivity compared to current conditions. Long-term beneficial impacts to fish, wildlife, water quality, and visual and historic resources are likely for Alternative B. Long-term adverse impacts to these could occur under Alternative C and D. Increased access to mineral development due to areas open in medium and high LMP areas, and therefore increased mineral productivity, could occur under Alternative C and D. Short-term disturbances from actions such as vegetation treatments or visitor facility construction would be offset by the long-term benefits to the habitat or visitor enjoyment/economic opportunity.

Appendix A: Acronyms

Appendix A. List of Acronyms

AAC	Alaska Administrative Code
ACEC	Area of Critical Environmental Concern
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
AGCM	Alaska Grazed Class Method
AGL	above ground level
AIANTA	American Indian Alaska Native Tourism Association
AIM	Assessment, Inventory, and Monitoring
ANCSA	Alaska Native Claims Settlement Act
ANILCA	Alaska National Interest Lands Conservation Act
AO	Authorized Officer
APDES	Alaska Pollution Discharge Elimination System
APLIC	Avian Power Line Interaction Committee
AQRV	air quality-related value
ATV	all-terrain vehicle
BLM	Bureau of Land Management
BMP	best management practice
BSWI	Bering Sea-Western Interior
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CFZ	Community Focus Zone
CO2	carbon dioxide
COA	Conditions of Approval
CSU	conservation system unit
CWMA	Cooperative Weed Management Area
CYRMP	Central Yukon Resource Management Plan
DOI	[U.S.] Department of the Interior
EIS	Environmental Impact Statement
EPA	[U.S.] Environmental Protection Agency
ERMA	Extensive Recreation Management Area
ES&R	emergency stabilization and rehabilitation
ESA	Endangered Species Act
FAA	Federal Aviation Administration

FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act
FR	*Federal Register*
GHG	greenhouse gas
GIS	geographic information system
GMU	Game Management Unit
GPS	global positioning system
GVWR	gross vehicle weight rating
HACCP	Hazard Analysis Critical Control Points
HUC	Hydrologic Unit Code
HVW	high-value watershed
ID	Interdisciplinary
IM	Instruction Memorandum
INHT	Iditarod National Historic Trail
LMP	locatable mineral potential
LNG	liquefied natural gas
LPG	liquefied petroleum gas
MBF	thousand board feet
MIST	Minimum Impact Suppression Technique
MMT	million metric tons
NAAQS	National Ambient Air Quality Standards
NAMF	National Aquatic Monitoring Framework
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NNIS	nonnative invasive species
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSO	no surface occupancy
NTMC	National Trail Management Corridor
NTSA	National Trails System Act
NWR	National Wildlife Refuge
OHV	off-highway vehicle
OHWM	ordinary high water mark
OPM	Operational Procedures Memorandum
ORV	outstandingly remarkable value
OSV	over-the-snow vehicle

PFYC	Potential Fossil Yield Classification
PLO	Public Land Order
PM10	particulate matter less than or equal to 10 micrometers in diameter
PM2.5	particulate matter less than or equal to 2.5 micrometers in diameter
R&Is	relevant and important values
R&PP	Recreation and Public Purposes
RCE	Reclamation Cost Estimate
REA	Rapid Ecoregional Assessment
RM	river mile
RMP	Resource Management Plan
RNA	Research Natural Area
ROD	Record of Decision
ROW	right-of-way
RSC	recreation setting characteristics
SHPO	State Historic Preservation Office
SOP	standard operating procedure
SRMA	Special Recreation Management Area
SRP	special recreation permit
SSS	special status species
SWMFP	Southwest Management Framework Plan
TMA	Travel Management Area
U.S.	United States
U.S.C.	U.S. Code
UAS	unmanned aerial system
USFWS	U.S. Fish and Wildlife Service
UTV	utility terrain vehicle
VRI	visual resource inventory
VRM	Visual Resource Management
WSR	Wild and Scenic River

Appendix B: Glossary

Appendix B. Glossary

Term	Definition
17(d)(1) withdrawal	A withdrawal made under the authority of section 17(d)(1) of the Alaska Native Claims Settlement Act (ANCSA) for study to determine the proper classification of the lands and to determine the public values of the lands which need protection.
100-year floodplain	The area inundated by the 100-year flood or the 1 percent annual exceedance probability flood (the flood event that has a 1 percent chance of being equaled or exceeded in any single year). The 100-year flood is often mistakenly thought of as the flood that occurs once every 100 years. In actuality, if one has a project located within the 100-year floodplain and the project life is expected to be 30 years, it would have a 25 percent chance of experiencing flood damage due to a 100-year flood. For example, for a project with an anticipated life of 15 years, the chance of incurring flood damage due to a 100-year flood would be 14 percent. The 100-year floodplain is difficult to accurately map without extensive ground surveys. On-the-ground surveys conducted within the planning area typically employ the Freeboard Approach, which is based on the current 1-percent-annual-chance flood elevation, with the addition of freeboard to account for uncertainties in future conditions (see: Guidelines of Implementing Executive Order 11988, Floodplain Management; October 2015) to determine the horizontal floodplain. Using this approach, the Bureau of Land Management (BLM) uses three times maximum bankfull depth as an estimate of the 100-year floodplain. Given the difficulty of remotely mapping the 100-year floodplain and the desire to convey the intent of the various management alternatives to the reader, riparian buffer distances are used in this resource management plan as proxies for the 100-year floodplain. Buffer distances are given as a distance from bankfull elevation, and are dependent on stream order. Buffer distances apply to each side of the stream, and are as follows: • 1st and 2nd Order Streams – 100-foot buffer • 3rd Order Streams – 500-foot buffer • 4th and 5th Order Streams – 1,000-foot buffer • 6th, 7th, and 8th Order Streams – 1,500-foot buffer
Actions	Measures or criteria to achieve desired outcomes (i.e., objectives), including actions to maintain, restore, or improve land health.
Adequate snow cover	Snow or frost of sufficient depth, generally 6-12 inches or more, or a combination of snow and frost depth, sufficient to protect the underlying vegetation and soil.

Term	Definition
Aircraft	A machine capable of flight. Aircraft includes fixed-wing (e.g., airplane) and rotary-wing (e.g., helicopter) aircraft.
Alaska National Interest Lands Conservation Act (ANILCA)	A law passed in 1980 designating 104 million acres for conservation by establishing or expanding national parks, wildlife refuges, wild and scenic rivers, wilderness areas, forest monuments, conservation areas, recreation areas, and wilderness study areas to preserve them for future generations.
Alaska Native Claims Settlement Act (ANCSA)	A law passed by Congress in 1971 to settle aboriginal land claims in Alaska. Under the settlement, the Alaska Natives received title to a total of over 44 million acres, to be divided among some 220 Native villages and 12 regional corporations established by the act. The corporations shared in a payment of $962,500,000.
Allowable uses	Uses, or allocations, that are allowable, restricted, or prohibited on BLM-managed lands and mineral estate.
All-terrain vehicle (ATV)	A motorized wheeled vehicle other than a snowmobile that is defined as having a curb weight of 1,000 pounds or less (1,500 pounds gross vehicle weight [GVW]), a maximum width of 50 inches, steered using handlebars, travels on four or more tires (no tracks), and has a seat designed to be straddled by the operator. An example includes production “four wheelers.”
Anadromous	Fish that live most of their lives in the sea but return to fresh water to spawn. Anadromous streams are those that support fish species that migrate between freshwater and marine waters, such as salmon.
Anthropogenic	Effects, processes, objects, or materials are those that are derived from human activities, as opposed to those occurring in natural environments without human influences.
Area of Critical Environmental Concern	An area within the public lands where special management attention is required to protect important historic, cultural, or scenic values; fish and wildlife or other natural systems or processes; or to protect life and safety from natural hazards.
Artifact	An object that was made, used, and/or transported by humans that provides information about human behavior in the past. Examples include pottery, stone tools, and bones with cut marks.

Term	Definition
Assessment, Inventory, and Monitoring (AIM)	The AIM strategy has been adopted by BLM Alaska to address BLM's need for a systematic approach for integrating key components (attributes) into planning decisions, monitoring programs, and research needs. To answer this need, the foundation of the AIM strategy includes the principles of collecting nationally prescribed indicator metrics using consistent methods based on a statistically valid sample design to allow analytical tools to enable monitoring data to inform management decisions. AIM data collection encompasses both terrestrial and aquatic resources. AIM monitoring data collected across the planning area describe the range of natural conditions for terrestrial and aquatic resources.
Bankfull stage	The depth of water in a stream at which incipient flooding occurs as the result of a streamflow that recurs on average every 1 to 2 years.
Best management practice	A suite of techniques that guide, or may be applied to, management actions to aid in the achieving of desired outcomes.
Casual use	Includes any use of motorized vehicle that is not for subsistence, military, or emergency purpose and is not related to a permitted, authorized, or administrative activity authorized by the BLM or otherwise officially approved. Casual use is synonymous with off-road/off-highway vehicle (OHV) use as defined by 43 Code of Federal Regulations (CFR) 8340.0-5(a).
Code of Federal Regulations (CFR)	A codification of the general and permanent rules published in the Federal Register by the Executive Departments and agencies of the federal government. The CFR is divided into 50 titles, which represent broad areas subject to federal regulation. Each volume of the CFR is revised at least once each year and issued on a quarterly basis.
Connectivity corridor	Connectivity corridors were developed by modeling landform features to design a climate resilient connection between the Yukon Delta National Wildlife Refuge and the Innoko National Wildlife Refuge. The analysis takes a geodiversity approach by using topography, soil, and hydrologic features because those characteristics are less dynamic and more enduring than species composition or land cover. This approach assumes that similar ecosystem types and functions will occur in similar topographic conditions; that similar topographic niches (steep, high elevation, sunny slopes) can host similar ecological assemblages.
Conservation System Unit	Any Alaska unit of the National Park System, National Wildlife Refuge System, National Wild and Scenic Rivers Systems, National Trails System, National Wilderness Preservation System, or a National Forest Monument.
Conveyed	When the title to land was transferred from one party to another. The U.S. conveys title to land to Native corporations by patent and interim conveyance and to the State of Alaska by patent and tentative approval.

Term	Definition
Cultural resources	Locations of human activity, occupation, or usage that contain materials, structures, or landscapes that were used, built, or modified by people. Cultural resources can include historic and archaeological sites, structures, and districts, traditional cultural places, and locations of sacred or ceremonial value.
Decision Area	The lands within a planning area for which the BLM has authority to make land use and management decisions. In general, the BLM has jurisdiction over all BLM-administered lands (surface and subsurface) and over the subsurface minerals only in areas of split estate (areas where the BLM administers Federal subsurface minerals, but the surface is owned by a non-Federal entity, such as State Trust Land or private land).
Endangered species	An animal or plant species designated by the U.S. Fish and Wildlife Service (USFWS) to receive federal protection status because the species is in danger of extinction throughout all or a significant portion of its natural range.
Environmental Impact Statement (EIS)	A detailed statement of a given project's environmental consequences, including unavoidable adverse environmental effects, alternatives to the proposed action, the relationship between local short-term uses and long-term productivity, and any irreversible or irretrievable commitment of resources.
Environmental justice	The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.
Essential Fish Habitat	Those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Essential Fish Habitat is defined by the Magnuson-Stevens Fishery Conservation and Management Act (Public Law 94-265).
Executive Order	A rule or order issued by the President and having the force of the law.
Federal Land Policy and Management Act (FLPMA)	A law passed in 1976 to establish public land policy, guidelines for its administration, and provide for the management, protection, development, and enhancement of the public lands.
Federal Register	A daily publication that reports Presidential and federal agency documents.

Term	Definition
Fire regime	A description of the patterns of wildland fire occurrences, frequency, size, severity, and, sometimes, vegetation and fire effects, in a given area or ecosystem. A fire regime is a generalization based on wildland fire histories at individual sites. There are five standard fire regimes: • Fire Regime I, with a fire frequency of 0-35 years, surface fire to mixed fire type. • Fire Regime II, with a fire frequency of 0-35 years frequency, stand replacement fire type. • Fire Regime III, with a fire frequency of 35-100+ years, with a mixed fire type. • Fire Regime IV, with a fire frequency of 35-100+ years, with a stand replacement fire type. • Fire Regime V, with a fire frequency of 100+ years, with a stand replacement fire type.
Fire severity	The degree to which a site has been altered or disrupted by wildland fire; loosely, a product of fire intensity and residence time. In Alaska, fire severity refers to the amount of organic layer removed by a wildland fire event.
Fossil	Any preserved remains, impressions, or traces of an organism that lived in the geologic past.
Goals	Broad statements of desired outcomes and management direction that are usually not quantifiable.
Gross vehicle weight (GVW)	The total weight of the vehicle plus the maximum loaded carrying capacity of the vehicle as specified by the manufacturer (i.e., GVW = weight of vehicle + fuel + passengers + cargo, per manufacturers' limitations). Pull-behind trailers are not included in the GVW calculation for the vehicle.
High-value Watershed (HVW)	Watersheds that contain the highest fisheries and riparian resource values within the planning area. In these watersheds, riparian-dependent resources receive primary emphasis and management activities are subject to specific Required Operating Procedures. HVWs were developed using BLM's Aquatic Resource Value (ARV) data, which was updated by BLM in early 2018. The ARV examined all watersheds (Hydrologic Unit Code 12/Level 6) and watersheds specific to the Bering Sea-Western Interior (BSWI) and Central Yukon management plans and assessed different ecological attributes and assigned them scores for different categories of ARV and Watershed Condition Indicator. For the purpose of the BSWI Resource Management Plan (RMP), ratings assigned specifically to the planning area were used to develop the HVWs.

Term	Definition
Invasive species	Organisms that have been introduced into an environment where they did not evolve. Executive Order 13112 focuses on organisms whose presence is likely to cause economic harm, environmental harm, or harms to human health. See also noxious weeds.
Land conveyance	In Alaska, "conveyance" generally means the conveyance of lands under ANCSA and/or the Alaska Statehood Act or the Native Allotment Act.
Land disposal	A disposal is where the BLM sells land that is not encumbered by a selection application filed by ANCSA or the State of Alaska. Lands encumbered by the State of Alaska or ANCSA cannot be disposed of by the BLM but can be conveyed; see also land conveyance.
Land status	The legal standing of land within BLM boundaries. Land status includes private, military, State, State-selected, Native, Native-selected, and unencumbered public lands.
Lands with wilderness characteristics	These attributes include the area's size, its apparent naturalness, and outstanding opportunities for solitude or a primitive and unconfined type of recreation. They may also include supplemental values.
Land use plan	A plan that regulates the land use of an area(s) to assure its efficient and reasonable use, guide future land use decisions, and prevent land use conflicts. BLM planning regulations require that RMPs be consistent with approved or adopted land use plans (and similar plans of other federal, State, local, and tribal governments) to the extent that such plans are consistent with federal laws and regulations applicable to public lands.
Leasable minerals	Minerals subject to exploration and development under leases, permits, and licenses under various mineral leasing acts. Leasable minerals include oil, gas, and coal. See also locatable minerals.
Lease	A means of allowing long-term use of public lands without transferring ownership of that land.
Locatable minerals	Minerals subject to appropriation under the mining laws and 43 CFR 3809. Locatable minerals include base metals (e.g., copper, lead, and zinc), noble metals (e.g., silver and gold), nickel, iron, platinum group elements, bentonite, gem and semiprecious gemstones, and nephrite jade. See also leasable minerals.
Management Framework Plan	A planning decision document prepared before the effective date of the regulations implementing the land use planning provisions of the Federal Land Policy and Management Act (FLPMA). The Management Framework Plan establishes, for a given area of land, land-use allocations, coordination guidelines for multiple use, and objectives to be achieved for each class of land use or protection.

Term	Definition
Mechanized travel	Moving by a mechanical device (e.g., bicycle) not powered by a motor. See also non-motorized travel.
Memorandum of Understanding	A formal, written agreement between organizations or agencies that presents the relationship between the entities for purposes of planning and management.
Metalliferous	Yielding or containing metal. Metalliferous minerals include gold, silver, lead, copper, zinc, and nickel.
Motorcycle	Motorized vehicle with two tires and with a seat designed to be straddled by the operator. This includes motorcycles converted to run on a track(s) and ski(s) specifically over snow.
Motorized vehicles	Vehicles that are propelled by motors or engines, such as cars, trucks, OHV, motorcycles, and snowmobiles.
Multiple use	Includes (1) the management of all the various renewable surface resources so that they are utilized in the combination that will best meet the needs of the American people; (2) making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; (3) the understanding that some land will be used for less than all of the resources; and (4) the harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output (43 U.S. Code [U.S.C.] 1702(c)).
National Environmental Policy Act (NEPA)	A 1969 act mandating an environmental analysis and public disclosure of federal actions.
National Wild and Scenic River System	A system of nationally designated rivers and their immediate environments that have outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, and other similar values and are preserved in a free-flowing condition. The system consists of three types of streams: (1) recreational—rivers or sections of rivers that are readily accessible by road or railroad and that may have some development along their shorelines and may have undergone some impoundments or diversion in the past; (2) scenic—rivers or sections of rivers free of impoundments with shorelines or watersheds still largely undeveloped but accessible in places by roads; and (3) wild—rivers or sections of rivers free of impoundments and generally inaccessible except by trails, with watersheds or shore-lines essentially primitive and waters unpolluted. See also Wild and Scenic River.

Term	Definition
Native selected	BLM lands that have been selected by a Native corporation under the ANCSA, which gave Alaska Natives an entitlement of 44 million acres to be selected from a pool of public lands specifically defined and withdrawn by the act for that purpose.
No action alternative	The most likely condition expected to exist if current management practices continue unchanged. The analysis of this alternative is required for federal actions under NEPA.
Non-motorized travel	Moving by foot, stock or pack animal, boat, or mechanized vehicle, such as a bicycle. See also mechanized travel.
Noxious weed	A plant species designated by federal or State law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or nonnative, new, or not common to the U.S. See also invasive species.
Objectives	Specific desired outcomes for resources. Objectives may be quantifiable and measurable and may have established timeframes for achievement, as appropriate.
Off-highway vehicle	Any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding: (1) any non-amphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the authorizing officer, or otherwise officially approved; (4) vehicles in official use; and (5) any combat or combat support vehicle when used for national defense (43 CFR 8340.0-5(a)). OHVs generally include dirt motorcycles, dune buggies, jeeps, four-wheel drive vehicles, snowmobiles, ATVs. OHV is synonymous with off-road vehicle, utility type (or terrain) vehicle (UTV), and ATV. Aircraft are not OHVs.

Term	Definition
Off-highway vehicle area designations	Used by federal agencies in the management of OHVs on public lands. Refers to the land use planning decisions that permit, establish conditions, or prohibit OHV activities on specific areas of public lands. All public OHV designations (43 CFR 8342.1). The CFR requires all BLM-managed public lands to be designated as "open," "limited," or "closed to off-road vehicles" and provides guidelines for designation. The definitions of open, limited, and closed are provided in 43 CFR 8340.0-5 (f), (g), and (h), respectively. • Closed: Motorized vehicle travel is prohibited in the area. Access by means other than motorized vehicle is permitted. Areas are designated closed if closure to all vehicular use is necessary to protect resources, promote visitor safety, or reduce use conflicts. • Open: Motorized vehicle travel is permitted year-long anywhere within an area designated as "open" to OHV use. Open designations are used for intensive OHV use areas where there are no special restrictions or where there are no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting cross-country travel. • Limited: Motorized vehicle travel within specified areas and/or on designated routes, roads, vehicle ways, or trails is subject to restrictions. The "limited" designation is used where OHV use must be restricted to meet specific resource management objectives. Examples of limitations include number or type of vehicles; time or season of use; permitted or licensed use only; use limited to designated roads and trails; or other limitations if restrictions are necessary to meet resource management objectives, including certain competitive or intensive use areas that have special limitations.
Outstandingly remarkable value	As defined by the Wild and Scenic Rivers Act of 1968, an "outstandingly remarkable value" is the characteristic of a river segment that is judged to be a rare, unique, or exemplary feature that is significant at a regional or natural scale. Values can be recreational, scenic, geological, historical, cultural, biological, botanical, ecological, heritage, hydrological, paleontological, scientific, or research-related.

Term	Definition
Over-the-snow vehicle	A motorized vehicle designed or converted for use over snow that is not a snowmobile, runs on a track or tracks, uses a ski or skis or track for turning, and has a vehicle width greater than 50 inches. Examples include vehicles or trucks converted to tracks, snow cats, snow buses, and Nodwells. All over-the-snow vehicles would require a pre-use authorization for use of this vehicle type.
Paleontological	Of or relating to past geological periods. Paleontological resources include fossils of shellfish, swamp forests, dinosaurs, and other prehistoric plants and animals, including both vertebrates and invertebrates, and direct evidence of their presence (tracks, worm burrows, etc.).
Paleontological resources	A paleontological resource is any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth.
Particulates	Fine liquid or solid particles found in the air or emissions, such as dust, smoke, mist, fumes, or smog.
Permafrost	Soil, sand, gravel, or bedrock that has remained below 32°F for two or more years. Permafrost features include frost boils (accumulation of excess water and mud in subsurface materials during spring thaw which may break through the surface), hummocks (a mound of broken ice projecting upward, formed by ice deformation), ice wedges (a build-up of ice in frozen soil, that is wedge-shaped in cross-section), ice lenses (accumulation of ice in cavities and hollows in the soil), pingos (an arctic mound or conical hill, consisting of an outer layer of soil covering a core of solid ice), polygonal ground (a type of patterned ground in areas of ice wedges), and solifluction lobes (an isolated tongue-shaped feature formed by rapid solifluction [downhill movement of soil] on a slope).
Permanent structure	A structure fixed to the ground by any of the various types of foundations, slabs, piers, poles, or other means allowed by building codes. The term also includes a structure placed on the ground that lacks foundations, slabs, piers, or poles and that can only be moved through disassembly into its component parts or by techniques commonly used in house moving (43 CFR 3715.0-5).
Permit	A means of authorizing use of public lands in an equitable, safe, and enjoyable manner while minimizing adverse impacts and user conflicts. A permit does not transfer ownership of the land, it simply allows the permittee to use the land in a pre-determined fashion for a set amount of time.

Term	Definition
Personal use	Allowed use of renewable resources by individuals other than federally qualified rural residents. Such resource use cannot be sold, bartered, traded or used to obtain a profit.
Planning Area	The geographic area within which the BLM will make decisions during a planning effort. A planning area boundary includes all lands regardless of jurisdiction; however, the BLM will only make decisions on lands that fall under the BLM's jurisdiction (including subsurface minerals). Unless the State Director determines otherwise, the planning area for a RMP is the geographic area associated with a particular field office (43 CFR 1610.1(b)). State Directors may also establish regional planning areas that encompass several field offices and/or states, as necessary.
Pollutant	Any substance introduced into the environment that adversely affects the usefulness of a resource or the health of humans, animals, or ecosystems.
Potential natural condition (PNC)	The range of natural conditions that defines the preferred values for a quantitative attribute. PNC is calculated from data collected in the region at similar sites that experience minimal human disturbance. Statistically, PNC is the portion of a metric's distribution excluding the top and/or bottom percentiles, outliers, of its measured range of variability. These outliers of PNC exhibit impairment from a functioning condition as a result of disturbance. These disturbances could include wildland fire, insects/disease, thermokarst dynamics, etc.
Prescribed fire	A fire purposefully ignited to meet specific objectives. Prior to ignition, a written, approved fire plan must exist and legal requirements must be met. Also known as a prescribed burn.
Primitive road	A linear route managed for use by four-wheel drive or high-clearance vehicles. Primitive roads do not normally meet any BLM road design standards.
Primitive route	Any transportation linear feature located within a wilderness study area or lands with wilderness characteristics prioritized for management by a land use plan and not meeting the wilderness inventory road definition.
Proper functioning condition	Riparian habitats are at proper functioning condition when adequate vegetation, land form, or large woody debris is present to (1) dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; (2) filter sediment, capture bedload, and aid floodplain development; (3) improve floodwater retention and groundwater discharge; (4) develop root masses that stabilize streambanks against cutting action; (5) develop diverse ponding and channel characteristics to provide the habitat and water depth, duration, and temperature necessary for fish production, and other uses; and (6) support greater biodiversity.

Term	Definition
Public land	FLMPA (43 U.S.C. 1702) defines public land as land or interest in land owned by the U.S. and administered by the Secretary of the Interior through the BLM without regard to how the U.S. acquired ownership, except land located on the Outer Continental Shelf and land held for the benefit of Native Americans, Aleuts, and Eskimos. ANILCA (16 U.S.C. 3102) defines public lands as land situated in Alaska which, after the date of the enactment of this Act, are federal lands, except (1) land selections of the State of Alaska which have been tentatively approved or validly selected under the Alaska Statehood Act; (2) land selections of a Native corporation made under ANCSA that have not been conveyed, unless such selection is determined to be invalid or is relinquished; and (3) lands referred to in section 19(b) of ANCSA.
Public Land Order	Congressional or secretarial orders defining withdrawals of public lands by statute or secretarial order from operation of some or all of the public land laws.
Public use	This category of cultural resource use may be applied to any cultural property or historical features in the planning area found to be appropriate for use as an interpretive exhibit or for related educational and recreational uses by the public.
Record of Decision	A public document associated with an EIS that identifies all alternatives, provides the final decision, the rationale behind that decision, and commitments to monitoring and mitigation.
Recreation and Public Purposes (R&PP) Act	The R&PP Act provides guidelines and authorization for the transfer (e.g., lease or sale) of certain public lands (e.g., parks or cemeteries) to states or their political subdivisions, and to nonprofit corporations and associations, to serve community and recreational purposes.
Research Natural Area (RNA)	An area that is established and maintained for the primary purpose of research and education because the land has one or more of the following characteristics: (1) a typical representation of a common plant or animal association; (2) an unusual plant or animal association; (3) a threatened or endangered plant or animal species; (4) a typical representation of common geologic, soil, or water features; or (5) outstanding or unusual geologic, soil, or water features. Uses of RNAs are defined in 43 CFR 8223.1.

Term	Definition
Resource Management Plan (RMP)	A plan that guides future land management actions and subsequent site-specific implementation decisions for an area(s). RMPs establish goals and objectives for resource management (desired outcomes) and the identified resource uses (allocations) that are allowable, restricted, or prohibited in order to achieve the goals and objectives. Management actions are also identified where they can help to achieve desired outcomes and include measures or criteria that may guide both day-to-day and long-term management. All decisions are pursuant to the multiple-use and sustained-yield mandate of the FLPMA.
Right-of-way (ROW)	The legal right to pass over another owner's land or the area over which a ROW exists.
Road	A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.
ROW Avoidance Area	Areas where new ROWs should be placed in other areas if feasible. Determinations to allow a ROW within a ROW avoidance area would be made on a case by case basis by the authorized officer after project specific NEPA has been completed.
ROW Exclusion Area	Areas where new ROWs not allowed. A new ROW within a ROW Exclusion Area would require a plan amendment.
Salable Minerals	Minerals subject to the Materials Act of 1947, as amended. Salable minerals include materials such as sand and gravel.
Scientific use	This category of cultural resource use may be applied to any cultural property in the planning area available for consideration as the subject of scientific or historical study at the present time, using currently available research techniques. Study includes methods that may result in the property's physical alteration.
Scoping	The process used to determine, through public involvement, the range of issues that the RMP should address.
Sensitive species	Those wildlife, fish, or plant species designated by the BLM-Alaska State Director, usually in cooperation with the State agency responsible for managing the species, as sensitive. They are: (1) species under status review by USFWS and/or the National Marine Fisheries Service; (2) species whose numbers are declining so rapidly that federal listing may be necessary; (3) species with typically small and widely dispersed populations; or (4) species inhabiting ecological refuges or other specialized or unique habitats.
Seral	Relating to ecological communities where all successional stages of biotic development are represented.

Term	Definition
Shuttle	A business that provides transportation services to and from public lands. The service may be for an individual or for an individual plus gear. Shuttle operations are typically short in duration (e.g., dropping off hikers, mountain bikes, and bikers to a trailhead). Shuttle drivers, by definition, are not commercial guides. The shuttle driver has no obligation to the individual once the transportation aspect is complete. A shuttle business could be authorized under a commercial or vending permit depending on the circumstances.
Snowmobile	A motorized vehicle designed for use over snow that runs on a track or tracks and uses a ski or skis for steering, has a curb weight of 1,000 pounds or less and a maximum vehicle width of 50 inches or less, is steered using handlebars, and has a seat designed to be straddled by the operator. An example includes production snowmobiles.
Special Recreation Management Area	Areas where the management emphasis is on recreation, though other resource uses and development are allowed.
Special Recreation Permit (SRP)	A means of authorizing recreational uses of public lands and waters. SRPs are issued for specific recreational uses as a means to manage visitor use, protect natural and cultural resources, and provide a mechanism to accommodate commercial recreational uses. There are four types of permits: commercial, competitive, organized groups/events, and individuals or groups in special areas.
Special status species	Special status species include the following: endangered species, threatened species, proposed species, candidate species, state-listed species, and BLM-Alaska sensitive species.
State-selected	Formerly unappropriated and unreserved public lands that were selected by the State of Alaska as part of the Alaska Statehood Act of 1958 and ANILCA. Until conveyance, State-selected lands outside of National Park system lands or National Wildlife Refuges will be managed by the BLM. ANILCA allowed for overselection by the State by up to 25 percent of the entitlement. Therefore, some State-selected lands will eventually be retained in long-term federal management.
Stipulations	To provide additional detail or criteria that could be applied to allowable uses or management actions. Examples include: no surface occupancy, Controlled Surface Use, and timing limitation. These stipulations apply to fluid mineral leasing and development of federal mineral estate underlying BLM-managed lands, privately owned lands, and State-owned lands. Another example would include stipulations (or conditions) that could be required in ROW avoidance areas in order to consider those areas available for ROW.

Term	Definition
Subsistence use	The customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade. This includes any use of surface use transportation as a means of access to subsistence resources as provided for under Alaska National Interest Lands Conservation Act (ANILCA), Sections 811 and/or ANILCA Section 1110.
Successional stage	The replacement in time of one plant community with another. The prior plant community creates conditions that are favorable for the establishment of the next community.
Summer	Any time there is not adequate snow cover or frost to allow the operation of over-the-snow vehicles or snowmobiles without damaging surface vegetation and soils.
Sustained yield	The achievement and maintenance in perpetuity of a high-level annual or regular output of the various renewable resources of the national forests without impairment of the productivity of the land (43 U.S.C. 1702(h)).
Temporary route	Short-term overland roads, primitive roads, or trails authorized or acquired for the development, construction, or staging of a project or event that has a finite lifespan.
Temporary structure	Tents, tent frames, and tents with platforms, all of which are disassembled and removed.
Thermokarst	Ground subsidence due to the thawing of permafrost.
Threatened species	A designation by the USFWS for when a plant or animal is likely to become endangered throughout all or a specific portion of its range within the foreseeable future.
Traditional Cultural Property	A property eligible for inclusion in the National Register of Historic Places because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community.
Traditional use	This category of cultural resource use may be applied to any cultural property in the planning area known to be perceived by Alaska Natives as important in maintaining their cultural identity, heritage, or well-being.

Term	Definition
Trail	A linear route managed for human-powered, stock, or OHV forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.
Transportation linear disturbance	An existing user made route that is not actively managed by the BLM. The decision regarding whether to retain or close this type of transportation linear feature would be made through implementation-level travel management planning
Travel Management Area (TMA)	Polygons or delineated areas where travel management (either motorized or non-motorized) needs particular focus. These areas may be designated as open, closed, or limited to motorized use and will typically have an identified or designated network of roads, trails, ways, and other routes that provide for public access and travel across the area. All designated travel routes within TMAs should have a clearly identified need and purpose, and clearly defined activity types, modes of travel, and seasons or times for allowable access or other limitations.
Travel Management Plan	The document that describes the decisions related to the selection and management of the transportation network. This document can be an appendix to an RMP, incorporated in activity implementation plan (such as a Recreation Implementation Plan), or a stand-alone document after development of the RMP.
Treadway	The actively used surface of a trail.[1]
Unencumbered	Public lands that have not been selected by the State of Alaska or Native organizations. These lands will be retained in long-term federal management.
Unmanned aircraft systems (UAS)	An aircraft without a human pilot onboard; instead, the UAS is controlled from an operator on the ground. Also known as drones.
United States Code (U.S.C.)	The consolidation and codification of general and permanent laws of the United States. The U.S.C. is divided into 53 titles that are separated by subject matter. It is prepared by the Office of the Law Revision Counsel of the United States House of Representatives.
Utility terrain vehicle (UTV)	A recreational motor vehicle other than an ATV or snowmobile designed for and capable of travel over unpaved roads, traveling on four or more low-pressure tires or tracks, with a curb weight of 1,500 pounds or less (2,000 pounds GVW) and a maximum width of 64 inches. Examples include production “quad/side-by-sides” and Argos.

[1] US Department of Transportation Federal Highway Administration. 2007. Trail Construction and Maintenance Handbook. July.

Term	Definition
Visual resource management	A means of managing visual resources by designating areas as one of four classes: (1) Class I–maintaining a landscape setting that appears unaltered by humans, (2) Class II–designing proposed alterations so as to retain the existing character of the landscape, (3) Class III–designing proposed alterations so as to partially retain the existing character of the landscape, and (4) Class IV–providing for management activities which require major modifications of the existing character of the landscape.
Watercraft	An inboard engine vessel, usually driven by a jet-pump, that typically carries one to three persons, and is operated by a person sitting by straddling a seat, standing, or kneeling on the boat, rather than in the conventional manner of sitting below the gunwale of the boat.
Wild and Scenic River	A river that is part of the National Wild and Scenic River System. Also known as a Wild River. In Alaska, most Wild and Scenic Rivers were designated through the ANILCA. See also National Wild and Scenic Rivers System.
Wildfire	An unplanned ignition of a wildland fire (such as a fire caused by lightning, volcanoes, or unauthorized and accidental human-caused fires) and escaped prescribed fires.
Wildland fire	General term describing any non-structure fire that occurs in the wildland. Wildland fires are categorized into two distinct types: (1) Wildfires–unplanned ignitions or prescribed fires that are declared wildfires; or (2) Prescribed fires–planned ignitions.
Winter	Any time where there is adequate snow cover or frost to allow the operation of over-the-snow vehicles or snowmobiles without damaging surface vegetation and soils (43 CFR 36, ANILCA Special Access Provision). Adequate snow cover or frost shall mean snow of sufficient depth, generally 6-12 inches or more, or a combination of snow and frost depth, sufficient to protect the underlying vegetation and soil.
Withdrawal	Includes (1) federal land set aside and dedicated to a present, governmental use; (2) public land set aside for some other public purpose (e.g., pending a determination of how the land is to be used); (3) an action approved by the Secretary of the Interior or a law enacted by Congress that closes land to specific uses under the public land laws (usually sale, settlement, location, and entry), or (4) limits on land use to maintain public values, reserves area for particular public use or program, or transfers jurisdiction of an area to another federal agency. Usually enacted through a public land order or legislation.

Term	Definition
Woodland harvest	The gathering of any woodland products. These include any vegetative products, including firewood, biomass, house logs, saw logs, berries, and mushrooms for personal or commercial use. It does not include incidental use of poles for marking trails or hanging game. Incidental use of this type is not considered woodland harvest and would not be subject to management requirements.

Appendix C: Preparers

Appendix C. Preparers

Name	Area of Responsibility	Participation
Amy Rosenthal	Project Manager (2016-2018)	Project Lead
Louise Kling	Project Manager (2018-present) Assistant Project Manager (2016-2018); Visual Resources, Wild and Scenic Rivers	Project Lead, Author, Reviewer, Supervisor
Emily Newell	Assistant Project Manager (2018-present)	Author, Reviewer, Supervisor
Matt Petersen[3]	Senior Project Advisor/Facilitator	Oversight, Facilitation
Chad Ricklefs[1]	Senior Project Advisor	Oversight, Supervisor
Gary Reimer	Program Manager (2016-2018)	Oversight, Supervisor
Jon Isaacs	Program Manager (2018-present) Subsistence Reviewer	Oversight, Supervisor
Angel Rabon	On-site Administrative Assistant (2018-present)	Administrative
Elizabeth Appleby	On-site Administrative Assistant (2016-2018)	Author, Public Outreach, Administrative
Paul Dworian	Discipline Lead; Water Resources and Minerals	Author, Reviewer
Maria Shepherd	Discipline Lead; Wildlife	Author, Reviewer
Courtney Brozovsky	GIS Lead	GIS, Supervisor
Jessica Evans	Public Involvement Lead; Lands and Realty	Author, Public Outreach, Supervisor
Angie Adams[1]	National Trails, Special Designations (ACECs)	Author
Elizabeth Bella	Vegetation, Non-Native Invasive Species, Grazing	Author and Senior Reviewer
Dan LaPlant	Grazing (2016)	Author
Tara Bellion	Subsistence, ANILCA Section 810	Author and Senior Reviewer
Kim Anderson	Wildlife	Author
Jan Reed	Vegetation and Nonnative Invasive Species	Author
Linsey DeBell	Air and Air Quality related Values, Climate Change	Author
Zoe Ghali[1]	Forestry and Woodland Products, Wildland Fire	Author
Peter Gower[1]	Recreation and Visitor Services	Author
Drew Vankat[1]	Recreation and Visitor Services	Author
Anne Minihan	Water Resources and Hazardous Materials and Health and Human Safety	Author
Janet Guinn	Technical Editing (2016-2017)	Editing
Linda Harriss	Word Processing	Formatting
Derek Holmgren[1]	Noise	Noise Advisor
Jeff Johnson[1]	Wildland Fire (2016)	Author
Mike Kelly	Cultural Resources, Paleontological Resources	Author and Senior Reviewer
Ned Gaines	Cultural Resources (2016)	Author
Burr Neely	Cultural Resources, Paleontological Resources	Author
Tim Kramer	Lands with Wilderness Characteristics, Travel and Transportation Management (2016-2017)	Author
Anne Ferguson	Travel and Transportation Management (2018)	
Jan Aarts	Technical Writer	Author
Bill Morris[2]	Fish and Aquatic Species	Author

Name	Area of Responsibility	Participation
Greg Fulling[2]	Fish and Aquatic Species	Author
Paul Myerchin	Leasable Minerals, Locatable and Salable Minerals, Geology and Soils	Author
Ryan Rapuzzi	Hazardous Materials and Public Safety, Renewable Energy (2016-2017)	Author
Christina Schmitt	Air and Air Quality related Values, Climate Change (2016-2018)	Author
Thomas Schultz	GIS Technician	GIS
Neal Smith	Grazing (2016-2017)	Author
Kelsey Tranel	Technical Editing and Word Processing (2016)	Editing, Formatting
Danni Kline	Technical Editing (2018-present)	Editing
Diana Burke	Technical Editing (2018-present)	Editing
Terry Chouinard	Formatting and Word Processing (2018-present)	Formatting
Young Cho	Formatting and Word Processing (2018-present)	Formatting
Carol Cook	508-Compliance Specialist	Formatting

[1] EMPSi
[2] Owl Ridge
[3] SWCA

Appendix D: References

Appendix D. References

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Appendix E: Management Regulations, Policy, and Program Guidance

Appendix E. Management Regulations, Policy, and Program Guidance

Management Regulations

1. Locatable, Leasable, and Salable Mineral Development

- The General Mining Law of 1872
- Mineral Leasing Act of 1920
- Mineral Leasing Act for Acquired Lands of 1947
- Federal Coal Leasing Amendments Act of 1976 (amendment to the Mineral Leasing Act)
- Materials Act of July 31, 1947
- Domestic Minerals Program Extension Act of 1953
- The Multiple Surface Use Act of 1955
- Mining and Minerals Policy Act of 1970
- Geothermal Act of 1970
- National Materials and Minerals Policy, Research and Development Act of 1980
- The Energy Policy Act of 2005
- Information Bulletin 2008 Bureau of Land Management (BLM) Energy and Mineral Policy
- 43 Code of Federal Regulations (CFR) 3100, 3200, 3500, 3600, 3700, 3800
- Surface Mining Control and Reclamation Act of 1977
- Alaska Surface Coal Mining Control and Reclamation Act of 1983

2. Federal and State Laws

- Endangered Species Act of 1973 (as amended) (16 United States Code [U.S.C.] 1531 – 1544)
- Migratory Bird Treaty Act of 1918 (as amended) (16 U.S.C. 703 – 712)
- Antiquities Act of 1906 (16 U.S.C. 431 et seq.)
- National Trails System Act (Public Lay [PL]-90-543) as amended by the National Parks and Recreation Act (PL 96-625)
- Wild and Scenic Rivers Act (16 U.S.C. 1271-1287)
- National Historic Preservation Act of 1966 (as amended (16 U.S.C. 470 et seq.)
- Executive Order 11593 – Protection and Enhancement of the Cultural Environment (May 1971)
- Executive Order 11644 – Use of Off-Road Vehicles on the Public Lands (February 1972)
- Executive Order 11989 – Off-Road Vehicles on Public Lands (May 1977)

- Executive Order 13855 – Promoting Active Management of America's Forests, Rangelands, and Other Federal Lands to Improve Conditions and Reduce Wildfire Risk (December 2018)
- Omnibus Public Land Management Act of 2009 (PL 111-11)
- Archaeological and Historic Preservation Action of 1974, which amends the Reservoir Salvage Act of 1960 (PL 86523; PL 93291; 16 U.S.C 469 et seq.)
- Archaeological Resources Protection Act of 1979, as amended (16 U.S.C. 470)
- American Indian Religious Freedom Act of 1978 (42 U.S.C. 1996)
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 12411249)
- Curation of Federally Owned and Administered Archaeological Collections (36 CFR 79)
- Executive Order 13287 – Preserve America (March 2003)
- Executive Order 13007 – Indian Sacred Sites (May 1996)
- Historic Sites Act of 1935 (16 U.S.C. 461467)
- Executive Order 13195 – Trails for America in the 21st Century (January 2001)
- Fish and Wildlife Coordination Act of 1934 (16 U.S.C. 661 – 666c)
- Executive Order 11987 – Exotic Organisms (May 1977)
- Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668-688c)
- Executive Order 13186 – Responsibility of Federal Agencies to Protect Migratory Birds (January 2001)
- 1937 Reindeer Industry Act
- 1927 Alaska Livestock Grazing Act
- Federal Subsistence Hunting Regulations (36 CFR 242)
- Federal Clean Air Act of 1970/1977 and Clean Air Act Amendments of 1990 (42 U.S.C. 7401 et seq.)
- Alaska Administrative Code (AAC), Title 18, Chapter 50 (18 AAC 50) Air Quality Control; 18 AAC 52, Emissions Inspection and Maintenance Requirements for Motor Vehicles; and 18 AAC 53, Fuel Requirements for Motor Vehicles
- Federal Cave Resources Protection Act of 1988 (43 CFR 37)
- Executive Order 11988 – Floodplain Management (May 1977)
- Resource Conservation and Recovery Act of 1976 (40 CFR 239 -282)
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. & (33) 9601(14) & (33))
- Toxic Substance Control Act of 1976 (15 U.S.C. 53)

- Alaska Administrative Code Title 11 – Natural Resources
- Alaska Administrative Code Surface Water Quality Standards (18 AAC 70)
- Section 404 of the Clean Water Act of 1972
- Section 402 of the Clean Water Act of 1972
- Spill Prevention, Control, and Countermeasure Rule (40 CFR 112)
- Alaska Statute (AS) Title 16 Fish and Game Law
- Magnuson-Stevens Fishery Conservation and Management Act of 1976
- State of Alaska Statute 16.05.841 – Fishway Act
- State of Alaska Statute 16.05.871 – Anadromous Fish Act
- State of Alaska Statute 16.05.258 – Subsistence Use and Allocation of Fish and Game
- State of Alaska regulations regarding importing, possessing, transporting, or releasing fish and animals into wild Alaska (AS 03.015.010; AS 03.05.027; AS 44.37.030; AS 03.05.090, 11 AAC 34.130; 11 AAC 34.140; 11 AAC 34.160; 11 AAC 34.170; AAC 34.115)
- Alaska Historic Preservation Act (AS 41.35.010 – 41.35.240)
- Paleontological Resources Protection Act (16 U.S.C. 470)
- Protection Act of September 20, 1922 (16 U.S.C. 594)
- Department of Interior Appropriations Act of 1976 (PL 94-165)
- Alaska Forestry Resources and Practices Act (AS 41.17)
- Agriculture Act of 2014, section 8205 (16 U.S.C. 6591)
- Native Allotment Act of 1906
- Recreation and Public Purposes Act (43 CFR 2912)
- Yukon River Salmon Act of 2000 (16 U.S.C. 5727)
- National Trails System Act of 1968 as amended (16 U.S.C. 1241-1251)
- Land and Water Conservation Fund Act of 1965 (16 U.S.C. 4601-4 through 4601-11)
- Alaska Land Transfer Acceleration Act of 2004
- Alaska Native Veterans Land Allotment Equity Act of 2002
- Alaska Sustainable Energy Act (Senate Bill 220)

BLM Policy and Program Guidance for Implementation-Level Planning and Projects

Subsequent implementation-level projects and planning conducted under the Draft Resource Management Plan/Environmental Impact Statement will be subject to the following policy and program guidance:

- BLM Manual 1601 – Land Use Planning (2000)
- BLM Manual 6840 – Special Status Species Management (2008)
- BLM Manual 1730 – Management of Domestic Sheep and Goats to Sustain Wild Sheep (2016)
- BLM Manual 1740 – Renewable Resource Improvements and Treatments (2008)
- BLM Manual 1737 – Riparian-Wetland Area Management (1992)
- BLM Manual 1626 – Travel and Transportation (July 2011)
- BLM Manual 6400 – Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, Planning, and Management (July 2012)
- BLM Handbook H-1703-1 – Comprehensive Environmental Response, Compensation, and Liability Act Responses Actions Handbook (July 2001)
- BLM Handbook H-8342 – Travel and Transportation (March 2012)
- National Fire Plan: Federal Wildland Fire Management Policy (1995)
- National Fire Plan: Review and Update of the 1995 Federal Wildland Fire Management Policy (2001)
- Guidance for Implementation of Federal Wildland Fire Management Policy (2009)
- Protecting People and Natural Resources: A Cohesive Fuels Treatment Strategy (February 2006)
- A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy (August 2001)
- A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Strategy Implementation Plan (December 2006)
- BLM Handbook H-9211-1 – Fire Management (2012)
- BLM Burned Area Emergency Stabilization and Rehabilitation Handbook H-1742-1 (2007)
- Alaska Enhanced Smoke Management Plan for Planned Fire: Procedures Manual (2015)
- BLM Manual 1626 – Travel and Transportation (2011)
- Alaska Enhanced Smoke Management Plan for Planned Fire, Procedures Manual Alaska Department of Environmental Conservation (June 2015)
- Dust Control Field Guide for Gravel Driving Surfaces, Alaska Department of Transportation (July 2015)
- BLM Manual 6840 – Special Status Species Management (2001)
- Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds (January 10, 2001)
- Executive Order 11988 – Floodplain Management (May 1977)
- Executive Order 11990 – Protection of Wetlands (May 1977)

- BLM Manual 8320 – Planning for Recreation and Visitor Services (2011)
- Avian Protection Plan Guidelines (2005)
- Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006 (2006)
- BLM Manual 7300 – Air Resource Management Program (2009)
- Wetland Riparian Initiative (1990)
- Healthy Forest Initiative (Ongoing)
- Healthy Forest Restoration Act of 2003
- The Federal Land Assistance, Management and Enhancement Act of 2009
- Record of Decision Final Vegetation Treatments Using Herbicides Programmatic Environmental Impact Statement (2007)
- BLM Manual 6250 – National Scenic and Historic Trail Administration (2012)
- BLM Manual 6280 – Management of National Scenic and Historic Trails Under Study or Recommended as Suitable for Congressional Designation (2012)
- BLM Manual 6720 – Aquatic Resource Management (1991)
- BLM Manual 7000 series – Soil, Water, and Air Management
- BLM Manual 6310 – Conducting Wilderness Characteristics Inventory on BLM Lands (2012)
- BLM Manual 6320 – Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process (2012)
- BLM Manual 1613 – Areas of Critical Environmental Concern (1988)
- BLM Manual 6400 – Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, Planning, and Management (July 2012)
- BLM Manual 6840 – Special Status Species Management (2008)
- BLM Manual 1794 – Draft Regional Mitigation Strategy Manual (2013)
- BLM Manual 8100 – Cultural Resource Management (2004)
- BLM Manual 8270 – Paleontological Resource Management (1998)
- BLM Manual 8353 – Trail Management Areas – Secretarially Designated National Recreation, Water and Connecting and Side Trails (2012)
- Secretarial Order 3308 – Management of the National Landscape Conservation System (November 2010)
- Secretarial Order 3319 – Establishment of a National Water Trails System (February 2012)
- Secretarial Order 3372 – Reducing Wildfire Risks on Department of the Interior Land Through Active Management (January 2019)

- Protocol for Managing Cultural Resources on Lands Administered by the Bureau of Land Management in Alaska (2014)
- National Programmatic Agreement with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers (2012)
- Secretarial Order 3310 – Protecting Wilderness Characteristics on Lands Managed by the Bureau of Land Management (2010)
- BLM Handbook H-3070-2 – Economic Evaluation of Oil and Gas Properties
- BLM Handbook H-3073-1 – Coal Evaluation (October 2014)
- BLM Handbook H-3100-1 – Oil and Gas Leasing Handbook (September 1985)
- BLM Handbook H-3101-1 – Issuance of Leases (November 1985)
- BLM Handbook H-3150-1 – Onshore Oil and Gas Geophysical Exploration Surface Management Requirements (June 1994)
- BLM Handbook H-3203-1 – Leasing Terms
- BLM Handbook H-3468 – Coal Inspection and Enforcement (August 2014)
- BLM Handbook H-3600-1 – Mineral Materials Disposal Handbook (September 2016)
- BLM Handbook H-3830-1 – Administration of Mining Claims, Mill Sites, and Tunnel Sites (October 2015)
- BLM Handbook H-3890-3 – Validity Mineral Reports (October 2003)
- 43 CFR 8360 through 8365 – Visitor Services
- 43 CFR 2932 – Special Recreation Permits
- 43 CFR 2650.1 – Interim Management
- 43 CFR 8340 – Off-Road Vehicles
- 43 CFR 36 – Transportation involving Conservation System Units in Alaska
- BLM Handbook H-8320-1 – Planning for Recreation and Visitor Services (August 2014)
- BLM Handbook H-2930-1 – Recreation Permit Administration (November 2014)
- BLM Handbook H-8410-1 – Visual Resource Inventory (January 1986)
- BLM Handbook H-8431-1 – Visual Resource Contrast Rating (January 1986)
- BLM Manual 2930 – Recreation Permits and Fees (October 2007)
- BLM Manual 6400 – Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, and Management (July 2012)
- BLM Manual 8300 Series: Recreation Management
- BLM Manual 8400 Series: Visual Resource Management

- BLM Manual 9100 – Facilities Planning, Design, Construction and Maintenance (June 2008)

Select Provisions from the Alaska National Interest Lands Conservation Act (ANILCA)

Access Authorized under the Alaska National Interest Lands Conservation Act (ANILCA)

ANILCA authorizes specific methods of access for subsistence use and traditional activities:

- The use of snowmobiles, motorboats and other means of surface transportation traditional used for subsistence purposes by local residents on all federally-managed public lands Section 811(b)).
- The use of snowmachines, motorboats, airplanes and non-motorized surface transportation methods for traditional activities on conservation system units, national recreation areas, and national conservation areas (Section 1110(a)).

ANILCA authorized access is subject to "reasonable regulation." To comply with ANILCA, should travel management planning decisions restrict or close any of these methods of access, BLM will initiate a supplemental regulatory process following issuance of the final decision document (Record of Decision for EIS' and Finding of No Significant Impact for EAs). This regulatory process will be followed for both proposed interim and proposed final travel management decisions, which includes public notice, hearings in the affected vicinities, and an opportunity for public comment.

Access to State and Private Inholdings

ANILCA Section 1110(b) grants "rights as may be necessary to assure adequate and feasible access for economic and other purposes" to state and private inholdings, including subsurface rights, valid mining claims, or other valid occupancy, within or effectively surrounded by conservation system units. Department of Interior implementing regulations at 43 CFR 36.10 identify procedures for providing such access not otherwise provided by ANILCA Title XI.

ANILCA Section 1323(b) grants access to nonfederally owned land surrounded by public land managed by BLM to secure to the owner "reasonable use and enjoyment," subject to terms and conditions and the rules and regulations applicable to access across the public lands.

ANILCA Title XI - Transportation and Utility Systems in and Across, and Access into Conservation System Units

Congress found that Alaska's transportation and utility network was largely undeveloped and the future needs for transportation and utility systems in Alaska would best be identified and provided for through an orderly, continuous decision-making process involving the State and Federal Governments and the public (ANILCA Section 1101(a)). If any portion of a proposed transportation and utility route or system identified in ANILCA Section 1102(4)(B) would be located within a conservation system unit, the application for the proposed project is subject to the applicable provisions in ANILCA Title XI and Department of Interior regulations at 43 CFR 36.

Temporary Facilities and Equipment for the Take of Fish and Wildlife

Existing and future establishment of temporary facilities and equipment related to the take of fish and wildlife are allowed on all federally-managed public lands where the taking of fish and wildlife is permitted and must be constructed, used and maintained in the manner described in ANILCA Section 1316(a).

Existing and New Cabins

Cabins are allowed within conservation system units as provided in ANILCA Sections 1303 and 1315. In designated wilderness, previously existing public use cabins are allowed to continue and may be maintained and replaced, subject to conditions that preserve wilderness character. New public use cabins and shelters are allowed in designated wilderness for the protection of public health and safety, subject to conditions identified in ANILCA Section 1315(d), including notice to Congress of an intention to remove an existing cabin or construct a new public use cabin.

Navigation Aids and Other Facilities

Access to, and establishment, operation, and maintenance of new and existing air and water navigation aids, communication sites and related facilities, facilities for weather, climate, and fisheries research and monitoring, and national defense are allowed within conservation system units, including designated wilderness, in accordance with ANILCA Section 1310.

Appendix F: Parcels Available for Exchange or Disposal

Introduction

In preparation for this land use planning initiative, the BLM conducted an inventory of the public land in the planning area to determine whether there are any tracts that meet one or more of the FLPMA section 203 disposal criteria. This is because the BLM may only sell public land using this FLPMA authority if the BLM has first found, through land use planning, that the tract meets one or more of these criteria:

(1) Such tract because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands, and is not suitable for management by another Federal department or agency; or

(2) Such tract was acquired for a specific purpose and the tract is no longer required for that or any other Federal purpose; or

(3) Disposal of such tract will serve important public objectives, including but not limited to, expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land and which outweigh other public objectives and values, including, but not limited to, recreation and scenic values, which would be served by maintaining such tract in Federal ownership.

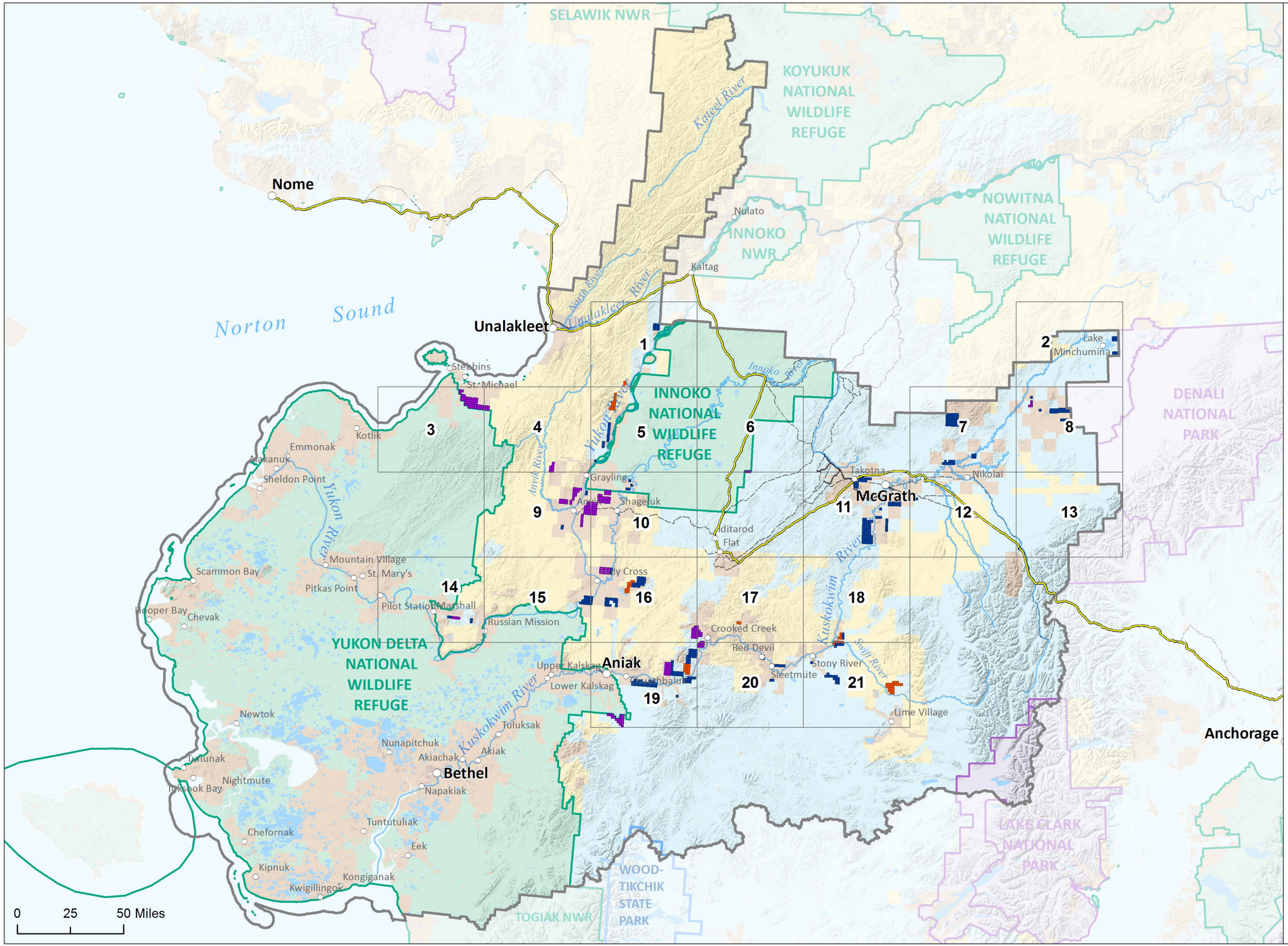
The BLM has identified three categories of public land in the planning area that meet one or more of the above disposal criteria. For purposes of this RMP, these criteria were used to identify tracts available for exchange or disposal.

Category 1 includes unselected land in BLM ownership adjacent to State or Native patented lands that are 1.5 townships (34,560 acres) or smaller that the BLM would consider for exchange or disposal.

Category 2 includes State or Native selected lands that are 1.5 townships (34,560 acres) or smaller that, if these selected lands remain in BLM ownership after the conveyance process, the BLM would consider for exchange or disposal.

Category 3 includes unselected land in BLM ownership that are 1.5 townships (34,560 acres) or smaller that are adjacent to State or Native selected land that, if these selected lands are conveyed, the BLM would consider for exchange or disposal.

The tracts considered for exchange or disposal are listed in the tables on the following pages and shown on the maps also included in this appendix.



Potential Exchange or Disposal Areas Category

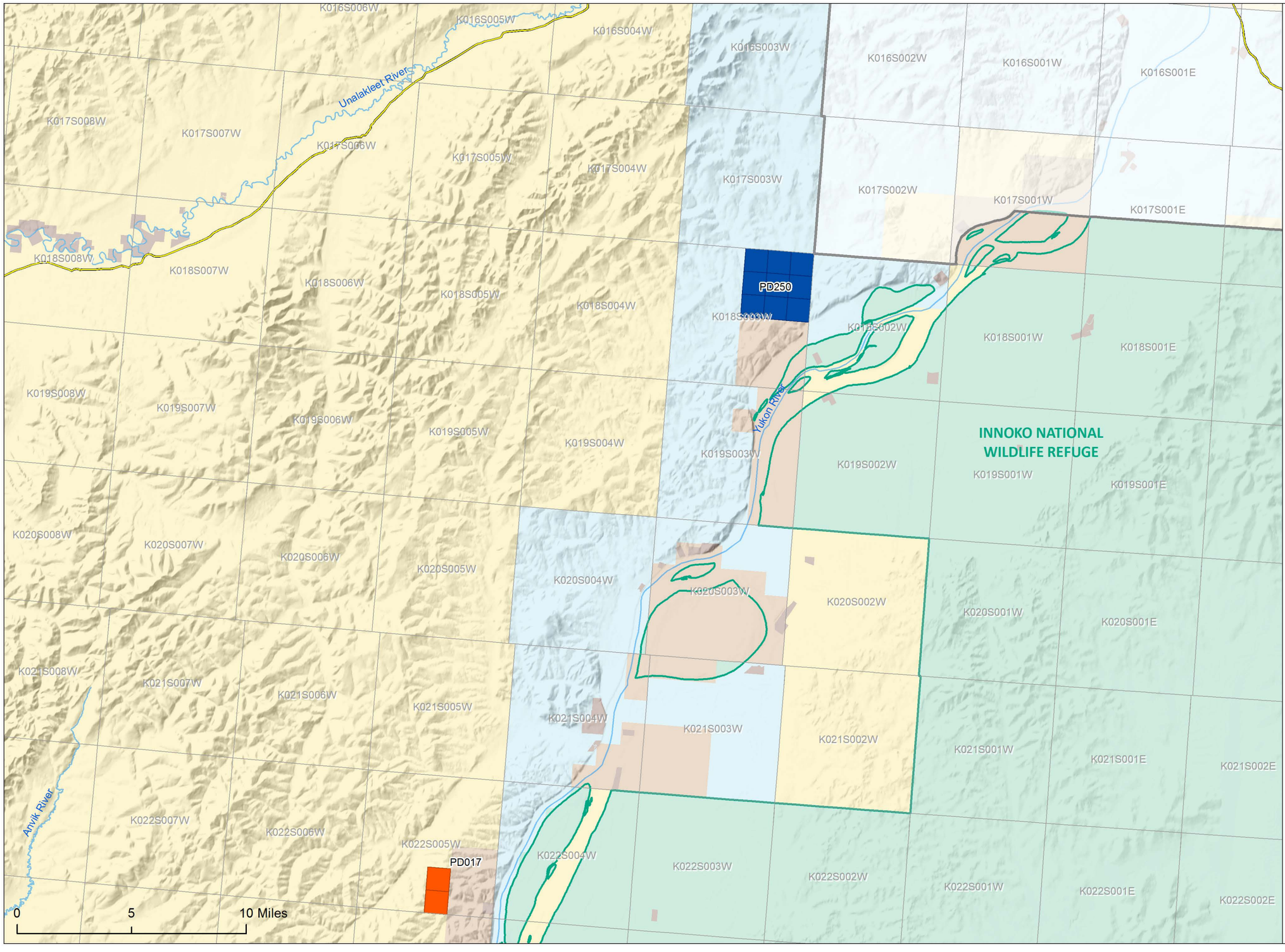
- 1
- 2
- 3
- Map Page Index
- Iditarod National Historic Trail
- Iditarod Connecting Trails

Land Manager

- BLM Managed Lands
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- National Park Service
- Native Allotment
- Native Lands (Patented or Interim Conveyed)
- Private
- State (Patented or Interim Conveyed)
- Water

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

Map 1



Potential Exchange or Disposal Areas Category

- 2
- 3
- Iditarod National Historic Trail
- Iditarod Connecting Trails

Land Manager

- BLM Managed Lands
- U.S. Fish and Wildlife Service
- Native Allotment
- Native Lands (Patented or Interim Conveyed)
- State (Patented or Interim Conveyed)

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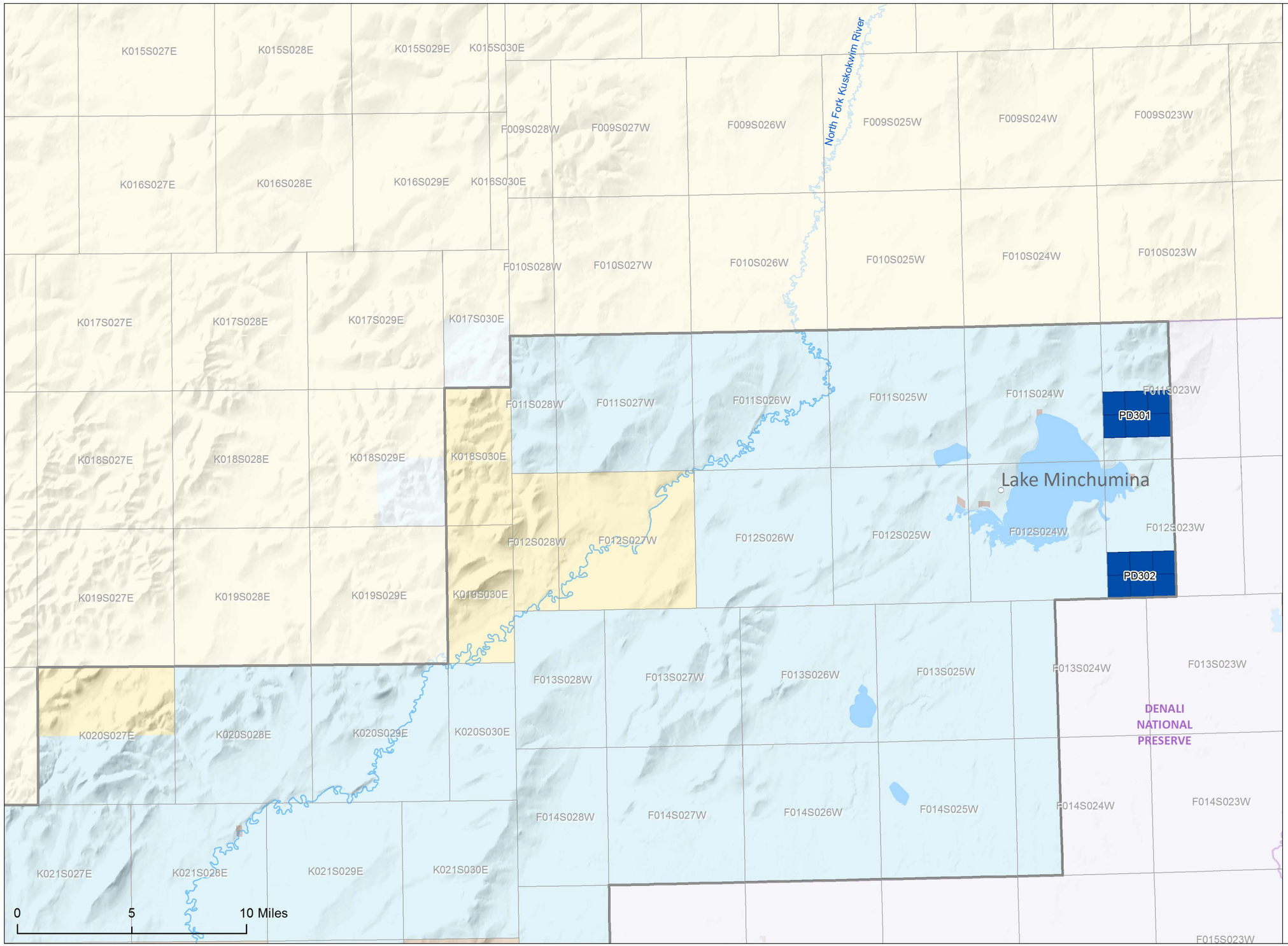
Map 2



Potential Exchange or Disposal Areas Category

2

Land Manager

- BLM Managed Lands
- National Park Service
- Native Allotment
- Native Lands (Patented or Interim Conveyed)
- State (Patented or Interim Conveyed)
- Water

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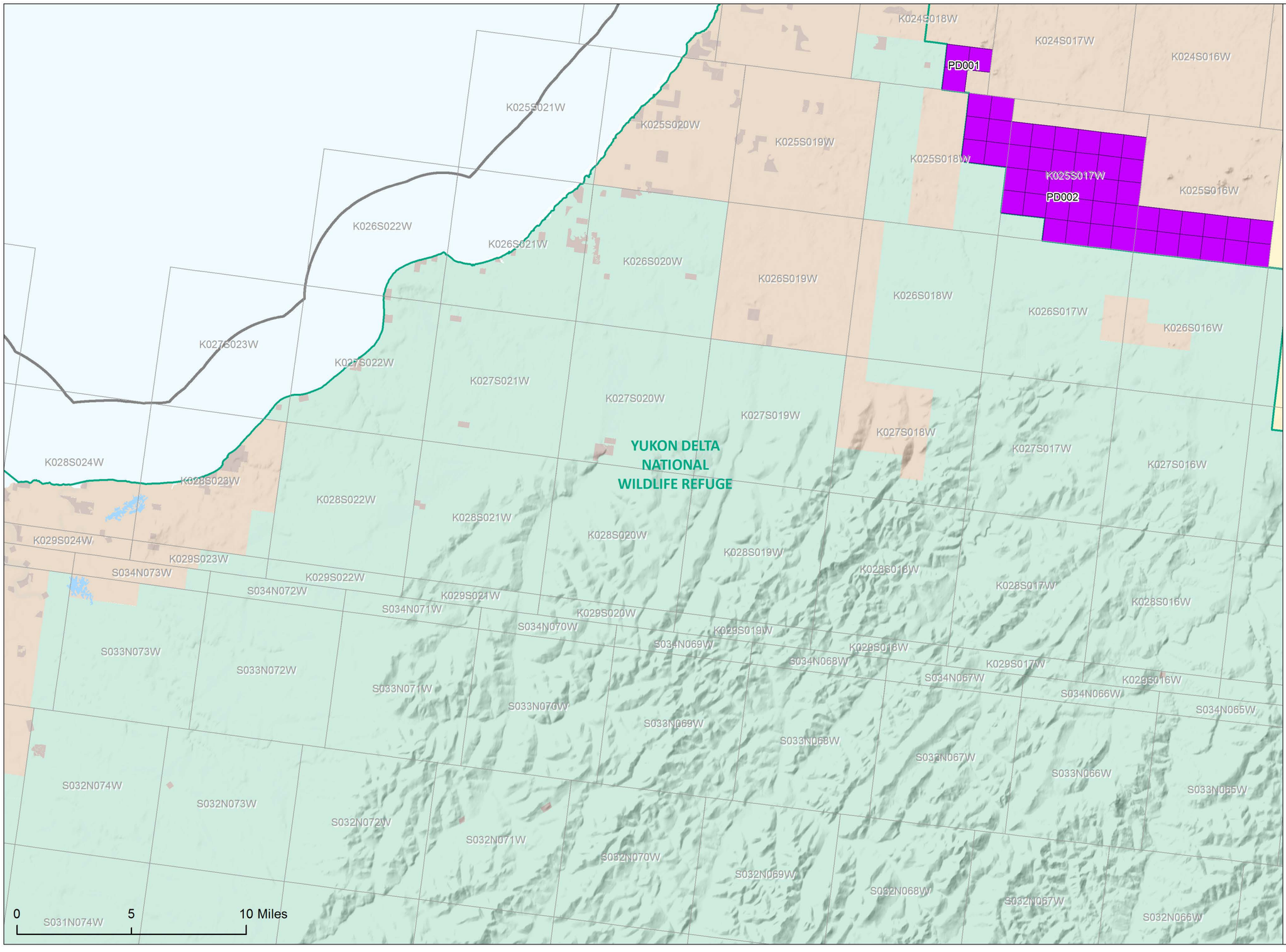
Map 3



Potential Exchange or Disposal Areas Category

1

Land Manager

- BLM Managed Lands
- U.S. Fish and Wildlife Service
- Native Allotment
- Native Lands (Patented or Interim Conveyed)
- Water

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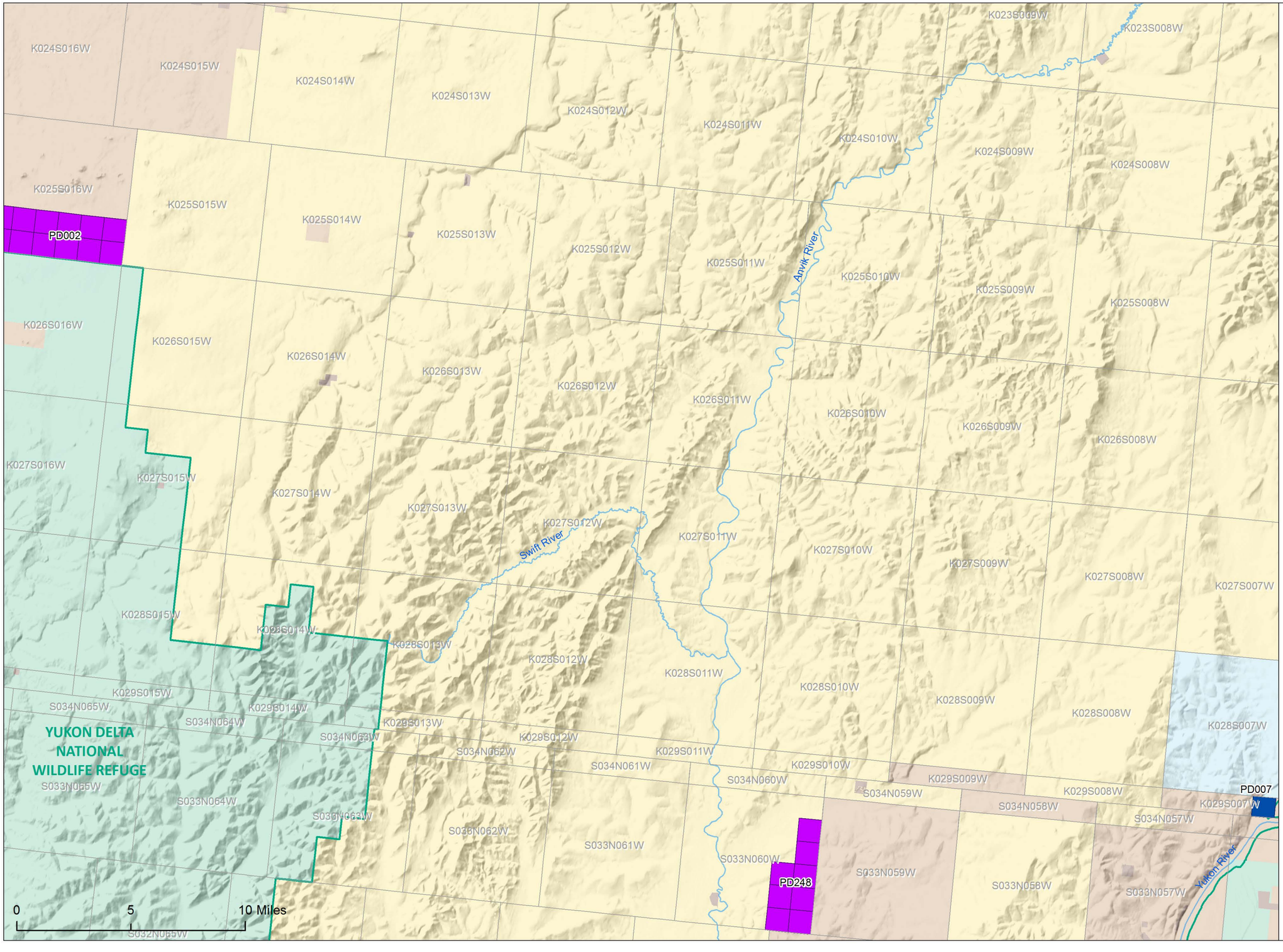
Map 4



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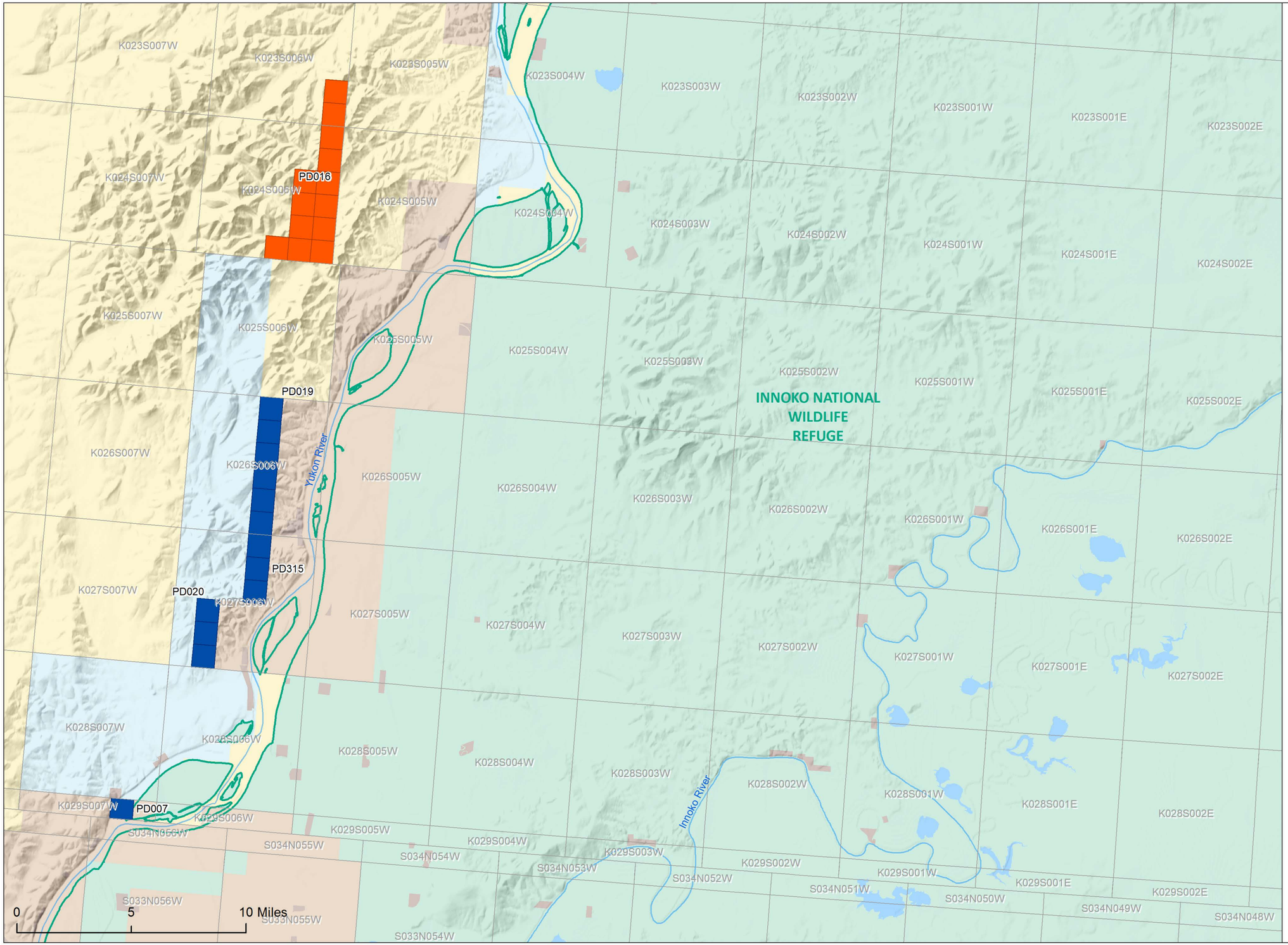
Map 5



Potential Exchange or Disposal Areas Category

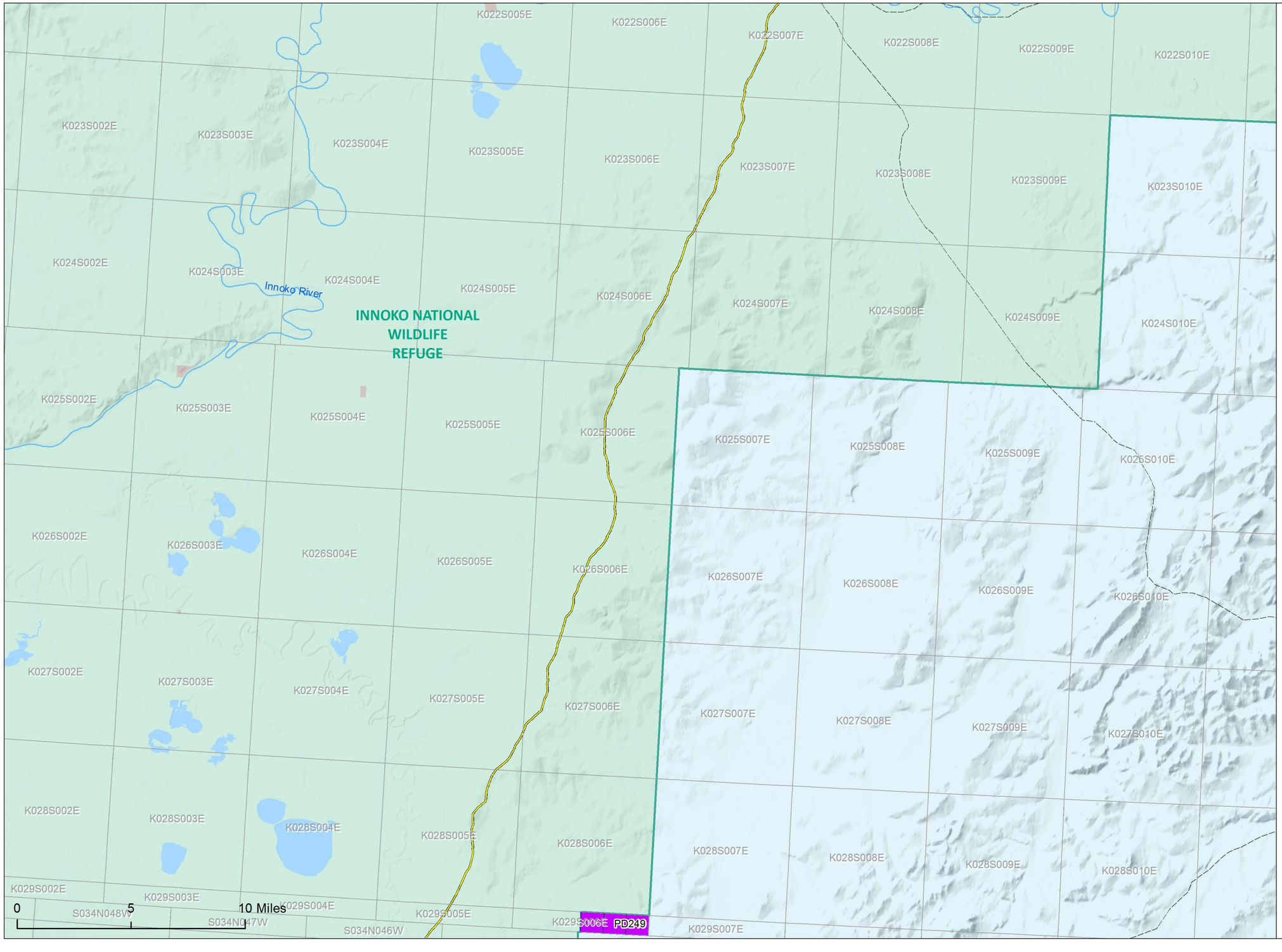
- 2
- 3

Land Manager

- BLM Managed Lands
- U.S. Fish and Wildlife Service
- Native Allotment
- Native Lands (Patented or Interim Conveyed)
- State (Patented or Interim Conveyed)
- Water

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

Map 6



Potential Exchange or Disposal Areas Category

- 1
- Iditarod National Historic Trail
- Iditarod Connecting Trails

Land Manager

- BLM Managed Lands
- U.S. Fish and Wildlife Service
- Native Allotment
- State (Patented or Interim Conveyed)
- Water

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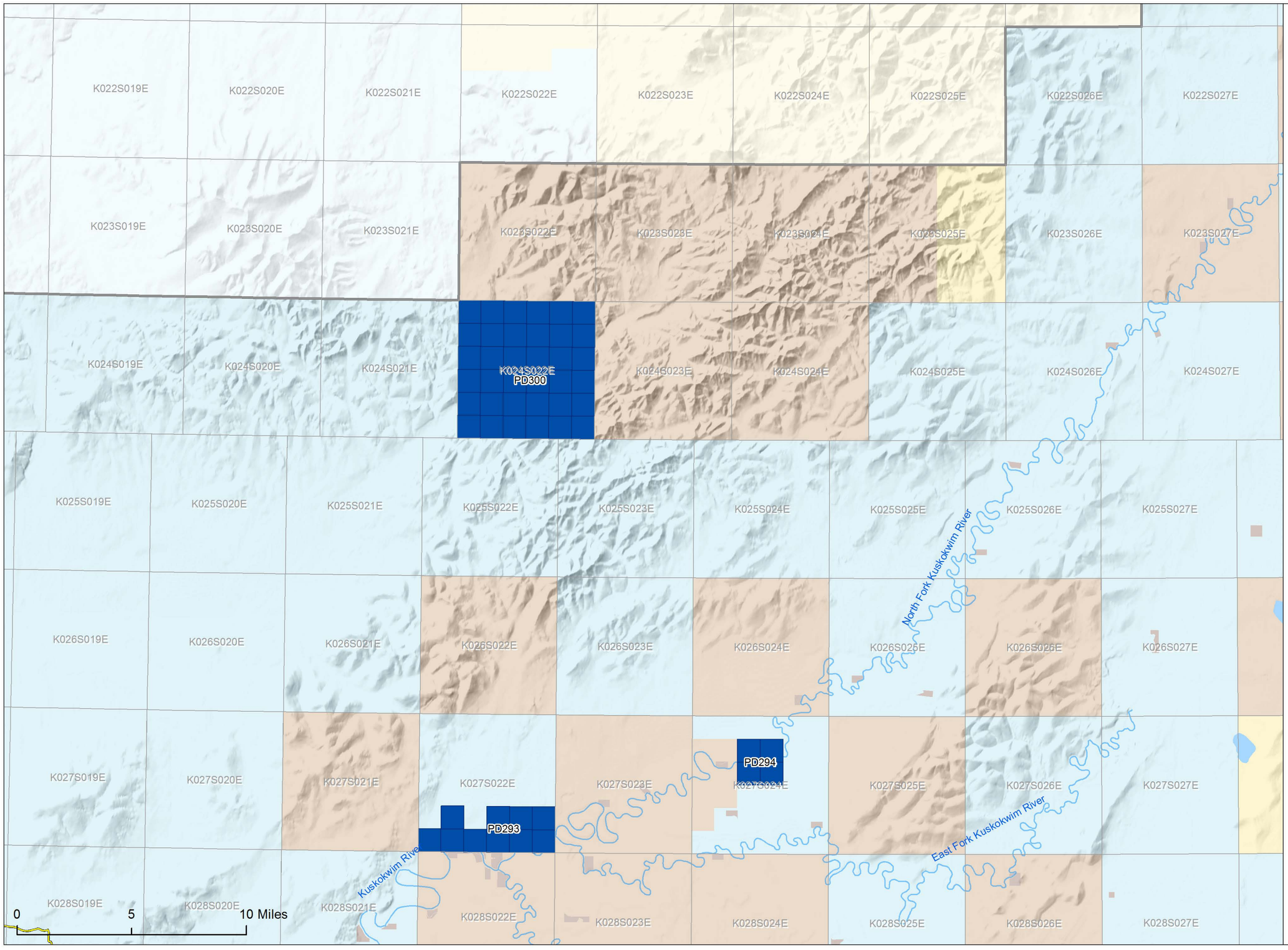
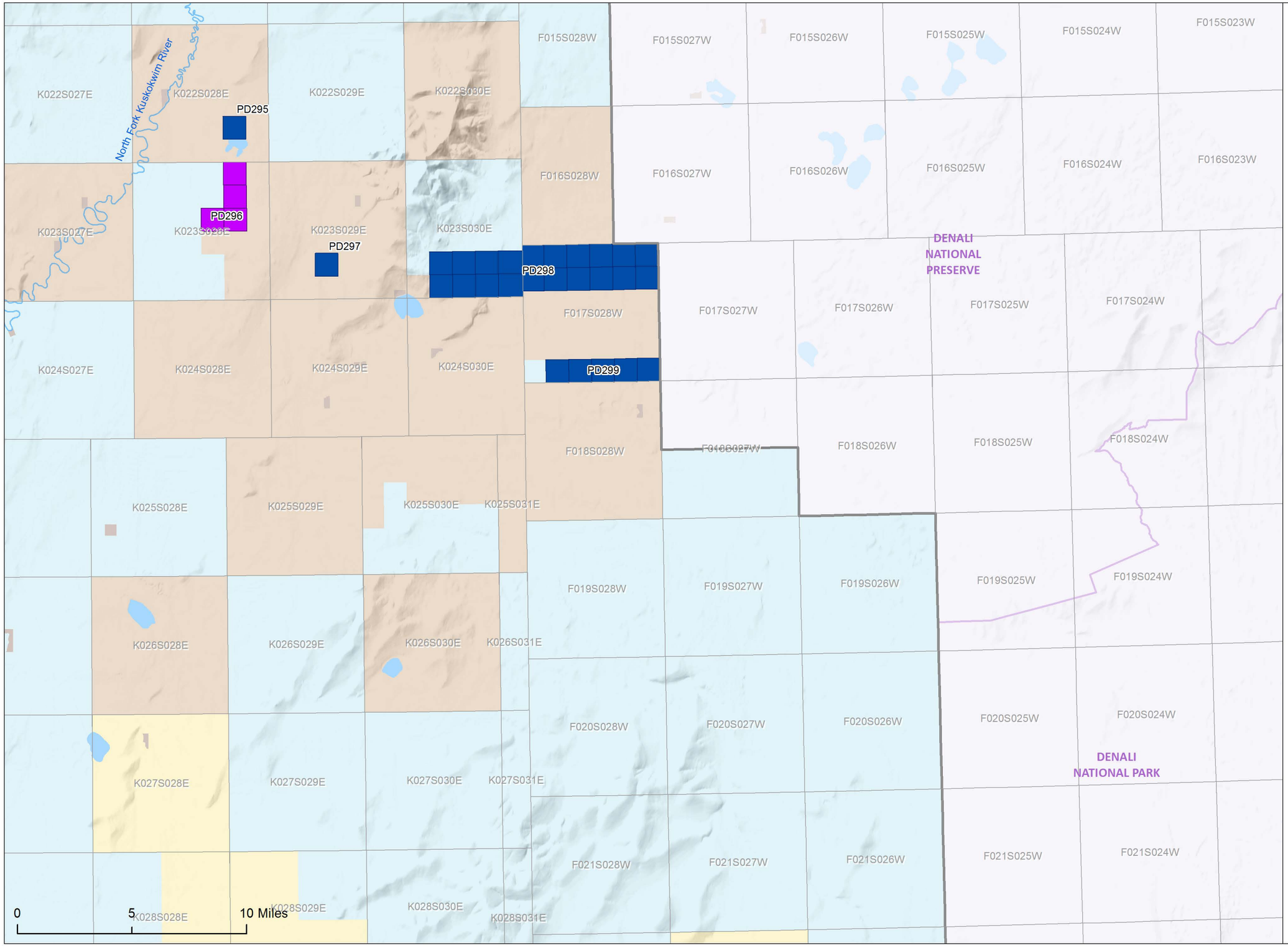
Map 7



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

Map 8



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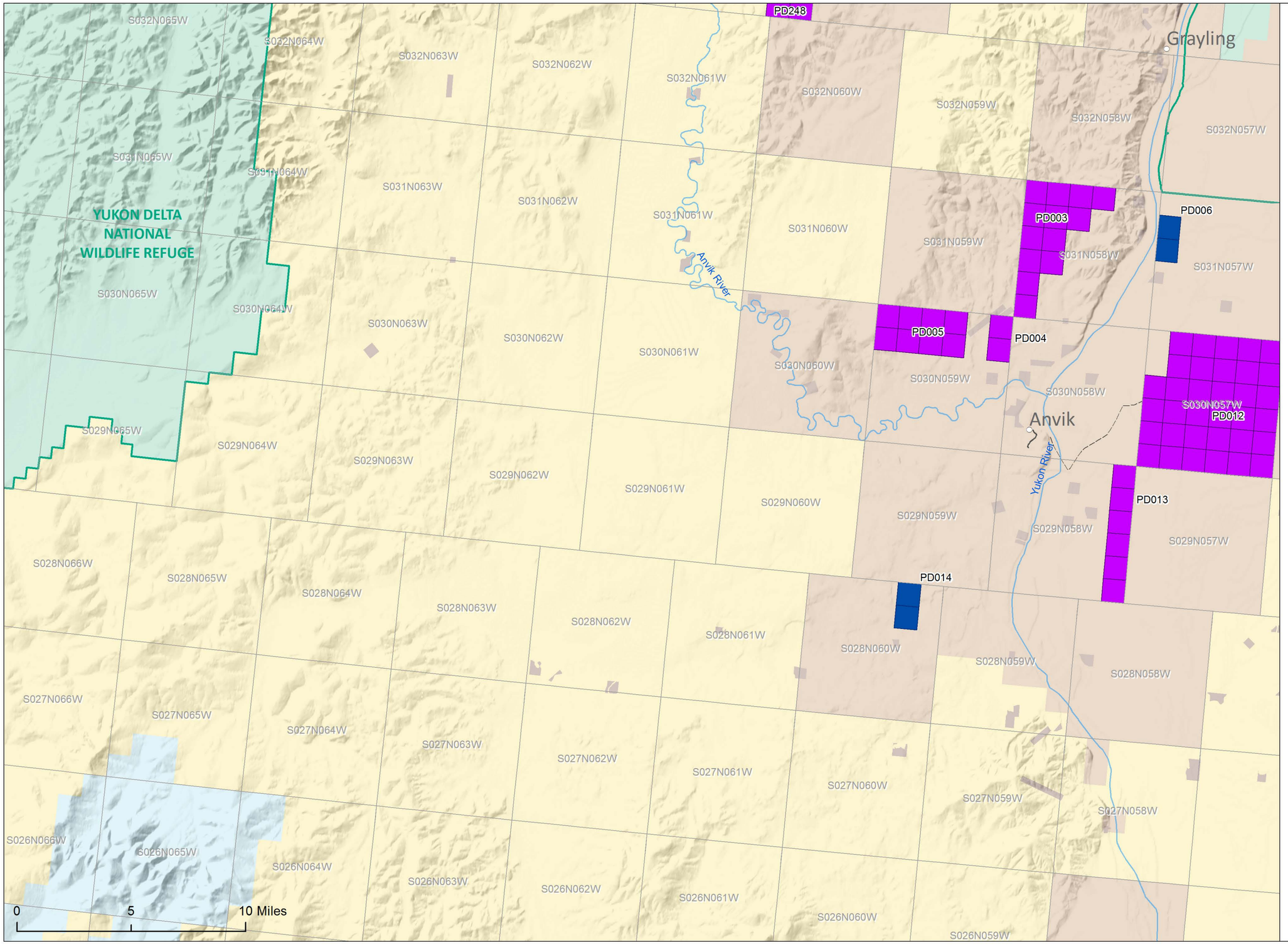
Map 9



Potential Exchange or Disposal Areas Category

- 1
- 2
- Iditarod Connecting Trails

Land Manager

- BLM Managed Lands
- U.S. Fish and Wildlife Service
- Native Allotment
- Native Lands (Patented or Interim Conveyed)
- State (Patented or Interim Conveyed)

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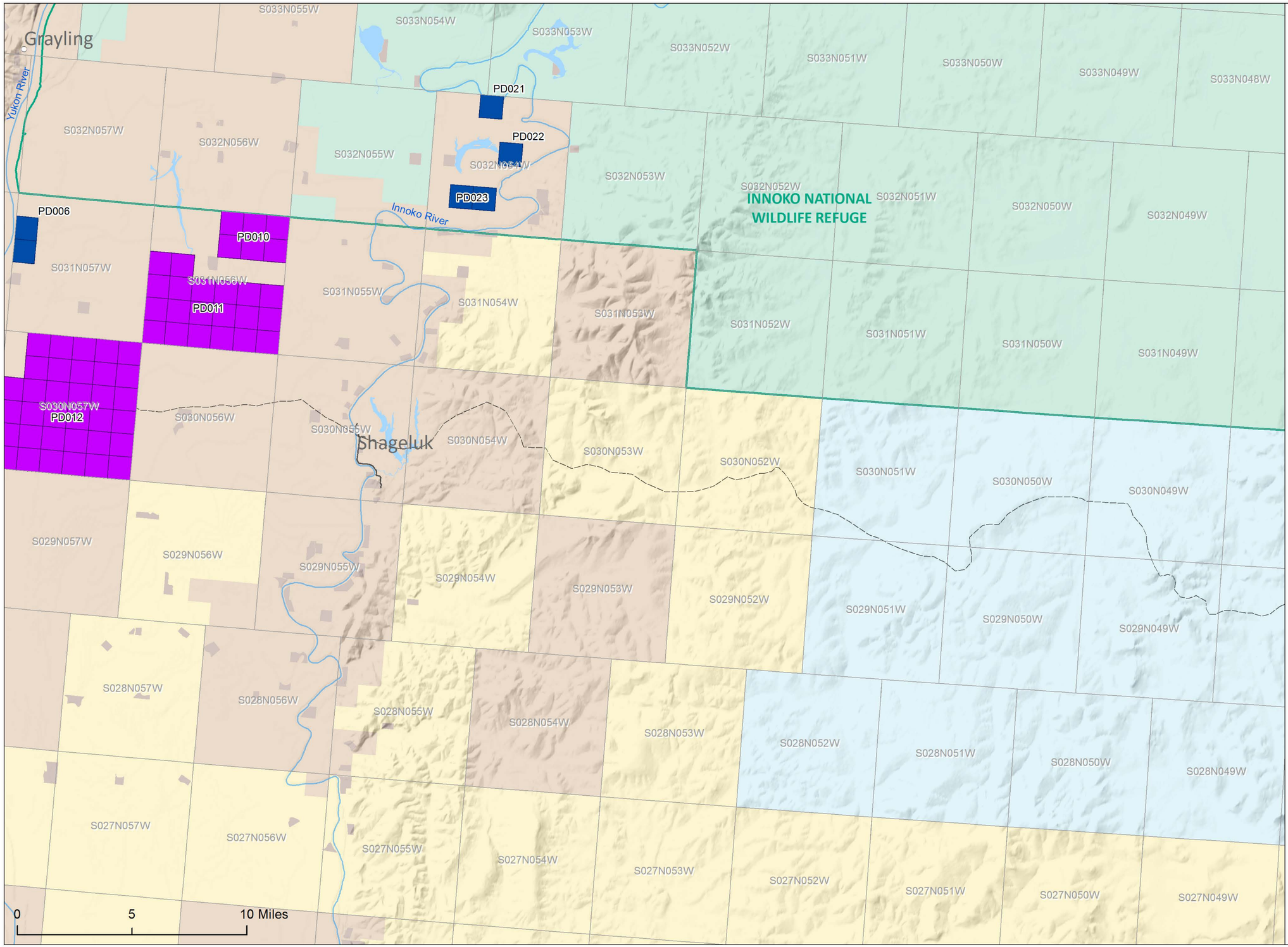
Map 10



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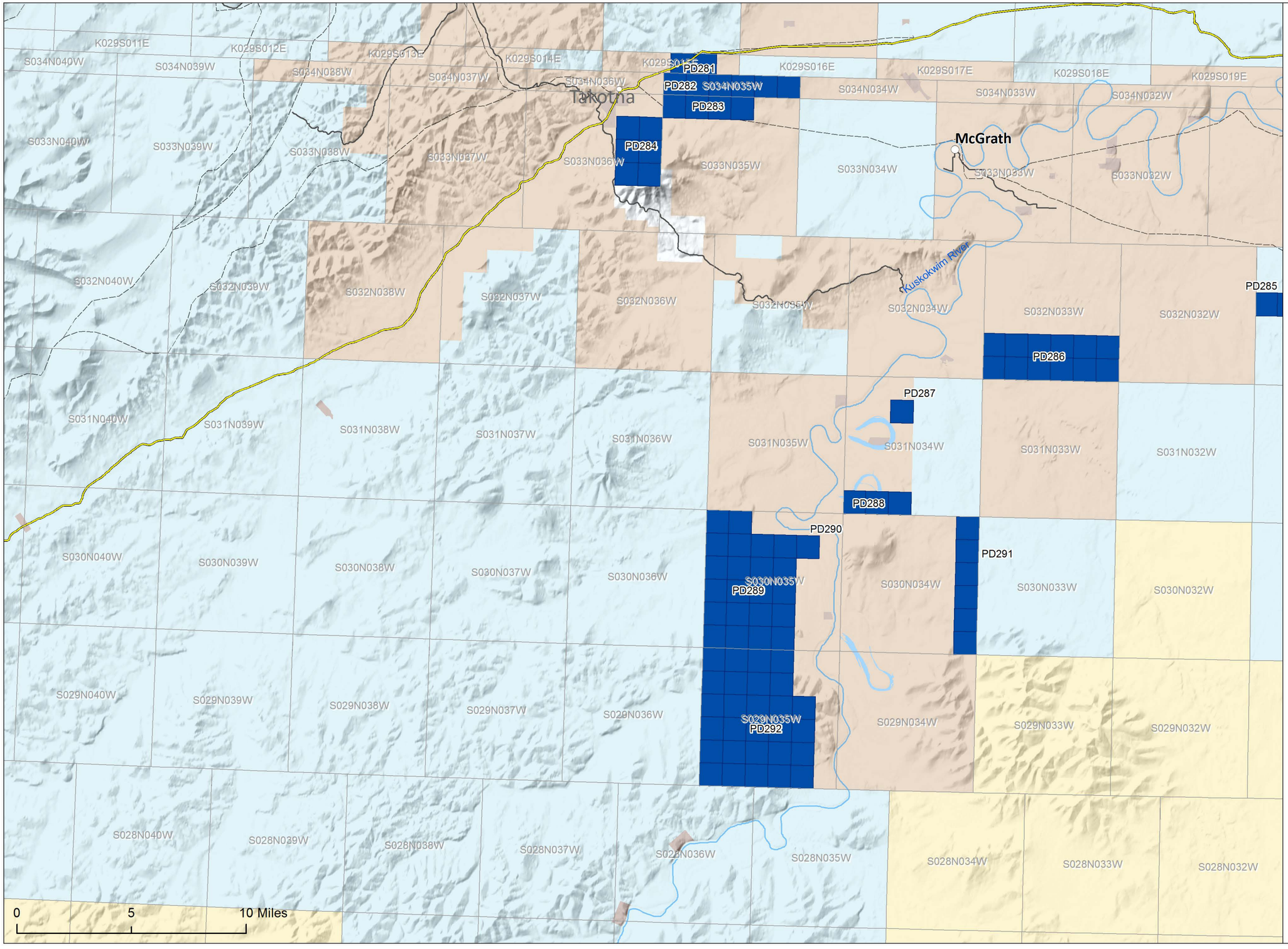
Map 11



Potential Exchange or Disposal Areas Category

- 2
- Iditarod National Historic Trail
- Iditarod Connecting Trails

Land Manager

- BLM Managed Lands
- Native Allotment
- Native Lands (Patented or Interim Conveyed)
- State (Patented or Interim Conveyed)
- Water

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Map 12

Potential Exchange or Disposal Areas Category

- 2
- Iditarod National Historic Trail
- Iditarod Connecting Trails

Land Manager

- BLM Managed Lands
- Native Allotment
- Native Lands (Patented or Interim Conveyed)
- State (Patented or Interim Conveyed)
- Water

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Map 13

K029S028E
K029S029E
K029S030E
K029S031E
F022S028W
F022S027W
F022S026W
F022S025W
F022S024W
S034N023W
S034N022W
S034N021W
S034N020W
DENALI NATIONAL PARK
S033N023W
S033N022W
S033N021W
S033N020W
S033N019W
S033N018W
S033N017W
S033N016W
S033N015W
S032N023W
S032N022W
S032N021W
S032N020W
S032N019W
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S030N021W
S030N020W
S030N019W
S030N018W
S030N017W
S030N016W
S030N015W
S029N023W
S029N022W
S029N021W
S029N020W
S029N019W
S029N018W
S029N017W
DENALI NATIONAL PRESERVE
S029N016W
S029N015W
South Fork Kuskokwim River
PD303
S028N023W
S028N022W
S028N021W
S028N020W
S028N019W
S028N018W
S028N017W
S028N016W
S028N015W
0
5
10 Miles

Potential Exchange or Disposal Areas Category

- 2
- Iditarod National Historic Trail
- Iditarod Connecting Trails

Land Manager

- BLM Managed Lands
- National Park Service
- Native Allotment
- Native Lands (Patented or Interim Conveyed)
- State (Patented or Interim Conveyed)
- Water

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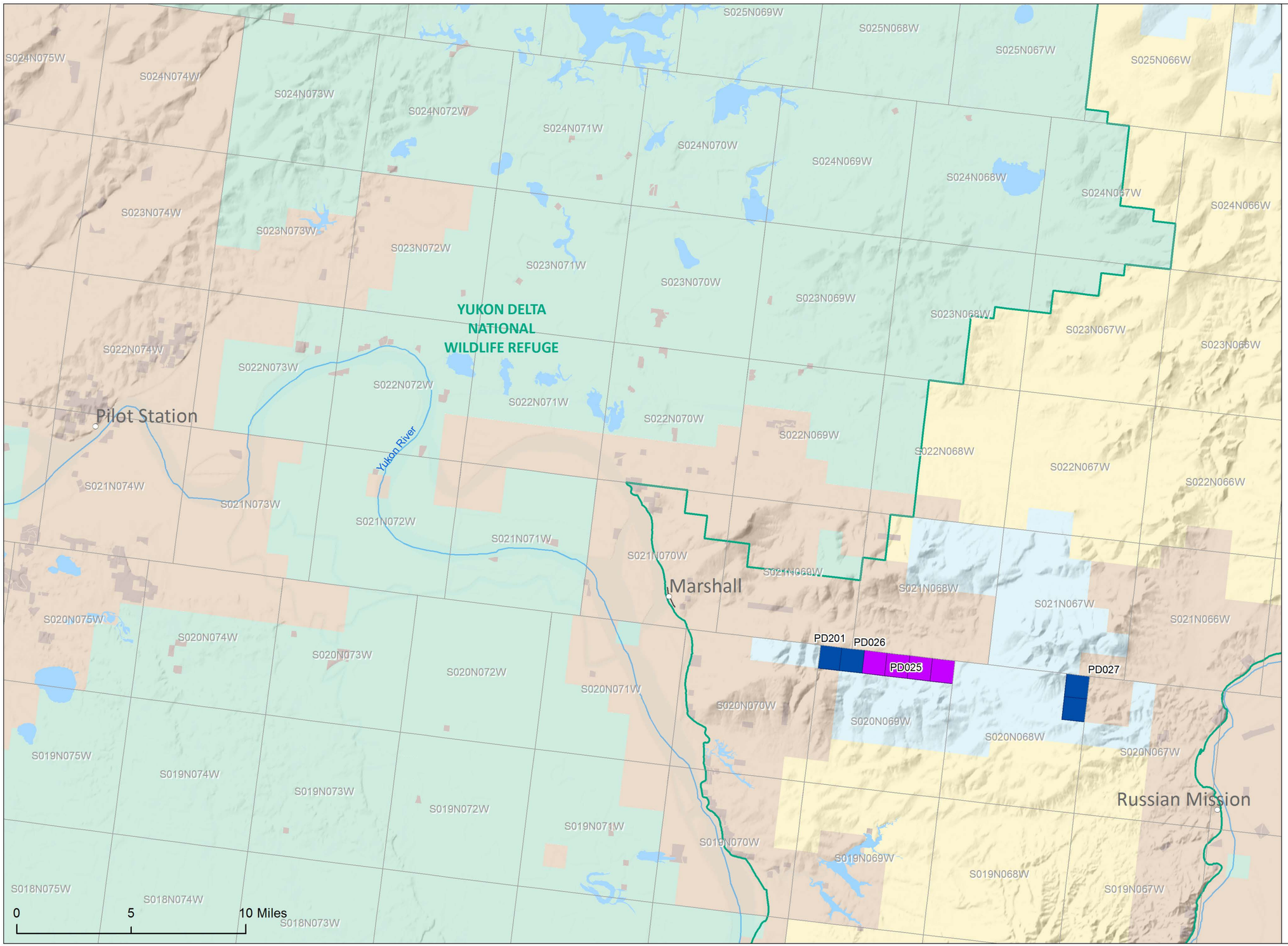
Map 14



Potential Exchange or Disposal Areas Category

- 1
- 2

Land Manager

- BLM Managed Lands
- U.S. Fish and Wildlife Service
- Native Allotment
- Native Lands (Patented or Interim Conveyed)
- State (Patented or Interim Conveyed)
- Water

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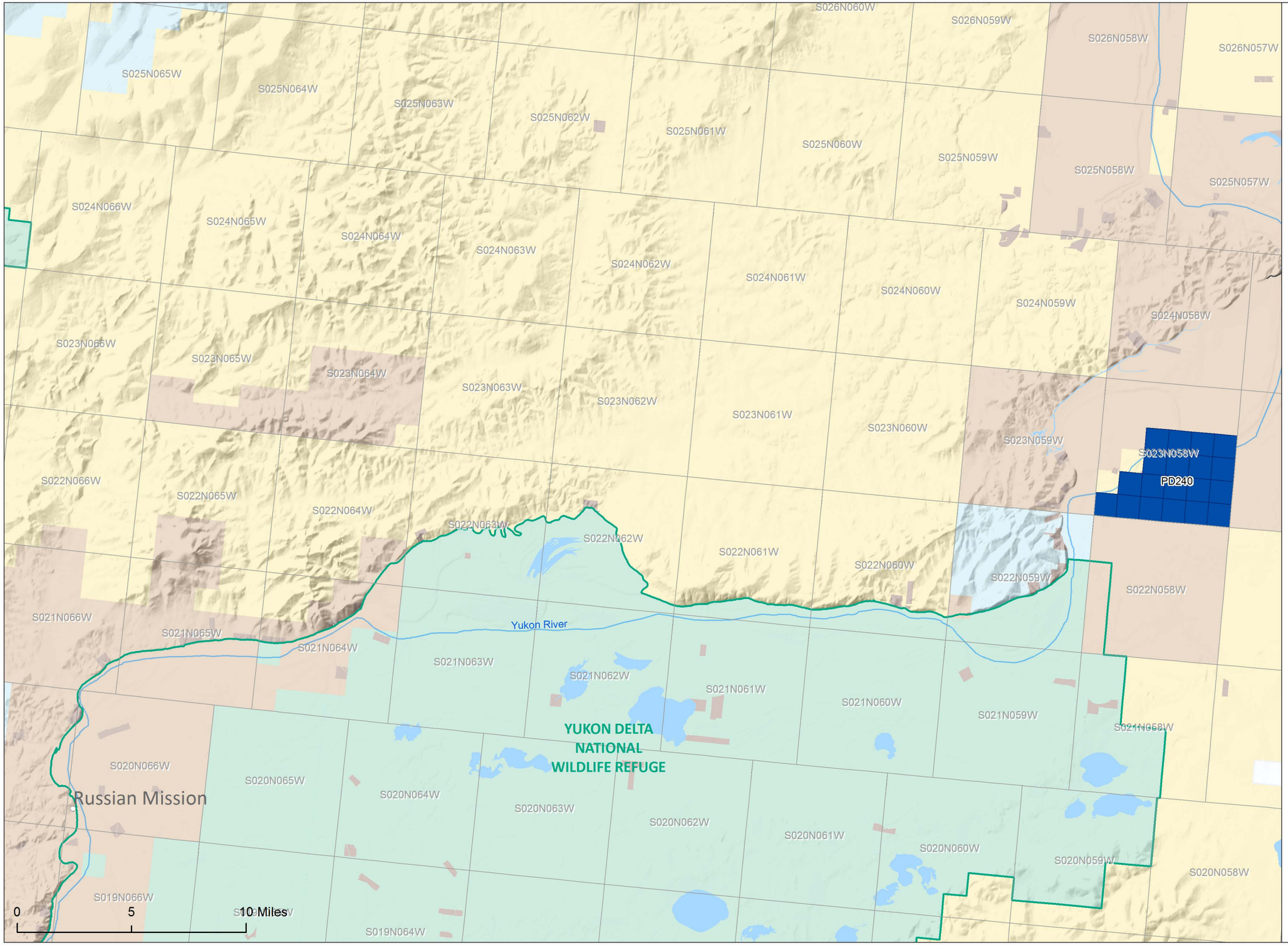
Map 15



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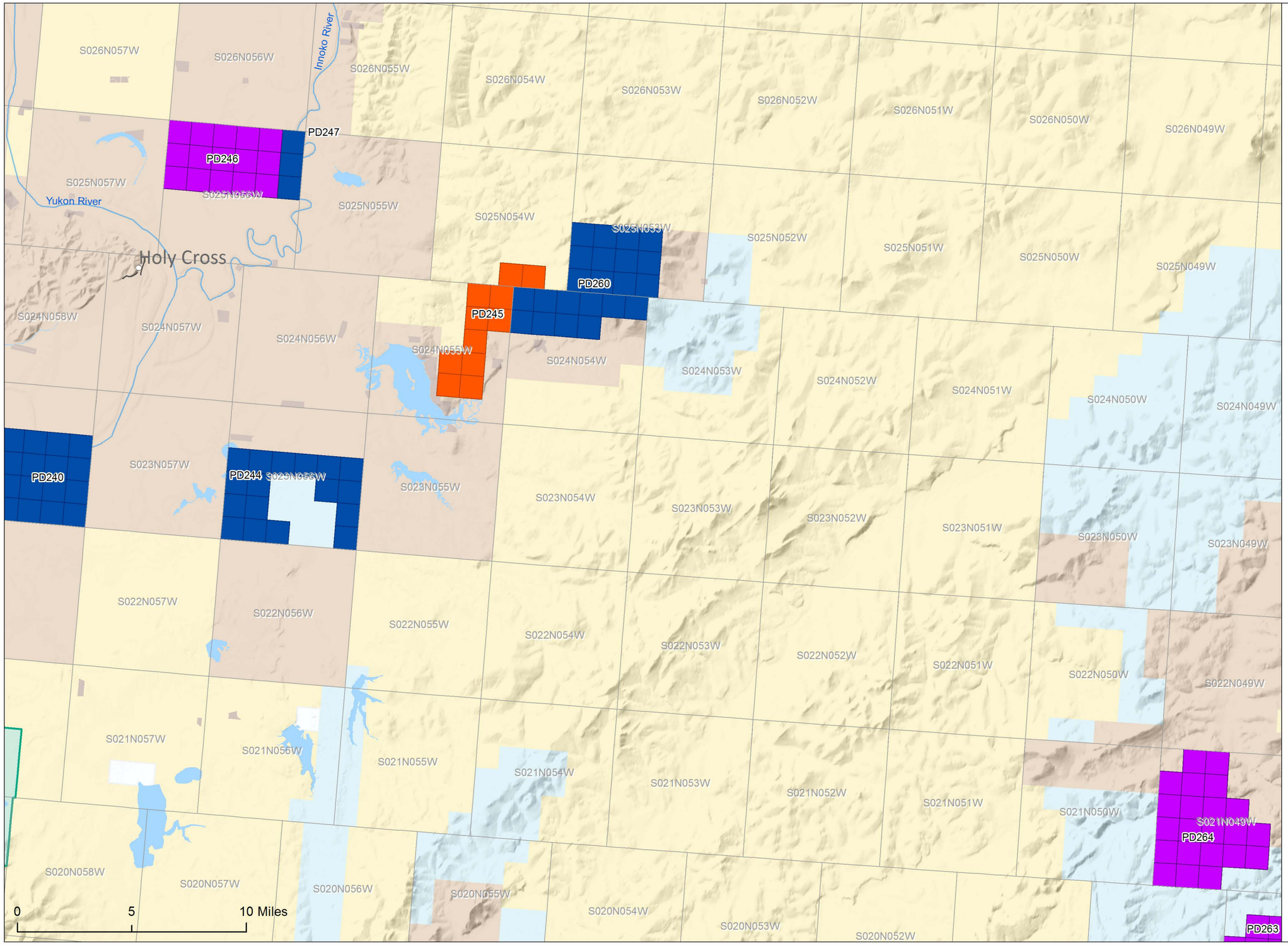
Map 16



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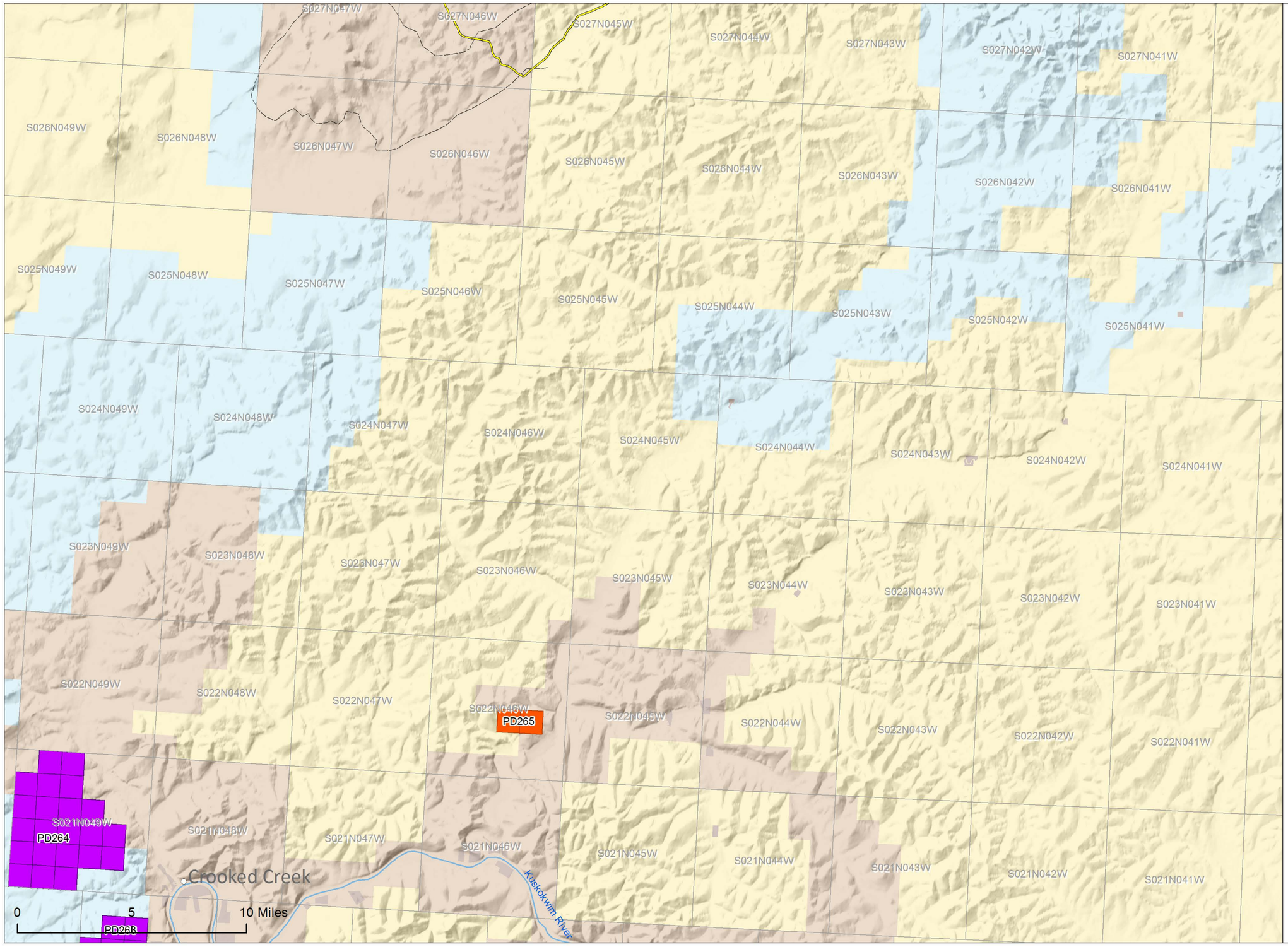
Map 17



Potential Exchange or Disposal Areas Category

- 1
- 3
- Iditarod National Historic Trail
- Iditarod Connecting Trails

Land Manager

- BLM Managed Lands
- Native Allotment
- Native Lands (Patented or Interim Conveyed)
- State (Patented or Interim Conveyed)

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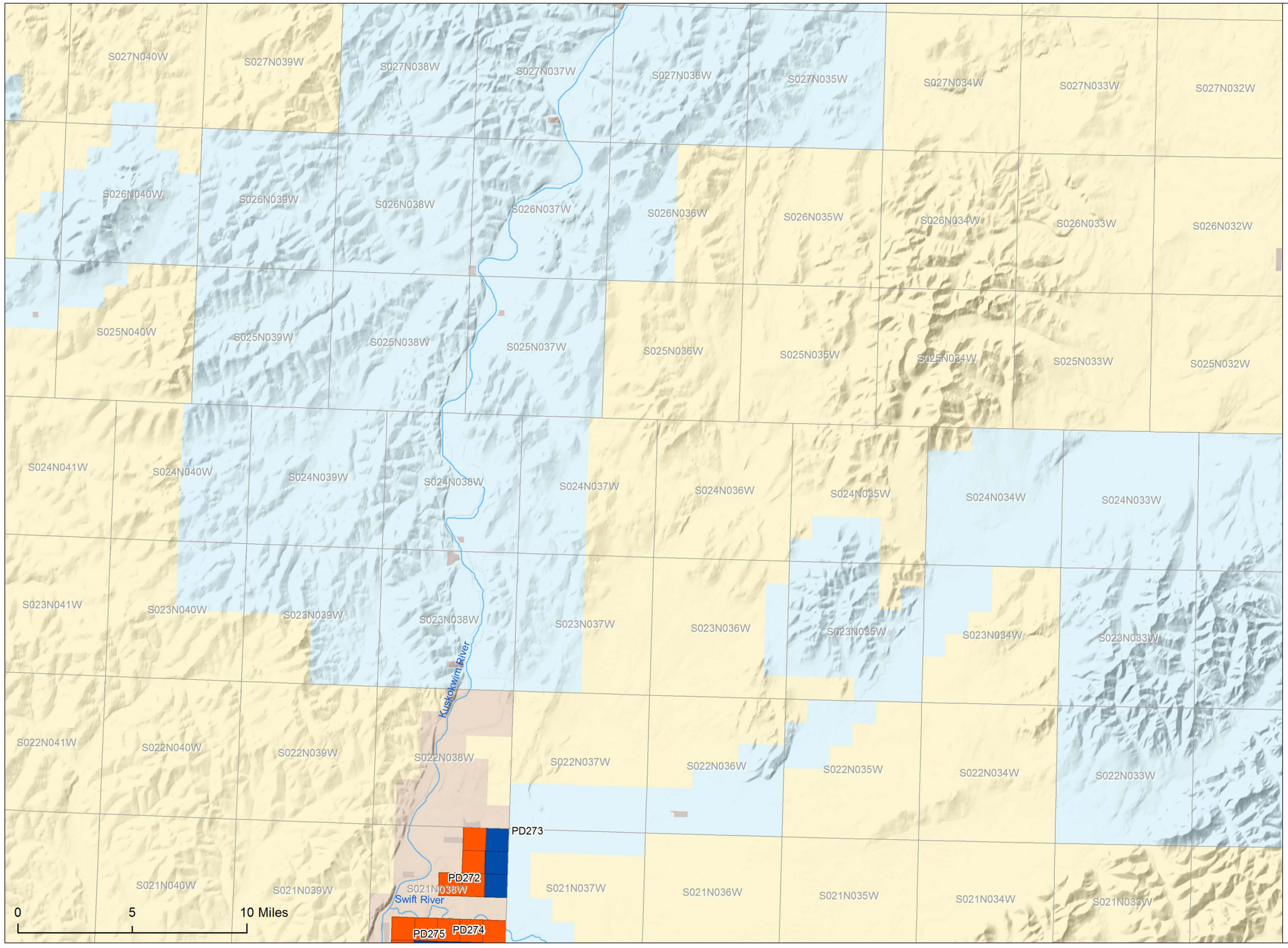
Map 18



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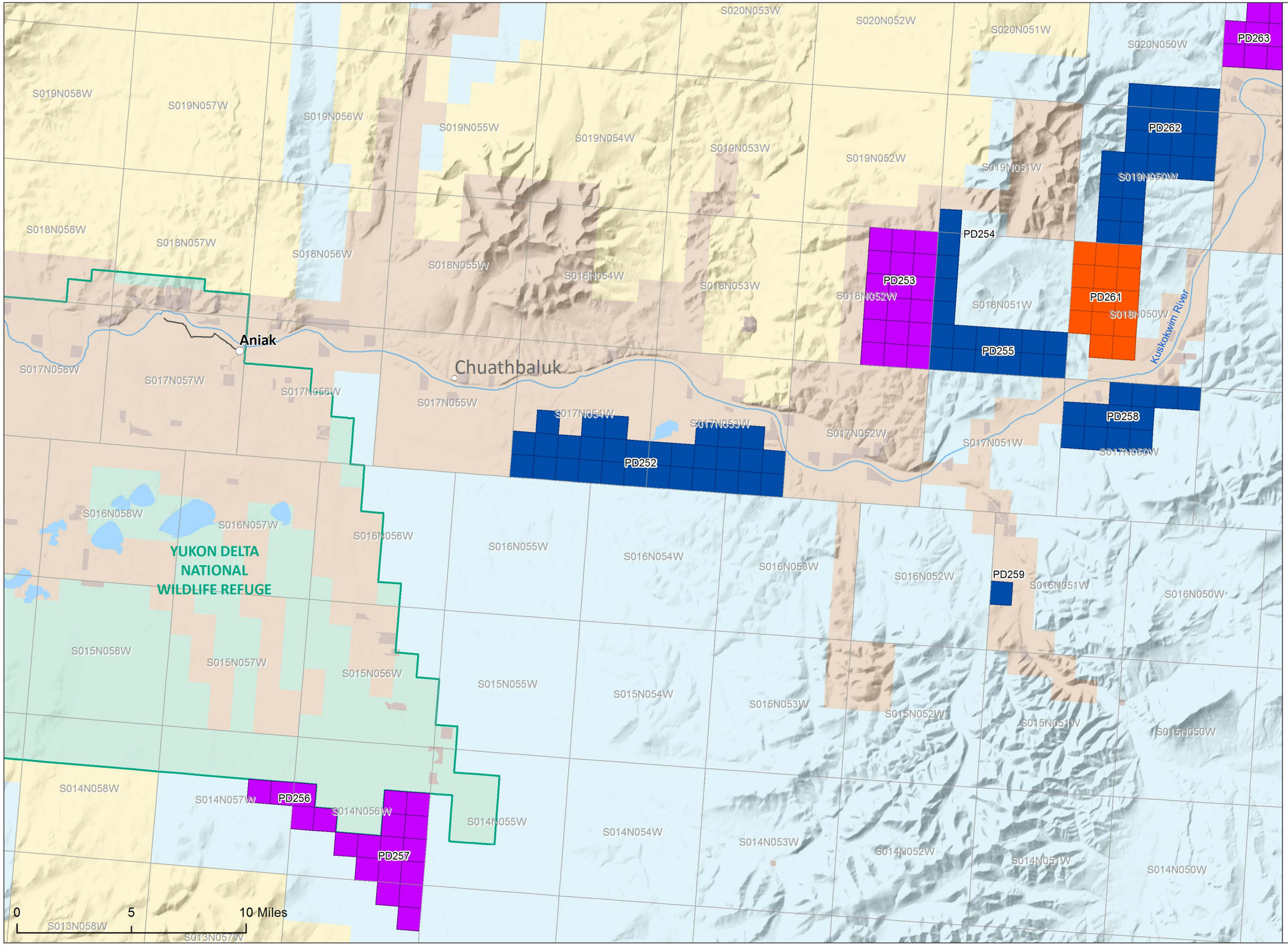
Map 19



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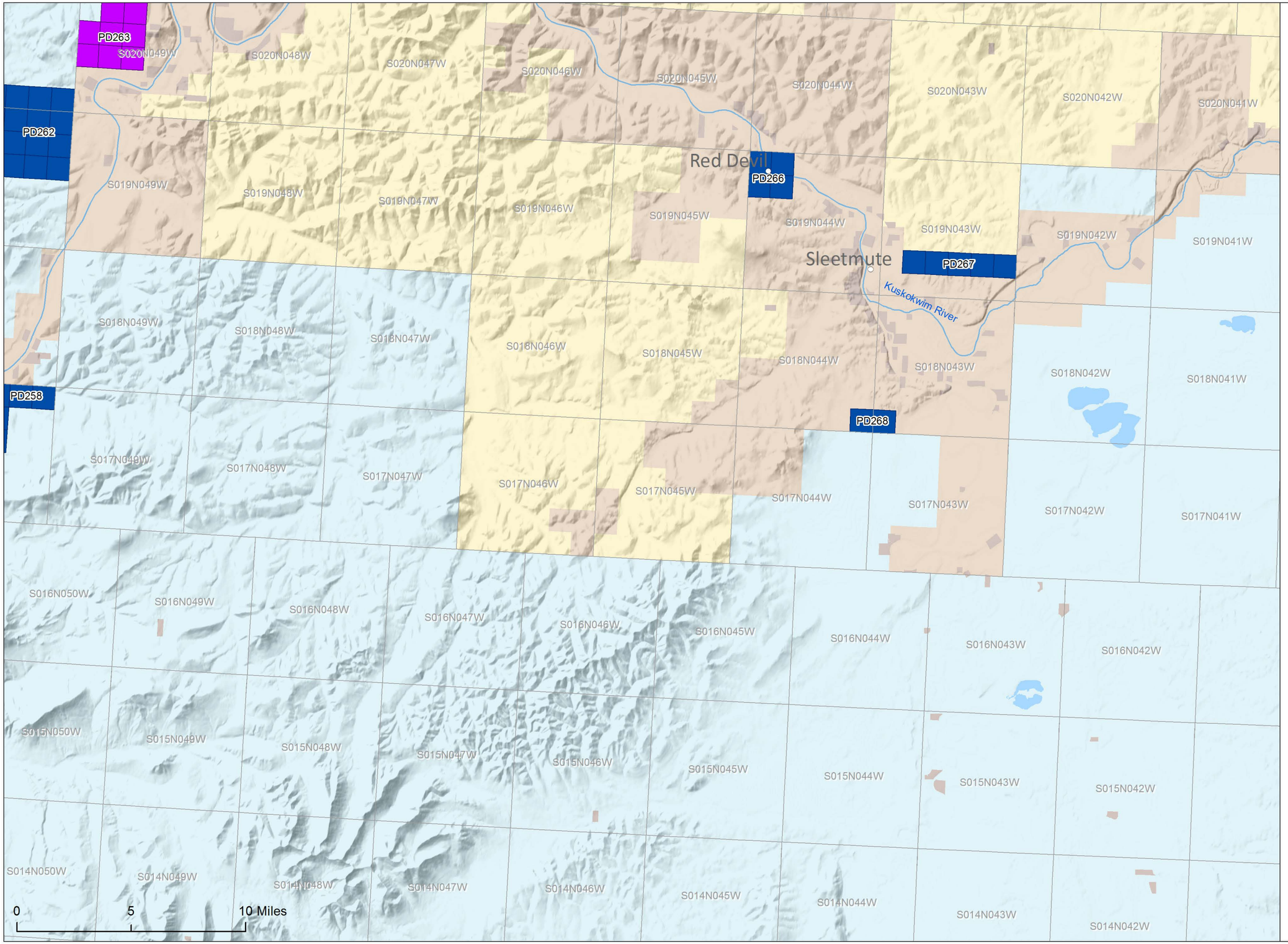
Map 20



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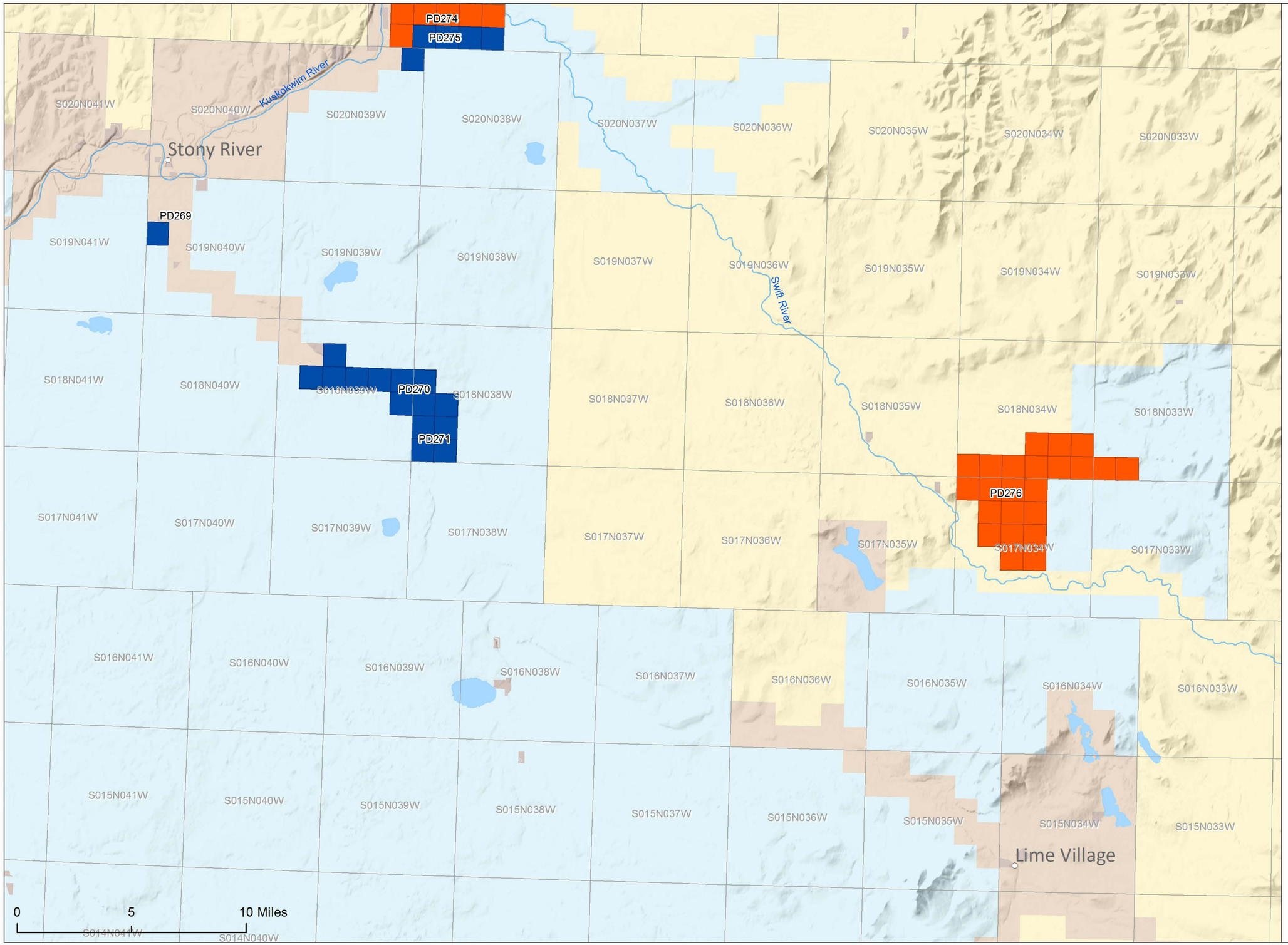
Map 21



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Map 22

Written Description of Maps

Map Number	Map Description
Appendix F, Map 1	Map 1 provides an overview of the Appendix F maps, which depict the same information that is summarized in the table on the preceding pages. Map 1 shows the planning area and the location of each of the more detailed Map pages in the appendix (numbered 1 to 21). The Map pages start in the north end of the planning area, and go left to right sequentially, in five rows that cover all areas with lands available for exchange or disposal, skipping areas where there are no lands available for exchange or disposal. The Map provides an overview of the potential exchange and/or disposal areas in the planning area, represented as different colors based on their exchange/disposal category (1, 2, or 3). The Map also shows the Iditarod National Historic Trail and generalized land status. For BLM-managed land, land status includes categories for Native selected and State selected lands.
Appendix F, Map 2	Map 2 is Page 1 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes portions of the Unalakleet and Yukon rivers, and the northwest corner of the Innoko NWR. The Map shows two parcels proposed for exchange or disposal. PD250 is a Category 2 potential exchange/disposal area consisting of nine sections in K018S003W, located just northwest of the Yukon River and west of the Innoko NWR at the north end of the planning area. PD017 is a Category 3 potential exchange/disposal area consisting of two sections in K022S005W, located west of the Yukon River and Innoko NWR.
Appendix F, Map 3	Map 3 is Page 2 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes the northeast corner of the planning area. The Map shows two parcels proposed for exchange or disposal. PD301 is a Category 2 potential exchange/disposal area consisting of six sections in F011S023W, located just northeast of Lake Minchumina on the eastern edge of the planning area. PD302 is a Category 2 potential exchange/disposal area consisting of six sections in F012S023W, located southeast of Lake Minchumina on the eastern edge of the planning area.
Appendix F, Map 4	Map 4 is Page 3 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes the western end of the planning area south of St. Michael. The Map shows two parcels proposed for exchange or disposal. PD001 and PD002 are Category 1 potential exchange/disposal areas located adjacent to the Yukon Delta NWR boundary. PD001 includes three sections in K024S018W, and PD002 includes 46 sections: 12 in K025S016W, 28 in K025S017W, and 6 in K025S018W.
Appendix F, Map 5	Map 5 is Page 4 of the Potential Exchange or Disposal Areas Map series. Its geographic area generally lies between the Yukon Delta and Innoko NWRs, and includes stretches of the Anvik and Swift rivers. The Map shows two parcels proposed for exchange or disposal. PD248 is a Category 1 potential exchange/disposal area consisting of eight sections in S033N060W, located east of the Anvik River. PD007 is a Category 2 potential exchange/disposal area consisting of one section in K029S007W, located west of and adjacent to the Yukon River and Innoko NWR.
Appendix F, Map 6	Map 6 is Page 5 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes a large portion of the Innoko NWR and the area just to the west. The Map shows five parcels proposed for exchange or disposal, all of which are just west of the Yukon River and Innoko NWR. PD016 is a Category 3 potential exchange/disposal area consisting of 11 sections in K024S006W and two sections in K023S006W, located west of the Yukon River. PD0019 is a Category 2 potential exchange/disposal area consisting of six sections in K026S006W, located west of the Yukon River. PD315 is a Category 2 potential exchange/disposal area consisting of three sections in K027S006W, adjacent to and south of PD019. PD020 is a Category 2 potential exchange/disposal area consisting of three sections in K027S006W, just southeast of PD019. PD007 is a Category 2 potential exchange/disposal area consisting of one section in K029S007W, located south and east of the other parcels on this map.
Appendix F, Map 7	Map 7 is Page 6 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes a large portion of the Innoko NWR and lands to the east. The Map shows one parcel proposed for exchange or disposal. PD249 is a Category 1 potential exchange/disposal area consisting of three sections in K029S006E, adjacent to the Innoko NWR.
Appendix F, Map 8	Map 8 is Page 7 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes the northern end of the planning area, north of Nikolai. The Map shows three parcels proposed for exchange or disposal. PD300 is a Category 2 potential exchange/disposal area consisting of all of K024S022E (36 sections), located at the northern boundary of the planning area. PD293 is a Category 2 potential exchange/disposal area consisting of ten sections in K027S022E, located at the confluence of the Kuskokwim and East Fork Kuskokwim rivers. PD294 is a Category 2 potential exchange/disposal area consisting of four sections in K027S024E, located on the Kuskokwim River, northeast of PD293.

Map Number	Map Description
Appendix F, Map 9	Map 9 is Page 8 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes the east end of the planning area and a portion of Denali National Park and Preserve. The Map shows five parcels proposed for exchange or disposal. PD295 is a Category 3 potential exchange/disposal area consisting of one section in K022S028E, located east of the North Fork Kuskokwim River. PD296 is a Category 1 potential exchange/disposal area consisting of four sections in K023S028E, located south of PD295. PD297 is a Category 2 potential exchange/disposal area consisting of one section in K023S029E, located southeast of PD295. PD298 is a Category 2 potential exchange/disposal area consisting of eight sections in K023S030E and twelve sections in F017S028W, located on the eastern boundary of the planning area. PD299 is a Category 2 potential exchange/disposal area consisting of five sections in F017S028W, located on the eastern boundary of the planning area and south of PD298.
Appendix F, Map 10	Map 10 is Page 9 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes the Anvik area generally between the Yukon Delta and Innoko NWRs. The Map shows eight parcels proposed for exchange or disposal. The Map shows only a small portion of PD248, which is displayed in full on Page 4. PD003 is a Category 1 potential exchange/disposal area consisting of 13 sections in S031N058W, located west of the Yukon River and southwest of the Innoko NWR. PD006 is a Category 2 potential exchange/disposal area consisting of two sections in S031N057W, located just east of the Yukon River and south of the Innoko NWR. PD005 is a Category 1 potential exchange/disposal area consisting of eight sections in S030N059W, located north of the Anvik River. PD004 is a Category 1 potential exchange/disposal area consisting of two sections in S030N059W, located east of PD005 and south of PD003. PD012 is a Category 1 potential exchange/disposal area consisting of 34 sections in S030N057W, located east of Anvik. PD013 is a Category 1 potential exchange/disposal area consisting of six sections in S029N058W, located just south and east of PD012. PD014 is a Category 2 potential exchange/disposal area consisting of two sections in S028N050W, located west of the Yukon River.
Appendix F, Map 11	Map 11 is Page 10 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes the Shageluk area and the southern portion of the Innoko NWR. The Map shows seven parcels proposed for exchange or disposal. PD006 is a Category 2 potential exchange/disposal area consisting of two sections in S031N057W, located just east of the Yukon River and south of the Innoko NWR. PD012 is a Category 1 potential exchange/disposal area consisting of 34 sections in S030N057W, located west of Shegeluk. PD010 is a Category 1 potential exchange/disposal area consisting of six sections in S031N056W, located on the southern boundary of the Innoko NWR. PD011 is a Category 1 potential exchange/disposal area consisting of 20 sections in S031N056W, located south of PD010. PD021 (1 section), PD022 (1 section), and PD023 (2 sections) are Category 2 potential exchange/disposal areas in S032N054W, located along the Innoko River within the Innoko NWR boundary.
Appendix F, Map 12	Map 12 is Page 11 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes the Takotna and McGrath areas and a portion of the Kuskokwim River. The Map shows 11 parcels proposed for exchange or disposal. The Map shows only a portion of PD285, which is displayed in full on Page 12. PD281 is a Category 2 potential exchange/disposal area consisting of two sections in K029S015E, located northeast of Takotna, along the Iditarod National Historic Trail. PD282 is a Category 2 potential exchange/disposal area consisting of all six sections in S034N035W, located south of and adjacent to PD281. PD283 is a Category 2 potential exchange/disposal area consisting of four sections in S033N035W, located south of and adjacent to PD282. PD284 is a Category 2 potential exchange/disposal area consisting of six sections in S033N036W, located south of Takotna and southwest of PD283. PD286 is a Category 2 potential exchange/disposal area consisting of 12 sections in S032N033W, located southeast of McGrath, east of the Kuskokwim River. PD287 (1 section) and PD288 (3 sections) are Category 2 potential exchange/disposal areas in S031N034W, located east of the Kuskokwim River and southwest of PD286. PD289 and PD290 together form 23 contiguous sections of Category 2 potential exchange/disposal area in S030N035W, located west of the Kuskokwim River. PD292 is a Category 2 potential exchange/disposal area consisting of 28 sections in S029N035W, located south of and adjacent to PD289. PD291 is a Category 2 potential exchange/disposal area consisting of six sections in S030N034W, located east of the Kuskokwim River.
Appendix F, Map 13	Map 13 is Page 12 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes the Nokolia area and a portion of the Kuksokwim River and several of its tributaries. The Map shows two parcels proposed for exchange or disposal. PD285 is a Category 2 potential exchange/disposal area consisting of two sections in S032N031W, located west of the Middle Fork Kuskokwim River and near an Iditarod connecting trail. PD303 is a Category 2 potential exchange/disposal area consisting of one section in S028N023W, located just west of the South Fork Kuskokwim River and along a section of the Iditarod National Historic Trail.

Map Number	Map Description
Appendix F, Map 14	Map 14 is Page 13 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes the eastern edge of the planning area and a portion of Denali National Park and Preserve. The Map shows one parcel proposed for exchange or disposal. PD303 is a Category 2 potential exchange/disposal area consisting of one section in S028N023W, located just west of the South Fork Kuskokwim River and along a section of the Iditarod National Historic Trail.
Appendix F, Map 15	Map 15 is Page 14 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes the Marshall area and a portion of the Yukon Delta NWR. The Map shows four parcels proposed for exchange or disposal. PD201 (Category 2, 1 section), PD026 (Category 2, 1 section), and PD025 (Category 1, 4 sections) are adjacent parcels in S020N069W, located southeast of Marshall. PD027 is a Category 2 potential exchange/disposal area consisting of two sections in S020N068W, located just east of the other parcels and northwest of Russian Mission.
Appendix F, Map 16	Map 16 is Page 15 of the Potential Exchange or Disposal Areas Map series. Its geographic area is generally northeast of Russian Mission and includes a portion of the Yukon Delta NWR. The Map shows one parcel proposed for exchange/disposal. PD240 is a Category 2 potential exchange/disposal area consisting of 19 sections in S023N058W, located along and northeast of the Yukon Delta NWR.
Appendix F, Map 17	Map 17 is Page 16 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes the Holy Cross area and land to the east. The Map shows eight parcels proposed for exchange/disposal. The Map shows only a portion of PD240, which is displayed in full on Page 15. The Map shows only a portion of PD263, which is displayed in full on Page 20. PD246 (Category 1, 15 sections) and PD247 (Category 2, 3 sections) are adjacent parcels in S025N055W, located northeast of Holy Cross, near the confluence of the Yukon and Innoko rivers. PD245 is a Category 3 potential exchange/disposal area consisting of nine sections in S024N055W and 2 sections in S025N054W, located east of Holy Cross and near a lake that is unlabeled on the map. PD260 is a Category 2 potential exchange/disposal area consisting of ten sections in S024N054W and 12 sections in S025N053W, located adjacent to and east of PD245. PD244 is a Category 2 potential exchange/disposal area consisting of 17 sections in S023N056W, located southwest of PD243. PD264 is a Category 1 potential exchange/disposal area consisting of 22 sections in S021N049W, located northwest of Crooked Creek.
Appendix F, Map 18	Map 18 is Page 17 of the Potential Exchange/Disposal Areas Map series. Its geographic area includes the Crooked Creek area and land to the northeast. The Map shows three parcels proposed for exchange or disposal. The Map shows only a portion of PD263, which is displayed in full on Page 20. PD264 is a Category 1 potential exchange/disposal area consisting of 22 sections in S021N049W, located northwest of Crooked Creek. PD265 is a Category 3 potential exchange/disposal area consisting of two sections in S022N046W, located northeast of Crooked Creek and north of the Kuskowkim River.
Appendix F, Map 19	Map 19 is Page 18 of the Potential Exchange or Disposal Areas Map series. Its geographic area is northeast of Stony River and includes a long stretch of the Kukskowim River. The Map shows four parcels proposed for exchange or disposal. The southern edge of the Map shows portions of PD274 and PD275, which are displayed more completely on Page 21. PD272 (Category 3, 4 sections) and PD273 (Category 2, 3 sections) are adjacent parcels in S021N038W, located northeast of the the confluence of the Kuskokwim and Swift rivers.
Appendix F, Map 20	Map 20 is Page 19 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes the Aniak and Chuathbaluk areas and a portion of the Yukon Delta NWR. The Map shows eleven parcels proposed for exchange or disposal. The Map shows a portion of PD263, which is displayed in full on Page 20. PD262 is a Category 2 potential exchange/disposal area consisting of 19 sections in S019050W and 4 sections in S020N050W, located east of the Kuskokwim River. PD253 is a Category 1 potential exchange/disposal area consisting of 18 sections in S018N052W, located northeast of Chuathbaluk and north of the Kuskokwim River. PD 254 and PD255 are adjacent parcels of Category 2 potential exchange/disposal area consisting of 17 contiguous sections in S018N051W, located east of and adjacent to PD253. PD261 is a Category 3 potential exchange/disposal area consisting of 14 sections in S018N050W, located adjacent to and south of PD262 and east of PD255. PD252 is a Category 2 potential exchange/disposal area consisting of 15 sections in S017N054W and 15 sections in S017N053W, located southeast of Chuathbaluk and south of the Kuskokwim River. PD258 is a Category 2 potential exchange/disposal area consisting of 12 sections in S017N050W, located southeast of the Kuskokwim River. PD259 is a Category 2 potential exchange/disposal area consisting of one section in S016N051W, located southeast of the Kuskokwim River and PD252. PD257 is a Category 1 potential exchange/disposal area consisting of 11 sections in S014N056W and 3 sections in S013N056W, located adjacent to the Yukon Delta NWR boundary. PD256 is a Category 1 potential exchange/disposal area consisting of three sections in S014N056W and two sections in S014N057W, located west of PD257 and adjacent to the Yukon Delta NWR boundary.

Map Number	Map Description
Appendix F, Map 21	Map 21 is Page 20 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes the Red Devil and Sleetmute areas and a stretch of the Kuskokwim River. The Map shows six parcels proposed for exchange or disposal. The Map shows a portion of PD262 and PD258, which are displayed in full on Page 19. PD263 is a Category 1 potential exchange/disposal area consisting of eight sections in S020N049W, located adjacent to the Kuskokwim River. PD266 is a Category 2 potential exchange/disposal area consisting of four sections in S019N044W, located near Red Devil along the Kuskokwim River. PD267 is a Category 2 potential exchange/disposal area consisting of five sections in S019N043W, located east of Sleetmute and north of the Kuskokwim River. PD268 is a Category 2 potential exchange/disposal area consisting of one section in S018N044W and one section in S018N043W, located south of the Kuskokwim River.
Appendix F, Map 22	Map 22 is Page 21 of the Potential Exchange or Disposal Areas Map series. Its geographic area includes the Stony River and Lime Village areas, as well as stretches of the Kuskokwim and Swift rivers. The Map shows six parcels proposed for exchange or disposal. PD274 is a Category 3 potential exchange/disposal area consisting of six sections in S021N038W, located near the confluence of the Kuskokwim and Swift rivers. PD275 is a Category 2 potential exchange/disposal area consisting of four sections in S021N038W and one section in S020N039W, located adjacent to and south of PD274. PD269 is a Category 2 potential exchange/disposal area consisting of one section in S019N040W, located south of Stony River and the Kuskokwim River. PD270 is a Category 2 potential exchange/disposal area consisting of seven sections in S018N039W and three sections in S018N038W, located southeast of Stony River and PD269. PD271 is a Category 2 potential exchange/disposal area consisting of four sections in S018N038W, located adjacent to and south of PD270. PD276 is a Category 3 potential exchange/disposal area consisting of 12 sections in S017N034W, nine sections in S018N034W, and two sections in S018N033W, located just north and east of the Swift River.

Appendix G: Goals and Objectives

Appendix G. Goals and Objectives

Section 1. Resource and Resource Uses

1.1 Air Quality and Air Quality-Related Values

1.1.1 Goals

1. Protect air quality and related resource values within the Bering Sea-Western Interior (BSWI) planning area.
2. Coordinate and cooperate with the Alaska Department of Environmental Conservation (ADEC), other federal land management agencies, and adjacent landowners to resolve air quality issues.

1.1.2 Objectives

1. Air quality and air quality-related values would remain comparable to historical levels and are not degraded by the Bureau of Land Management (BLM) or BLM-authorized activities. This would be measures, as applicable, through monitoring of appropriate indicators such as visibility, and concentrations of criteria pollutants subject to National Ambient Air Quality Standards. This monitoring would occur as necessary at the project implementation/permitting level.
2. All activities and authorized uses on BLM-managed public lands in the planning area would comply with applicable tribal, federal, State, tribal, and local air quality regulations, as required by the Clean Air Act, Executive Order (EO) 12088, and the Alaska State Implementation Plan.
3. Activities authorized by BLM would not lead to exceedances of the national or State Ambient Air Quality Standards within the planning area.
4. Permitting of new stationary sources (as outlined in 18 Alaska Administrative Code [AAC] 50.306) on BLM-managed public lands would adhere to Prevention of Significant Deterioration to prevent new non-attainment areas.
5. Air quality, visibility, and other related values in adjacent mandatory federal Class I and Class II Sensitive areas would meet regulatory standards.
6. The effects of smoke on human health, communities, recreation, and tourism would be minimized to the extent practicable and appropriately mitigated in all prescribed fire management activities.

1.2 Soils

1.2.1 Goals

1. Manage BLM-authorized activities to make progress toward properly functioning soil conditions with soil properties appropriate to specific climate and landform. These properties include, but are not limited to, bulk density, infiltration/permeability rates, and moisture storage.
2. Manage actions on BLM-managed public lands in the planning area to provide for long-term sustainability of soil including protection from vegetation trampling/removal, soil compaction, and accelerated soil erosion.

3. Wherever practicable, encourage that surface-disturbing development be located in previously developed or disturbed areas.
4. Increase efforts to inventory soil resources in the planning area.

1.2.2 Objectives

1. Implement proactive stabilization or other appropriate rehabilitation measures in response to anthropogenic or non-anthropogenic events that would impact public health and safety or sensitive ecosystem values.
2. Prioritize proactive reclamation on abandoned mine lands.
3. Reclaim soils in the planning area where oil spills or other hazardous material releases have impaired soil quality.
4. On a case-by-case basis, harden identified preferred routes that provide primary access to available resources, allowing for rehabilitation and restoration of redundant routes to reduce accelerated soil erosion and increased soil compaction. This would be done through implementation-level travel planning.
5. In areas designated as allowing summer off-highway vehicle (OHV) use, monitor and identify thresholds for evaluating vulnerability to accelerated erosion and use best management practices (BMPs) and closures to limit erosion and delivery of sediment to aquatic resource areas.
6. Promote maintenance of soil properties and vegetation conditions consistent with the potential/capability of the site.
7. Conduct regular and routine monitoring of areas affected by BLM-permitted activities. Monitoring requirements would be determined on a project-by-project basis.
8. To the extent possible, monitor modifications to the landscapes such as soil disturbance from fire, vegetation manipulation, and climate change. Use this information to prioritize stabilization and rehabilitation to protect human health/safety and the functions of critical ecosystems.
9. Reduce accelerated erosion/compaction from mining and other activities through use of BMPs, concurrent reclamation, and frequent monitoring.
10. Apply BMPs to mitigate for BLM-permitted surface-disturbing activities.
11. Coordinate with the Natural Resources Conservation Service to prioritize soil inventory efforts to the Unalakleet Wild River Corridor, Areas of Critical Environmental Concern (ACECs), high-value watersheds (HVWs), and any other identified sensitive/critical areas. Expand these inventory efforts to adjacent areas as funding permits.
12. Protect sensitive/critical soil resources within watersheds and other high priority areas. These would be identified through Assessment, Inventory, and Monitoring (AIM) monitoring.
13. Collaborate with U.S. Fish and Wildlife Service (USFWS) to sustain and strengthen landscape-level ecosystem resiliency to human change by managing for connectivity corridors.

1.3 Water Resources and Fisheries

1.3.1 Goals

1. Water Resources

    - Within the planning area, watersheds remain intact, healthy, and diverse. Water quality remains pristine and impaired watersheds are to be rehabilitated. High-quality aquatic habitat is provided for native species and organisms throughout the planning area.
    - Ensure that watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian, wetland, and aquatic components; soil and plant condition support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform flow (BLM Alaska Land Health Standards).
    - Ensure hydrologic cycle remains in balance and supports healthy biotic populations and communities (BLM Alaska Land Health Standards).
    - Protect, restore, and maintain the hydrologic regime (i.e., timing, magnitude, groundwater recharge, duration, stream network/groundwater connectivity, water) to achieve sustainable riparian, aquatic, and wetland habitats.
    - Protect, restore, and maintain the natural chemical, physical, and biological quality of surface water and groundwater, wetlands, and floodplains influenced by BLM resource management activities. Ensure full compliance with applicable federal and State laws and, to the extent appropriate, executive orders.
    - Protect, restore, and maintain the natural flow regime, water levels, and integrity of surface water and groundwater influenced by BLM resource management activities.
    - Ensure availability of surface water and groundwater for public land management purposes by acquiring and protecting federal reserved water rights and water rights obtained through State-based administrative and judicial systems. Ensure full compliance with applicable federal and State laws and regulations.
    - Ensure water quality complies with federal and State water quality standards and achieves, or is making significant progress toward achieving, established BLM-management objectives, such as meeting wildlife needs (BLM Alaska Land Health Standards) by adopting federal and State water quality standards as specific BLM objectives for permitted activities.
    - Permit activities consistent with the maintenance of long-term watershed health and function.
    - Minimize sediment delivery to aquatic resource areas from BLM-permitted activities.
    - Increase baseline water quality/quantity and watershed characterization data collection to better inform BLM permitting decisions.
    - Manage wild and scenic rivers (WSRs) and corridors to protect and enhance the values for which the river was designated with protection of water quality and quantity as a principal goal.
    - Develop measures to protect watershed health and function in the following areas: Nulato watershed, HVWs, ACECs, WSRs, and High Priority Restoration Watersheds. Management in these areas should include the maintenance of water quality/quantity and timing of runoff.

2. Fisheries and Aquatic Resources

- Maintain and improve habitats that support or in the future could support native fish and aquatic species, especially those that are important to subsistence lifestyles and provide for rural economic opportunities.
- Protect and maintain intact and healthy aquatic habitats in potential natural condition[1] (PNC) to ensure connectivity across the landscape.
- Reverse declines in the quality and quantity of aquatic habitats to ensure improvement of watershed health toward PNCs.
- Increase the quality and quantity of fish habitats that support a broad natural diversity of fish and other aquatic species.
- Riparian and aquatic habitats are managed or restored to PNC.
- The following goals are consistent with the 2006 National Fish Habitat Action Plan (Association of Fish and Wildlife Agencies 2006) and BLM Instruction Memorandum (IM) 2009-141, *Guidance on the BLM Fisheries Program and the National Fish Habitat Action Plan* (BLM 2009):
    - Maintain water quality that satisfies State standards and provides for stable and productive riparian and aquatic ecosystems.
    - Maintain stream channel integrity, channel processes, and the sediment regime (including the elements of timing, volume, and character of sediment input and transport) under which the riparian and aquatic ecosystems developed in that specific ecoregion.
    - Manage and protect instream flows to support healthy riparian and aquatic habitats, which promote the stability and effective function of stream channels, and the ability to effectively route flood discharges.
    - Maintain natural timing and variability of the water table elevation in meadows and wetlands.
    - Manage for diversity and productivity of native plant communities in riparian zones.
    - Manage riparian vegetation to:
        - Provide an amount and distribution of large woody debris characteristic of natural aquatic and riparian ecosystems;
        - Provide adequate summer and winter thermal regulation within the riparian and aquatic zones; and
        - Help achieve rates of surface erosion, bank erosion, and channel migration characteristic of those under which the communities developed.
    - Maintain riparian and aquatic habitats necessary to foster the unique genetic fish stocks that evolved within the specific geo-climatic region.
    - Manage habitat to support populations of well-distributed native plant, vertebrate, and invertebrate populations that contribute to the viability of riparian-dependent communities.

[1] Potential natural condition (PNC) is defined as the range of natural conditions that defines the preferred values for a quantitative attribute. The range is based on the range of variability among regional reference conditions established through implementation of the BLM National Aquatic Monitoring Framework in Alaska.

1.3.2 Objectives

1. Water Resources

- BLM-authorized activities, programs, and projects must comply with all applicable federal, State, tribal, and local water quality, wetland, and floodplain laws, statutes, regulations, standards, and State implementation plans (as amended), consistent with executive orders, the Clean Water Act, Federal Land Policy and Management Act (FLPMA), and BLM Manual 6720–Aquatic Resource Management.
- When applicable, collect data to determine if any streams in the planning area should be considered by ADEC for addition to the State of Alaska's 303(d) impaired streams list.
- Work to restore 303(d)-listed streams or other streams affected from past land uses in the planning area to improve conditions toward PNC.
- Conduct regular and routine monitoring of permitted surface-disturbing activities to ensure compliance with federal and State requirements for water quality and watershed health.
- Reduce erosion and sediment delivery from mining activities through sound development of mining plans, adherence to State water quality controls and recommendations, implementation of BMPs, and frequent monitoring.
- Require that prior to approving surface-disturbing activities that would impact streams, detailed stream reclamation plans are provided by the project proponent for approval by the BLM.
- Establish buffer zones/setbacks in riparian areas to eliminate direct disturbance to the stream channel, where applicable.
- Reduce accelerated erosion and sediment delivery from OHV travel through implementation-level travel planning using selected OHV type definitions, restricting the seasons of use, route definitions, route delineations, route improvements, and stream/riparian buffers, or by RMP-level decisions such as closing areas.
- Reduce accelerated erosion and sediment from construction activity by following BMPs and standard operating procedures.
- Reduce non-point source pollution by requiring a Storm Water Engineering Plan (State of Alaska 18 AAC 72.600) and a Stormwater Pollution Prevention Plan to manage materials, equipment, and runoff from the site for surface-disturbing permitted activities in sensitive watersheds (Nulato watershed, HVWs, ACECs, and WSRs). Locatable mineral development would be an exception (in areas outside the above identified sensitive watersheds) to this in that this development would address non-point source pollution through Alaska Pollutant Discharge Elimination System permitting requirements. For all surface-disturbing activities within these sensitive watersheds, operators shall have staff on site that are Certified Erosion and Sediment Control Leads.
- Prior to authorizing activities, the AO should require proof that an Alaska Department of Fish and Game (ADF&G) Fish Habitat Permit permit(s) have been obtained for all activities that include stream crossings on BLM-managed lands.
- Require that proposed projects that have the potential to impact groundwater, monitor groundwater characteristics.

- Maintain ecological functions and processes necessary to protect and enhance the outstandingly remarkable values of rivers in the planning area that are included in the WSR System.
    - Prioritize application to the State of Alaska for water rights to preserve required flows in the Nulato watershed, HVWs, ACECs, and WSR corridors. The BLM would pursue instream flow reservations of water for the following rivers, and may prioritize additional rivers in HVWs or ACECs:
        - Anvik River
        - Big River
        - Gisasa River
        - Kateel River
        - North River
        - Unalakleet River
    - The purpose of pursuing these water rights may include the following:
        - Maintain year-round flows necessary to sustain fish and wildlife habitat, migration, and propagation within and adjacent to said river.
        - Maintain or improve recreational opportunities.
        - Meet navigation and transportation goals.
        - Meet sanitary and water quality goals.
- Compile summary reports on a rotational basis (every 3 or 4 years, or more frequently as necessary) for inventory and monitoring data collected to support WSR instream flow water rights and water quality. Water rights for anadromous fish streams in the planning area would be managed as per BLM Manual 7250–Water Rights. The objectives of the BLM water rights program are as follows:
    - Acquire and perfect federal reserved and State-based water rights necessary to carry out public land management purposes.
    - Protect federal reserved water rights and water rights obtained through State-based administrative and judicial systems. Ensure full compliance with applicable State laws, federal laws, and executive orders.
    - Ensure availability of water for public land management purposes by acquiring and protecting BLM-managed water rights, as part of an overall strategy that may include other cooperative techniques for insuring water availability. Water rights that result in sole title of said water to the U.S. for uses on federal land should be the primary objective, if possible. In certain circumstances, an opportunity to acquire water from private lands to be used on federal lands and federal resources without sole title to the water may be considered.
    - Document BLM-managed water rights in accordance with the file and records maintenance protocols described in Section 1.6 of BLM Manual 7250–Water Rights.

2. Fisheries and Aquatic Resources

- The BLM would manage aquatic habitats such that stream geomorphic and hydrologic functions are within PNC for the planning area as defined by the AIM Core Indicators listed

below. On sites where permitted land use activities result in conditions that are outside of PNC, rehabilitation efforts would be designed to move conditions to within PNC in less than 5 years.

- Similarly, the BLM would also manage riparian-wetland habitats so functions are within the PNC for the planning area as defined by the AIM Core Indicators. On sites where permitted land-use activities result in conditions that are outside this PNC, rehabilitation efforts would be designed to move conditions to within PNC in less than 5 years.
- AIM Core Indicators that would be managed to meet these objectives would include (but may not be limited to):
    - Water quality
        - Acidity
        - Conductivity
        - Temperature
        - Turbidity
        - pH
    - Watershed function and instream habitat quality
        - Pool frequency
        - Streambed particle sizes
        - Bank stability and cover
        - Floodplain connectivity
        - Large woody debris
        - Ocular estimate of instream habitat complexity
    - Biodiversity and riparian habitat quality
        - Macroinvertebrate biological integrity
        - Ocular estimates of riparian vegetative type, cover, and structure
        - Canopy cover
        - Quantitative estimates of riparian vegetative cover, composition, and structure
    - Other potential indicators
        - Slope
        - Bankfull width
        - Floodplain area
- Mining reclamation plans for the rehabilitation of fish habitat as required under 43 Code of Federal Regulations (CFR) 3809.420(b)(3)(ii)(E) would focus on three objectives. Typically, these requirements would be satisfied through the development of a site-specific reclamation plan using Natural Channel Design techniques and the best available science. Bond release would be based on meeting specific measurable objectives outlined in a monitoring plan (43 CFR 3809.401(b)(3)). These objectives are:

  - Provide a stable channel form that is in balance with the surrounding landform such that channel features are maintained and the stream neither aggrades nor degrades. To achieve this, it would be necessary to submit to the BLM a design of a post-mining stream channel using morphological characteristics of the pre-disturbance channel and floodplain (e.g., bankfull and 100-year floodplain dimensions, slope, meander patterns, design flows and velocities, riffle-to-pool ratios, pool depths, substrate particle sizes at riffles and pools), which could be derived from field surveys of the area, remotely sensed information, or information from adjacent watersheds that exhibit similar characteristics as the watershed proposed for mining.
  - Provide sufficient lateral stability and riparian vegetation to effectively dissipate stream energy, prevent soil erosion, stabilize streambanks, provide essential nutrient input, and maintain water quality and floodplain function. In areas with low recovery potential and moderate to high erosion risk, such as newly constructed streambanks, the use of vegetation transplants and toe rock/wood in areas would be required.
  - Provide instream habitat complexity similar to that of pre-disturbance levels through the use of instream structures (e.g., constructed riffles, riffle-steps).

- Unless located in an area with stricter requirements, all mining activity (Notice and Plan level) that have the potential to affect perennial streams, would be required to restore riparian function, assure a stable channel form, and progress toward higher Stream Functional Objectives. Restoring to this functional objective would stabilize soils and minimize erosion potential.

1.4 Vegetation

1.4.1 Goals

1. Manage BLM-permitted and casual use activities to maintain functional ecosystems composed of healthy and diverse native communities as required by the BLM Alaska Land Health Standards. If changes in climate or other factors make managing for all native species not possible, the BLM would manage for healthy and diverse functioning ecosystems.
2. Sustain and strengthen landscape-level ecosystem resiliency to human-caused change by managing for connectivity of neighboring NWRs (Innoko National Wildlife Refuge [NWR], Yukon Delta NWR, Koyakuk NWR, and Selawik NWR).
3. Prevent the listing of BLM sensitive plant species under the Endangered Species Act.
4. Maintain adequate vegetation to prevent human-related erosion and degradation of permafrost.
5. Cooperate with adjacent landowners and jurisdictional authorities to develop a coordinated monitoring program to detect shifts in undisturbed vegetation condition.

1.4.2 Objectives

1. Prevent statistically significant divergence from natural variability in land cover composition. Specifically focus on preventing divergence from natural composition for the following land cover types (see Draft RMP/EIS, Appendix E, Map 2-5, for land cover composition in the planning area):
   - Tall shrub, low shrub, and floodplains (generalized moose habitat)

- Lichen habitats (generalized caribou habitat)
- White spruce on well-drained floodplains
- Dwarf shrub and sparsely vegetated areas (generalized BLM sensitive plant species habitat)
- Herbaceous wetlands

2. Desired future condition for the following seven AIM Core Indicators is to exist within PNC. On sites where permitted land use activities temporarily result in conditions that are outside of PNC, rehabilitation efforts would be designed to move conditions to within PNC after permitted activities have ceased:
   - Amount of bare ground
   - Vegetation composition
   - Nonnative invasive plant species presence
   - Plant species of management concern
   - Vegetation height
   - Proportion of soil surface in large canopy gaps
   - Soil aggregate stability
   - Moss/duff depth
   - Active layer depth (when permafrost is present)
   - Other indicators that are agreed upon with neighboring landowners and partners to contribute to landscape-level datasets
3. Manage for long-term sustainability of vegetation in the planning area to a high condition such that no more than 10 percent of each vegetation cover type is affected by the human development footprint at a given time. At the time of plan development, the best available source of this information is provided by the University of Alaska Natural Heritage Program (now renamed Alaska Center for Conservation Science) Ecological Intactness Model. Future improved datasets, however, would be adopted. Landscape intactness in the planning area is shown in Appendix E, Map 2-6, in the Draft RMP/EIS.
4. Protect or restore habitat for special status species (SSS) flora. Manage for no net loss of SSS flora habitat. SSS locations within the planning area are shown in Appendix E, Map 2-7, in the Draft RMP/EIS.
5. The BLM would work in partnership with the State of Alaska and other landowners to develop consistent reclamation standards to maintain overall ecosystem function.

1.5 Wildlife

1.5.1 Goals

1. Maintain, protect, and enhance habitats to support natural wildlife diversity, reproductive capability, and a healthy, self-sustaining population of all wildlife species.
2. Manage crucial, high-value, and unfragmented habitats as management priorities.

1.5.2 Objectives

1. EO 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds," would be integrated into all activities with potential adverse impacts, wildlife management programs, and other resources including riparian-wetland habitat, raptor protection, fire, SSS, off-site mitigation and habitat enhancement.
2. Management would emphasize birds listed on the current USFWS Birds of Conservation Concern and Boreal Partners-in-Flight priority species (as updated). As specific habitat needs and population distribution to Birds of Conservation Concern and Partners-in-Flight priority species are identified, the BLM would use adaptive management strategies to further conserve habitat and avoid impacts on these species.
3. The BLM would establish buffer zones, date limitations, seasonal restrictions around nests or cliff nesting habitats for raptors.
4. The BLM would cooperate with ADF&G to accomplish population surveys and habitat goals and objectives of the RMP for all big game (moose, caribou, bison, and muskox).
5. The BLM would cooperate with ADF&G and Alaska Department of Natural Resources to determine stipulations for barge traffic on rivers to protect raptor habitats and nesting sites on BLM lands adjacent to navigable rivers from disturbance.

1.6 Nonnative Invasive Species

1.6.1 Goals

1. The desired future condition is an intact landscape undamaged by nonnative invasive species (NNIS), species (flora and fauna) that are not native to the planning area and cause ecological or economic harm.
2. Prevent damage to intact and functional ecosystems caused by NNIS infestations. Confine damage caused by NNIS infestations to already degraded areas.
3. Prevent the introduction and spread of NNIS in uninfested areas.
4. Contain, control, or eradicate existing NNIS infestations.
5. Effectively integrate NNIS prevention, control, and management activities into all BLM programs and functions within the planning area.

1.6.2 Objectives

1. Prevent introduction through critical control points: inspection and cleaning, education and outreach, and Early Detection Rapid Response (EDRR).
2. In accordance with the BLM Alaska State Invasive Species Policy, prioritize species with a ranking higher than 50 on the Invasiveness Ranking System for Non-native Plants of Alaska (Carlson et al. 2008) (however, some species ranked higher than 50 are excluded from this policy) for control and possible eradication. Species with a ranking lower than 50 are targeted for containment management.

3. Prioritize NNIS infestations occurring adjacent to communities or travel routes over infestations further away from human activities.
4. Prioritize EDRR for any aquatic invasive species found in any surface waters that could be used by float planes or watercraft.

1.7 Wildland Fire

1.7.1 Goals

1. The protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be based on the values to be protected, human health and safety, and the costs of protection. Once people have been committed to an incident, these human resources become the highest value to be protected. (H-9211 Fire Planning Manual).
2. Wildland fire would be managed for multiple objectives, including protection and resource benefit, on all BLM-managed lands in the planning area. Naturally occurring wildland fire would be used to protect, maintain, and enhance resources and, as nearly as possible, would be allowed to function in its natural ecological role as a disturbance agent (USDA et al. 2009).
3. Fuel treatments would protect values and achieve resource management plan objectives.
4. Wildland fire would be managed at a landscape scale. Fire management strategies and practices would be adapted in response to climate change as necessary to ensure protection and resource objectives continue to be met.
5. Prevention, outreach, and education programs would improve the public's understanding of wildland fire management and the natural role of wildland fire in Alaska's ecosystems.

1.7.2 Objectives

1. Human life and health would be protected from risks associated with wildland fire, smoke, and fire management actions.
2. The cost of protecting BLM resources and assets from wildland fire damage would be kept commensurate with their value.
3. Wildfires on BLM-managed public lands that threaten communities or other jurisdictions would be managed collaboratively by all affected agencies. Wildland fire management actions would consider risks and benefits that span jurisdictional boundaries. The BLM would help local communities build the capacity to reduce the risk that wildland fire poses to their populace and infrastructure.
4. Wildland fire management would be used as a tool to accomplish management objectives for the following resources:
    - Air Quality and Air Quality-related Values
    - Soils
    - Water Resources and Fisheries
    - Vegetation

- Wildlife
- Nonnative Invasive Species
- Cultural Resources
- Paleontological Resources
- Visual Resources Management
- Lands with Wilderness Characteristics
- Forestry and Woodland Products

5. Wildland fire management decisions would be based on a foundation of sound science. As the effects of climate change become better understood, strategies may be adapted to reduce or delay alterations in fire regime and vegetation structure or limit the release of greenhouse gases into the atmosphere, recognizing that it may not continue to be possible, practical, economical, or desirable to maintain vegetation within historical ranges of variation.
6. Wildland fire management activities would be conducted in a manner that avoids damaging impacts on resources and other values including the introduction and spread of nonnative and invasive species, introduction of suppression chemicals into waterways, disturbance of erodible soils or ecologically sensitive systems, and the degradation of air quality as a result of prescribed fire activities. Where damage occurs, it would be repaired or mitigated to the extent possible.
7. Emergency Stabilization and Rehabilitation efforts would identify and mitigate threats to life or property or unacceptable degradation to natural and cultural resources resulting from the natural effects of a wildland fire.
8. The BLM would clearly communicate to the public how fire management policies and practices work to balance the natural role of wildland fire with the protection of human life, communities, and other values.
9. Unauthorized human ignitions would be prevented through collaborative prevention efforts with interagency partners and other affected groups and individuals.

1.8 Cultural Resources

1.8.1 Goals

1. Identify, preserve, and protect significant cultural resources and ensure that they are available for appropriate uses by present and future generations under FLPMA, Section 103(c), 201(a) and (c); National Historic Preservation Act (NHPA), Section 110(a); and Archaeological Resources Protection Act, Section 14(a).
2. Seek to reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflict with other resource uses (National Environmental Policy Act [42 U.S. Code Section 4321]; FLPMA Section 103(c); NHPA 106, 110(a)(2)) by ensuring that all authorizations for land use and resource use will comply with the NHPA Section 106.
3. Maintain the condition (National Register of Historic Places [NRHP] eligibility) of cultural resources: protect from destruction and deterioration.

4. Maintain the number of cultural resources: ensure sites are not lost to actions such as development, erosion, or fire.
5. Increase knowledge of cultural resources in the planning area (through proactive surveys, oral histories, and other methods).

1.8.2 Objectives

1. Maintain or increase the number of known sites within the planning area.
2. Increase the acres of planning area inventoried for cultural resources.
3. Maintain the NHRP eligibility of known cultural resource sites within the planning area.
4. Ensure that access to sensitive cultural resource sites is not increased.
5. Increase general (not site-specific) outreach, interpretation, and education for cultural resources in the planning area.

1.9 Paleontological Resources

1.9.1 Goals

1. Protect and conserve significant paleontological resources.

1.9.2 Objectives

1. Conduct inventory, identify, record, evaluate, manage, and protect significant paleontological resources for scientific research, educational purposes, and public outreach.
2. Protect significant paleontological resources from surface-disturbing activities by conducting inventory in high probability paleontological areas.
3. Develop education/interpretation related to important paleontological resources.
4. Develop an updated Potential Fossil Yield Classification system 1 (low) through 5 (high) for the planning area (see Draft RMP/EIS, Appendix E, Map 2-13).
5. Complete and maintain an inventory of fossil localities and monitor known occurrences of any significant paleontological resources that are under possible threat.

1.10 Visual Resources Management

1.10.1 Goals

1. Manage public lands in a manner that would protect the quality of the scenic (visual) values of these lands for present and future generations.
2. Manage public lands administered by the BLM according to Visual Resource Management (VRM) classes that are determined based on the visual resource inventory, land use allocation, and management action decisions made in the RMP.

1.10.2 Objectives

1. Establish VRM classes for the planning area.

2. Maintain the overall integrity of visual resource inventory classes while allowing for development of existing and future uses.
3. Promote BMPs for reclamation of landscapes, restoration of native habitats, and rehabilitation of waterways and riparian areas to enhance natural/historical scenic values that have been negatively altered. These would include BMPs found in *Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands* (BLM 2013).

1.11 Lands with Wilderness Characteristics

1.11.1 Goals

1. Maintain the area's existing natural conditions.
2. Maintain opportunities for solitude or primitive and unconfined types of recreation.

1.11.2 Objectives

1. Following the guidance of BLM Manual 6310–Conducting Wilderness Characteristics Inventory on BLM Lands, maintain the inventory of the 80 parcels of land throughout the life of the RMP.

1.12 Forestry and Woodland Products

1.12.1 Goals

1. Maintain and restore health, productivity, and biological diversity of forest and woodland ecosystems.
2. Consistent with other resource values, provide personal use wood products for local consumption and opportunities for commercial harvest.

1.12.2 Objectives

1. Continue to inventory additional acres of the planning area for forest resources.
2. Define areas where timber or biomass harvesting is acceptable.
3. Provide forest resources to meet subsistence needs of rural Alaskans.
4. Provide forest resources to promote economic opportunity throughout the region for community biomass or other products that could enhance the economic stability of the region.

1.13 Grazing

1.13.1 Goals

1. Manage permitted grazing to meet BLM Alaska Land Health Standards.
2. Provide opportunities for grazing by local communities if proper grazing management can ensure the protection, conservation, and improvement of rangeland ecological health.
3. Manage rangelands for long-term sustainability of habitat, resilient ecosystems, and connectivity of native wildlife movement.
4. Prevent domestic animal conflict with caribou herds.

1.13.2 Objectives

1. Maintain or restore rangelands to ensure or to make progress toward meeting BLM Alaska Land Health Standards.

1.14 Locatable and Salable Minerals

1.14.1 Goals

1. Support a successful and innovative mineral development program that can allow for job opportunities while reclaiming mined lands to ecologically successful and environmentally stable function through the use of modern reclamation techniques.
2. Provide for the opportunity to develop locatable and salable mineral resources on public lands to meet national, regional, and local needs while ensuring the long-term health and diversity of the land.
3. Ensure compliance with all applicable federal, State, and local laws and conformance with 43 CFR 3809, Surface Management (mining); 43 CFR 3715, Use and Occupancy (occupancy of mining claims); and 43 CFR 3600, Mineral Materials (common variety minerals mining).
4. Encourage exploration of public lands to define potential mineral resources of national strategic interest, that are economically crucial for state and local communities, and to support green technology development and carbon reduction technology.

1.14.2 Objectives

Locatables

1. Process all plans and notices in accordance with 43 CFR 3809 and 43 CFR 3715 regulations, with a focus on quality product delivery to applicants, within a reasonable time frame, to support Alaska's unique and seasonally dependent placer mining industry.
2. Conduct all mandatory compliance inspections to ensure proper compliance with the law and regulations, policy, and mine and reclamation plan. Provide constructive feedback to miners on the status of their mining operation.
3. Focus on resolving issues at the lowest and most reasonable level and progressively working through the steps of allowable enforcement actions to return any mining operation in noncompliance to compliance.
4. Ensure adequate reclamation of mine sites, both placer and hard rock, to comply with the latest industry standards and BMPs.

Salables

1. Process all mining and reclamation plans in accordance with 43 CFR 3600 regulations, with a focus on quality product delivery to applicants within a reasonable time frame.
2. Conduct all mandatory compliance inspections to ensure proper compliance with the law and regulations, policy, and mining and reclamation plan. Provide constructive feedback to operators on the status of their mining operation.

3. Focus on resolving issues at the lowest and most reasonable level and progressively working through the steps of allowable enforcement actions to return any mining operation in noncompliance to compliance.
4. Perform production verification to ensure accurate accounting of materials removed and proper compensation to the federal government.
5. Identify and resolve any mineral material trespass.

1.15 Leasable Minerals

1.15.1 Goals

1. The public lands and federal mineral estate will be made available for orderly and efficient exploration, development, and production of leasable mineral resources (includes oil, natural gas, tar sands, coal bed methane, and geothermal steam), unless withdrawal or other administrative action is justified in the national interest.
2. All leasable minerals actions will comply with goals, objectives, and resource restrictions (mitigations) to protect other resource values in the planning area.

1.15.2 Objectives

1. If demand arises, provide opportunities for environmentally responsible exploration and development of leasable mineral and energy resources subject to appropriate BLM policies, laws, and regulations.

1.16 Lands and Realty

1.16.1 Goals

1. Meet public needs for use authorizations such as rights-of-way (ROWs), leases, and permits while minimizing adverse impacts to resource values.
2. Retain lands within the BLM's administration except where necessary to accomplish resource goals and objectives outlined in the RMP. The BLM would transfer lands out of federal ownership or acquire non-federal lands where needed to accomplish resource goals and objectives, improve administration of public lands, or meet essential community needs.
3. Acquire and maintain access to public lands to improve management efficiency, facilitate multiple use, and promote the public's enjoyment of these lands in coordination with other federal agencies, State and local governments, and private land owners.

1.16.2 Objectives

1. Consolidate land management to accomplish resource goals and objectives outlined in the Plan.
2. Determine if existing Alaska Native Claims Settlement Act (ANCSA) 17(d)(1) withdrawals should remain in place or be revoked. Determine if new withdrawals should be implemented to protected identified areas with resource or management concern.

3. Manage 17(b) easements reserved in patents or interim conveyances to ANCSA corporations for continued access to public lands in accordance with the ANCSA 17(b) Easement Management Handbook (BLM 2007).

1.17 Recreation and Visitor Services

1.17.3 Goals

1. Within the identified recreation management areas, manage for the primary activities to achieve the identified experiences and benefits.
2. Plan for and manage the physical, social, and operational settings within each area and the activities that occur within them.
3. Increase and improve collaboration with communities within the planning area, businesses, and BLM permittees.
4. Focus the recreation program and administer special recreation permits to conserve the identified recreation outcomes, manage visitor use, protect recreational and natural resources, provide fair market value to the United States, and provide for health and safety of visitors.
5. Provide basic visitor services, including interpretation, information and education in the context of the desired recreation setting.

1.17.4 Objectives

1. Throughout the life of the plan, evaluate visitor satisfaction on a 5-year basis using such methods as field visits, staff monitoring, and surveys. The objective is to manage recreation such that the minimum visitor satisfaction achieves a rating of 75 percent.
2. Throughout the life of the plan, manage the planning area's recreation setting character as a range from front country to back country as further defined by outcomes-focused management objectives for recreation management areas.
3. Throughout the life of the plan and within the Iditarod National Historic Trail (INHT) Special Recreation Management Area (SRMA), manage for the primary activities of dog mushing and snowmobile riding, secondary activities of trapping and hunting.
4. Throughout the life of the plan, and within the INHT SRMA, provide a setting in which the following experiences and benefits could be achieved:
    a. Experiences
        1) Gain recognition from others for using the trail.
        2) Tell others about the trip.
        3) Enjoy exploring on one's own.
        4) Enjoy participation in group outdoor events.
        5) Enjoy strenuous exercise.
        6) Escape everyday responsibilities.
        7) Experience and feel good about solitude, isolation, and independence.

8) Experience and enjoy adventure.
9) Experience and enjoy the sights, sounds, and smells of nature.
10) Test one's endurance (secondary experience).

b. Benefits
   1) Benefits (personal)
      a) Greater self-reliance
      b) Improved outdoor recreation skills
      c) Enhanced awareness and understanding of nature
      d) Enhanced sense of personal freedom
      e) Enhanced sense of competence
      f) Greater sense of adventure
   2) Benefits (community/social)
      a) Heightened awareness of natural world
      b) Improved community closeness and bonding
      c) Greater family bonding
      d) Enlarge sense of community dependency on public lands
      e) Increased independence/autonomy
      f) Greater interaction with visitors from different cultures
   3) Benefits (environmental)
      a) Greater retention of distinctive natural landscape features
      b) Reduced negative impacts such as litter, vegetative trampling, and unplanned trail construction.

5. Throughout the life of the plan, and on an annual basis, manage the INHT SRMA for the following Recreation Setting Characteristics (RSCs):
   a. Physical
      1) The INHT SRMA is more than 0.5 mile from paved roads, and the existing natural landscape has been retained and modifications to the landscape are not evident. Visitor facilities consist of simple/basic recreation developments such as shelter cabins and trail signs.
   b. Social
      1) There are two seasons of use on the INHT SRMA; the high season occurs from February to March, and visitors can expect to see an average of 15-29 people on the trail per day, in group sizes of four to six. The low season occurs April to January, and visitors can expect to see fewer than three other people each day. Evidence of use is limited to small localized areas with vegetation impacts. Wood lathe with reflective tape from permitted

events is occasionally seen along the trail. Signs identifying the INHT would be visible at access points, cabins, and periodically along the trail.

c. Operational

1) Public access is predominantly by snowmobile, with a lesser use by dog sleds, winter mountain bikes, and cross-country skiing. No full-size vehicles would be in use. Visitor information would consist of maps available at BLM offices and shelter cabins, websites, and minimal signage along the trail.

2) Signs would be directional in nature with the exception of BLM public shelter cabins, which may also provide educational and interpretive signs. BLM staff would be present occasionally, most frequently during permitted events.

3) Partnerships would be explored and utilized to maintain a minimal management presence.

4) Management controls would include, but not be limited to, limits to group size, limits to duration of stay, waste management (human and litter), and permitted activities and commercial filming. Dispersed recreation uses would be lightly managed, with little to no cost to the public.

6. Within the Rohn Recreation Management Zone (RMZ) of the INHT SRMA, manage for the primary activities of group use, camping and hunting, and for the secondary activities of snowmobile riding and sightseeing. Monitoring by staff to ensure this objective is being met would be performed on an annual basis, with an emphasis on winter months.

7. Within the Rohn RMZ, provide a setting in which the following experiences and benefits could be achieved:

a. Experiences:

1) Testing one's endurance

2) Enjoying a risk-taking adventure

3) Experiencing togetherness with similar people

4) Participating in group outdoor activities

5) Being in control of things that happen

6) Enjoying the sights, sounds, and smells of nature

7) Enjoying an escape from crowds of people

8) Gaining recognition from others for completing a trip to Rohn RMZ

9) Feeling good about solitude, isolation, and independence

b. Benefits:

1) Personal:

a) Greater self-reliance

b) Improved skills for outdoor enjoyment, both by one's self and in group settings

c) Improved outdoor knowledge and self-confidence

d) Increased adaptability
e) Stronger ties with family and friends
f) Become a more well-informed and responsible visitor
g) Increase one's personal relationship with the natural world
h) Gain a greater sense of adventure

2) Community/Social:
a) Increased awareness of nearby communities
b) Increased revenue to nearby communities
c) Greater protection of area historic structures

3) Environmental:
a) Heightened awareness of the natural world
b) Greater management of fish, wildlife, and plant resources

8. Throughout the life of the plan, and on an annual basis, manage the Rohn RMZ for the following RSCs:

a. Physical:
1) Rohn is within 0.5 mile of a trail and airstrip.
2) An unmaintained gravel airstrip, cabin, and toilet have partially modified the existing natural landscape but are not visible from the entire zone.
3) Simple/basic recreation developments such as the Rohn shelter cabin and primitive toilet, hazardous materials storage locker, portal sign, and site maintenance tools are found on site.

b. Social:
1) There are two seasons of use at the Rohn RMZ; the high season occurs from February to March, and visitors can expect to see an average of 15-29 people on the trail per day, in group sizes of three or fewer. The low season occurs April to January, and visitors can expect to see fewer than three other people each day, which often consists of passengers of small airplanes landing at the site.
2) Evidence of use is limited to small localized areas of vegetation alteration and compacted/bare soils at the shelter cabin and adjacent to the airstrip. Surface vegetation would continue to be managed to allow minimal wear and bare soils along the trail.

c. Operational:
1) Winter access is predominantly by aircraft, with some dog mushing, winter mountain biking, and snowmobile riding. Summer access is possible by aircraft and small inflatable watercraft only.
2) Visitor information would consist of maps available at BLM offices and shelter cabins, websites, and minimal signage at the cabin and along the trail. Signs would be directional in nature.

3) BLM staff would be present occasionally, most frequently during permitted events. Partnerships would be explored and utilized to maintain a minimal management presence.
4) Management controls would include, but not be limited to, limits to group size, limits to duration of stay, waste management (human and litter), and permitted activities and commercial filming.
5) Dispersed recreation uses would be lightly managed and little to no cost to the public.
6) Shelter cabin rules would be posted in plain sight at the cabin. Permitted use such as organized group activities includes restrictions, limitations, and stipulations on such acts as group size, camping ethics, human waste, and litter disposal.

9. Dispersed recreation uses would be lightly managed and without cost to the public remainder of the planning area (comprising of the North and South Nulato Hills, the Yukon River Lowlands, the Kuskokwim Mountains, the Tanana-Kuskokwim Lowlands, the Lime Hills, and the Ahklun Mountains) and would be managed annually as an Extensive Recreation Management Area (ERMA). The ERMA would be applied uniformly to all areas not managed as INHT SRMA and Rohn RMZ because recreation values are considered uniform across the planning area.
10. Within the BSWI ERMA, the land would be managed to sustain recreational activities of hunting, dispersed camping, fishing, and snowmobile riding and fishing.
    a. Manage for sustainable wildlife and fisheries resources that support hunting and fishing activities.
    b. Manage OHV use as limited.
11. Within the BSWI ERMA, provide a setting in which the following experiences and benefits could be achieved:
    a. Experiences:
        1) Escaping crowds
        2) Experiencing solitude
        3) Enjoying the sights, sounds, and smells of nature
        4) Testing one's abilities (secondary experience)
    b. Benefits:
        1) Personal:
            a) Enhanced sense of personal freedom
            b) Enhanced sense of competence
            c) Greater sense of adventure
        2) Environmental:
            a) Heightened awareness of the natural world
            b) Greater management of fish, wildlife, and plant resources
12. Throughout the life of the plan, the BLM would monitor on an annual basis the management of the BSWI ERMA for the following RSCs:

a. Physical:

1) Most of the ERMA is more than 0.5 mile from mechanized or motorized trails/routes and navigable waterways.

2) The natural landscape is undisturbed.

3) There are no structures, visitor facilities, or trailheads. Few existing trails were developed by traditional subsistence activities and village-to-village transportation and would be managed as such.

b. Social:

1) Fewer than three encounters per day at dispersed/primitive campsites, primarily passengers of small fixed wing air craft. Groups most often consist of three or fewer people.

2) There are no alterations to the natural terrain, and sounds of people are mostly absent, with the exception of the sounds of the occasional fixed wing aircraft.

c. Operational:

1) Public recreational access in the winter is rare to non-existent away from the INHT SRMA, which bisects the ERMA. Summer access is by fixed-wing aircraft with tundra tires and by jet boats along major rivers (e.g., Yukon, Anvik, Unalakleet, and Kuskokwim Rivers). The entire ERMA is roadless.

2) Visitor information would consist of maps available at BLM offices and shelter cabins, websites, and minimal signage along the trail. Signs would be directional in nature. BLM staff would be present occasionally, most frequently during permitted events. Partnerships would be explored and utilized to maintain a minimal management presence. Management controls would include, but not be limited to, limits to group size, limits to duration of stay, waste management (human and litter), and permitted activities and commercial filming. Dispersed recreation uses would be lightly managed and without cost to the public.

13. Throughout the life of the plan, the Community Focus Zones (CFZ) of the BSWI ERMA would provide opportunities for village residents to conduct subsistence harvest activities free from the impacts of permitted sport and commercial harvests in areas immediately adjacent to their villages.

14. Throughout the life of the plan, and within the CFZ of the BSWI ERMA, desired experiences and benefits would focus on traditional subsistence use.

a. Experiences:

1) Engaging in traditional use in traditional areas

2) Engaging on traditional practices alone or with others

3) Connecting to nature through reliance on natural resources

4) Enjoying the sights, sounds, and smells of nature

b. Benefits:
    1) Personal:
        a) Satisfaction in carrying out traditional uses
        b) Pride in providing for family and community
        c) Enhanced sense of personal freedom
        d) Enhanced sense of competence
        e) Enhanced sense of self-reliance
    2) Community
        a) Passing knowledge of subsistence from generation to generation
        b) Fostering connection across generations
    3) Environmental:
        a) Heightened awareness of the natural world
        b) Participation in stewardship of subsistence resources
        c) Reduced pressure for fish, wildlife, and plant resources

15. Throughout the life of the plan, the BLM would monitor on an annual basis the management of the CFZ in the BSWI ERMA for the following RSCs:
    a. Physical:
        1) No visitor facilities or trailheads would be developed by the BLM.
        2) BLM would coordinate with communities to support cultural tourism if desired by community.
        3) Existing trails resulting from traditional subsistence activities and village-to-village transportation would remain for the life of the plan.
    b. Social:
        1) Encounters would be limited to individuals or groups engaged in subsistence use or cross-country travel.
        2) Encounters with commercial outfitter groups would be minimized.
    c. Operational:
        1) Access by existing trails resulting from traditional subsistence use would continue.
        2) Information would consist of hard copy maps available at BLM offices and shelter cabins.
        3) Signs would indicate outer boundary of CFZ.
        4) BLM staff would have minimal presence; however, monitoring may occur during hunting season.
        5) Dispersed non-commercial recreation uses would be lightly managed and without cost to the public.

16. Throughout the life of the plan and where RMAs overlap with designated ACECs, manage recreation in a manner that is consistent with protection of relevant and important values of that ACEC.

1.18 Travel and Transportation Management

1.18.1 Goals

1. Meet the minimalization criteria in 43 CFR 8342 and/or manage the transportation network to reduce fragmentation and reduce impacts to habitat.
2. Provide for traditional community access, per Alaska National Interest Lands Conservation Act requirements.
3. Support education and outreach programs that promote trail ethics, travel safety, and public land stewardship.

1.18.2 Objectives

1. Educate trail users about allowable modes of travel, designated routes, and seasons of use on BLM-managed public lands.
2. Reduce conflicts and competition between recreational OHV activities and subsistence access to resources.
3. Conduct monitoring of transportation systems to ensure resource management objectives are being met.

1.19 Areas of Critical Environmental Concern

1.19.1 Goals

1. Manage ACECs to provide special management as required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes.

1.19.2 Objectives

1. Maintain the long-term sustainability of the relevant and important values for which the ACECs are managed. There is no management common to all action alternatives for ACECs.

1.20 National Trails

1.20.1 Goals

1. The nature and purpose of the INHT (BLM 1986) is to provide the following:
    - A rich diversity of climate, terrain, scenery, wildlife, recreation, and resources largely unchanged since the days of the [gold rush] stampeders.
    - An extensive, isolated, primitive, historic landscape unmatched in the National Trail System.
    - A setting that demands user durability and skill.

- A setting in which contemporary users can duplicate the experience and challenge of yesteryear.
- Per the INHT nature and purpose, as described by Congress in 1978:
    - Conserve today's INHT and adjacent landscape so users can experience the wildland setting and challenges faced by gold rush trail travelers and mushers a century ago.
    - Provide users with opportunities to view, experience, and appreciate examples of historic human use of the resources along the INHT demonstrating how these resources are being managed: (1) in harmony with the environment, (2) in support of the nature and purposes for which the trail was designated, and (3) without detracting from the overall experience of the trail.
    - Maintain the INHT National Trail Management Corridor (NTMC) to provide high-quality winter, trail-based use opportunities. Conserve natural, historic, and cultural resources along the trail.
    - Use of the INHT would minimally affect adjacent natural and cultural environments and harmonize with the management objectives of land and resource uses which are, or may be, occurring on the lands through which the trail passes.
    - Preserve and protect the historical remains and historical settings of INHTs and associated historic sites for public use and enjoyment.

2. Provide opportunities for users to meet subsistence needs and outdoor recreation outcomes and promote the preservation of public access and enjoyment of the open air, outdoor areas, and historic resources of the nation, in a manner that supports the nature and purpose of the Congressionally designated trails.
3. The proposed INHT NTMC was determined with the goal of harmonizing with and complementing any established multiple use plans for the areas where it is located. In selecting the National Trail System Act (NTSA) ROWs and the NTMC, full consideration shall be given to minimizing any potential adverse impacts upon adjacent landowners and users or their operations.

1.20.2 Objectives

1. Inventory, maintain, and enhance the significant qualities of high-potential INHT segments and sites as defined in the NTSA.
2. Avoid adverse effects to intact INHT segments, their settings, and associated sites and interference with the resources associated with the nature and purpose of the trail.
3. Protect historic viewshed, trail traces, roadhouses, landmarks, artifacts, and other remains associated with the INHT to enhance historical research and public use and enjoyment.
4. Provide for no net loss of protected national trail resources on BLM-managed public lands.
5. Manage the landscape (viewshed) associated with the INHT so that visitors continue to get a sense of how this landscape was viewed and how it influenced historic users of the trail (i.e., maintain integrity of location, setting, feeling, and association as described in National Register Bulletin 15 (NPS 1990).
6. Work with adjacent landowners to maintain the continuity of the trail across all land ownership as identified in the INHT Comprehensive Management Plan (BLM 1986).

7. Manage the Rohn Site as part of the INHT NTMC for specific uses, to support trail-history-related events, and affected stakeholders.
8. Manage the INHT NTMC (and the Iditarod-Anvik INHT Connecting/Side Trail on BLM lands) as an SRMA to achieve the outcomes-focused recreation objectives established in Appendix M of the Draft RMP/EIS.
9. Manage the INHT to increase awareness, understanding, and foster a sense of stewardship for the INHT, which safeguards historic trail-associated cultural and natural resources.
10. Ensure visitors are not exposed to unhealthy or unsafe human-created conditions (defined by a repeat incident in the same year, of the same type, in the same location, due to the same cause).
11. Fulfill the NTSA, BLM Manual 6250–National Scenic and Historic Trail Administration (Public), BLM Manual 6280–Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation (Public), National Register Bulletin 15 (NPS 1990), the INHT Comprehensive Management Plan (BLM 1986), and others, as applicable.
12. Manage conflict between recreation participants and: (1) other resource and/or resource uses, sufficient to enable the achievement of identified land use plan goals, objectives, and actions; (2) private land owners sufficient to curb illegal trespass and property damage; and (3) other recreation participants sufficient to maintain a diversity of recreation activity participation.

1.21 Wild and Scenic Rivers

1.21.1 Goals

1. WSRs within the planning area will be managed in such a manner so as to maintain – throughout the life of the plan – all outstanding remarkable values (ORVs) identified during the BSWI WSR eligibility inventory (BLM 2018).
2. Apply relevant BMPs identified for other resources in the designated WSR corridor.

1.21.2 Objectives

1. Maintain and enhance the ORVs throughout the life of the plan by authorizing uses that are compatible with the river values.
2. Maintain the aesthetic values of the WSR through bank stabilization and effective management of human activities.
3. Within 5 years of the signing of the Record of Decision, the BLM will have established resource indicators and thresholds to determine impacts and modify use levels as necessary to maintain ORVs for designated WSRs.

1.22 Hazardous Materials and Health and Human Safety

1.22.1 Goals

1. Require that the use of hazardous materials within the planning area is managed in accordance with all applicable federal, State, and local laws and regulations.

1.22.2 Objectives

1. Prevent new spills from occurring and prevent the creation of new contaminated sites.
2. Successfully clean up all contamination that occurs, or is discovered from past land use, to a degree that meets regulatory requirements and BLM future land uses.

1.23 Support for BSWI Communities

1.23.1 Goals

1. Sustain subsistence resources and access to resources on BLM-managed public lands.
2. Support village efforts to develop local economies.
3. Support increased collaboration and coordination with villages.

1.23.2 Objectives

1. When providing and managing recreation opportunities and visitor services, increase and improve collaboration with community networks of service providers.
2. In managing the INHT NTMC, work to minimize (to the extent possible) the level of conflict between recreation participants and other resource and/or resource uses, including subsistence.
3. Consider transferring lands out of federal ownership or acquire non-federal lands where needed to accomplish resource goals and objectives, improve administration of public lands, or meet essential community needs. Meet public needs for use authorizations such as ROWs, alternative energy sources, and permits while minimizing, to the extent possible, adverse impacts to resource values.
4. To the extent allowed by planning area mineral resources, support mineral exploration and development in part to meet local energy needs, provide stable employment, and provide economic opportunities while ensuring the long-term health and diversity of the land.
5. Increase knowledge of native cultures and ways of life through proactive surveys, preservation of oral histories, curation, and other appropriate methods available.
6. Expand the system of ACECs to provide increased protection for non-market resources and subsistence uses, especially those having cultural and fish and wildlife values.

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Appendix H: Climate Change and Adaptive Management

Appendix H. Climate Change and Adaptive Management

Resources and Resource Uses

1. Soils

Warmer air temperatures and subsequent rise in soil temperature are not likely to substantially alter soil-forming processes. However, a rise in soil temperature may affect nutrient cycling and evapotranspiration (drier or wetter soil conditions). Decomposition of plant material has historically been very slow in the planning area. However, as soil temperatures rise and permafrost thaws, decomposition rates will increase which will alter nutrient cycles affecting plant communities and other ecosystem functions. Plant root growth in permafrost areas is limited to the active soil layer (the topmost soil horizons that thaw every summer). As soil temperatures rise, the active layer deepens, and that soil becomes destabilized, leading to erosion and land subsidence. Structurally, the increase in active layer depth is expected to have a negative effect on the ability of soil to carry loads, such as roads and structures. Monitoring of climate change impacts on vegetation shifts, changes to permafrost, and resulting changes in soil erodibility would be used to prioritize the management actions listed above, and, if necessary, mandate measures to protect soils from surface-disturbing Bureau of Land Management (BLM)-permitted activities and casual use. To the extent possible, the BLM would conduct and/or require insulation of disturbed permafrost areas to prevent additional permafrost thaw and associated possible subsidence, by restoring the natural ground surface thermal regime, particularly on steep erosion-prone slopes.

2. Water Resources and Fisheries

According to the Scenarios Network for Alaska and Arctic Planning (SNAP), 50-year modeled surface water temperature may increase in some watersheds or decrease in other areas where more ice melt is occurring. Other potential changes could include:

- Water flow increase or decrease
- Sedimentation from melting permafrost and changes related to peak-flow events
- Lake bed drying
- Invasive species introduction due to changing condition
- Changes to the occurrence, quantity, distribution, movement, and quality of water affecting fish production and survival

A combination of continued monitoring (including Assessment, Inventory, and Monitoring [AIM]) and projected climate change modeling through SNAP would be used to adaptively shift the fisheries management described above to high-priority watersheds supporting significant fisheries that are at risk due to climate change or a combination of climate change and resource use.

3. Vegetation

A combination of AIM monitoring, use of State and transition models from approved Ecological Site Description System (ESDS) and Rapid Ecoregional Assessments would be used to evaluate potential changes in vegetative communities and to adjust the identified management actions to shift with any changes in vegetation cover type.

4. Wildlife

The direct connection between vegetation cover types and wildlife habitat would allow the adaptive management described for vegetation cover types to be used to guide adaptive shifts in habitat management for wildlife. This adaptive management would also include the ability to shift proposed timing restrictions to adapt to changes around critical periods, such as nesting or calving, which may result from climate change. For example, nesting seasons may start earlier compared to historic seasons because earlier spring snow and ice breakup and earlier availability of prey.

5. Nonnative Invasive Species

Continuing monitoring of locations and extent of nonnative invasive species infestations would be used to shift management priorities and eradication efforts to target changes caused by climate change.

6. Wildland Fire

The interactions between climate change, wildland fire, and resource objectives would be monitored and measured. Fire management strategies and practices would be adapted as necessary to ensure resource objectives for vegetation, air quality, wildlife, and forestry, paleontological resources, water, and fisheries continue to be met. Investments in science, research, and monitoring would be used to understand how ecosystems respond to environmental changes and to develop mitigations.

7. Cultural Resources

The following indicators of risk to cultural resources would be monitored as part of other resource programs: permafrost melting, increased erosion (river and coastal), and increased wildland fire activity. Based on this monitoring, management would be shifted to prioritize surveying and stabilizations of significant cultural resources at risk.

8. Paleontological Resources

The BLM would monitor potential risks of climate change to geologic formations with high likelihood of having significant paleontological resources and prioritize those areas for survey. If accelerated soil erosion from climate change or other processes is damaging significant paleontological resources, the BLM would work with partners (if applicable) in salvaging specimens and, if possible, reducing further threat to other specimens at the site.

9. Visual Resources Management

Evidence of climate change trends affecting visual resources has not been analyzed and documented in the planning area. However, the warming trend experienced over the last 50 years has resulted in substantial increases in wildland fire, resulting in large burn areas that are slow to recover. These burn areas affect, and will continue to affect, visual resources by creating readily apparent contrast in vegetation cover until revegetation occurs.

By the 2060s, it is forecast that erosion caused through thermokarsts or other permafrost slumping and thaw may affect viewsheds near large rivers and coastlines. If climate warming or any subsequent effect of warming promotes human development in the planning area, that could also affect visual resources.

10. Lands with Wilderness Characteristics

Evidence of climate change trends affecting lands with wilderness characteristics have not been analyzed and documented in the planning area. The warming trend experienced over the last 50 years has not been shown to be a cause in altering the quality of wilderness character in any regions of the planning area.

A reinventory of project areas for wilderness characteristics would occur whenever projects are triggered for adaptive management to climate change. Adjustment of the administrative boundary of areas allocated to protect wilderness characteristics would be undertaken if necessary during these adaptive management actions.

11. Forestry and Woodland Products

Monitoring of vegetation and shifts to climate change would inform shifts in location and priority for managing forestry and woodland resources.

12. Grazing

Vegetation monitoring and modeling would be combined with monitoring of rangeland health in grazed areas to determine appropriate adaptive shifts in grazing required to address potential climate change effects. These could include changes in caribou migration and changes in forage type, coverage, and location.

13. Locatable and Salable Minerals

The BLM would continue working with permittees to monitor climate change impacts on mining and would adjust individual plan requirements, as needed, to address any such impacts. These could include (but are not limited to) the following:

- Changes in requirements for mine operations to address potential changes in water availability due to climate change (e.g., requirements for dust abatement, stringent control of hazardous materials at mine site, differing requirements for tailings ponds and dams).
- Changes in permafrost conditions and how that may change requirements related to tailings ponds/dams, overland access, and available placer resources.
- Expanded exploration potential for resources at recently exposed areas from retreating glaciers.
- Use of seed mixtures that provide vegetation cover types that are resilient to potential climate changes. This may involve alterations in desired future vegetation conditions that emphasize resiliency, ecosystem function and comparable habitat value over restoration to native species only.

14. Leasable Minerals

The BLM has designated the bulk of the planning area open to leasable exploration, even though the demand does not currently exist. This is to allow flexibility to adjust to increased accessibility or increased demand by local communities as a result of climate change.

15. Lands and Realty

As required based on changes in climate, the BLM would consider providing opportunities for community relocation using right-of-way grants, permitting, exchanges, Recreation and Public Purposes

Act, leases, or other appropriate permitting actions as determined mutually beneficial for the community and the long-term sustainability of BLM-managed public lands.

16. Recreation and Visitor Services

Climate change has increased interest in glacier viewing due to marked recession of many glaciers in Alaska. The planning area does not contain glaciers, but increased tourism from this associated activity in other parts of the state could raise visitation with other recreation opportunities within the planning area.

Summer recreation activities such as hunting and camping have increased over the last 50 years. Some of this increase may be attributed to an increase in snow-free days, although this increase could also be attributed to improved modes of access (e.g., aircraft, off-highway vehicles [OHVs]) (ADNR 2016). However, access for recreation use in the roadless planning area requires a commitment of resources substantially greater than recreation access in roaded areas. Access for summer recreation predominantly relies either on small aircraft or small boats. Overland access for summer recreation is very difficult due to the predominance of impassable wetlands. Access for winter recreation is typically by small aircraft and snowmobiles. The frequency of participation in recreation activities that do not involve resource consumption (e.g., hunting, fishing, berry picking) is extremely low. The largest number of "non-consumptive" recreationists may involve persons travelling with or spectating long-distance winter overland races such as the Iditarod Sled Dog Race or Iron Dog Snowmobile Race.

Conversely, winter recreation activity use levels, such as snowmobiling on the Iditarod National Historic Trail (INHT), may have decreased within the last 50 years due to fewer days with adequate snow cover. In general, summer recreation levels could increase, and winter recreation levels could decrease with the expected lengthening of the summer season and warmer average annual temperatures. However, increasing fire frequency could reduce visitation to areas impacted by smoke or recently burned areas. The traveling season on the INHT could shorten due to predicted wintertime warming.

Travel management actions identified along the INHT and Unalakleet Wild River corridors are designed to address climate change impacts.

17. Travel and Transportation Management

Travel and transportation are limited by seasonal changes in ground cover (e.g., tundra, wetland, snow). Management will be defined to allow flexibility for adapting to seasonal conditions and any subsequent new technology to overcome changing conditions. Additionally, travel limitations related to sensitive vegetation cover types and habitats would allow flexibility in travel management to changes in the location of these sensitive habitats due to climate change.

In terms of adaptive management, if resource monitoring required under the Resource Management Plan indicates substantial travel-related disturbance to these resources, implementation level travel management planning would be conducted at a geographic scale appropriate to address those concerns.

18. Areas of Critical Environmental Concern

Potential changes in Areas of Critical Environmental Concern (ACECs) and resulting adaptive management are represented by those changes and management described for other resources that are found in the ACECs, including Vegetation, Cultural Resources, Wildlife, and Water Resources and Fisheries.

19. National Trails

The BLM has developed adaptive management that allows flexibility in seasonal limitations on OHV use to ensure that this type of use occurs only when conditions are appropriate to prevent impacts. Because these seasonal limitations are based on site condition, not specific dates, they are flexible and responsive to climate change. Key features along the INHT are also prioritized for fuels reduction and fire management to reduce risks associated with potential increased fire intensity and frequency due to climate change. Additionally, proposed trail management includes the monitoring of shifting resource condition with resulting changes in allowed uses to minimize that damage.

Based on potential changes in climate, the BLM would promulgate supplementary rules, consistent with the INHT's comprehensive management plan, to implement time-of-use rules related to winter use beginning and ending dates that reflects the actual yearly beginning and ending dates of sufficient snow cover.

20. Wild and Scenic Rivers

Limitations on OHV use in the wild and scenic river corridors were developed to be responsive to conditions, not fixed dates. This allows flexibility for allowable OHV use to adjust with changing climatic conditions.

21. Hazardous Materials and Health and Human Safety

The management criteria for prioritizing cleanup of hazardous materials and for storing and using hazardous material are based on material and site condition, and therefore would be adaptive responsive to any changes associated with climate change.

22. Support for BSWI Communities

Communities in rural Alaska and the Arctic are especially vulnerable to climate change (Arctic Council 2013). Regular monitoring and collaboration with rural communities will provide a mechanism for the BLM to be responsive to community needs in the face of climate change. Additionally, adaptive management in other resource areas such as Vegetation, Wildlife, Cultural, and Transportation will assist in continuing to provide for long-term sustainability and access to resources upon which these communities depend and that are part of their cultural heritage.

References

ADNR (Alaska Department of Environmental Conservation). 2016. North to the future: Alaska's Statewide Comprehensive Outdoor Recreation Plan (SCORP): 2016–2021.

Arctic Council. 2013. Arctic Resilience Interim Report 2013. Stockholm Environment Institute and Stockholm Resilience Centre, Stockholm.

Appendix I: Mitigation Standards

Appendix I: Mitigation Standards

1. Air and Air Quality-Related Values

Permitted activities would not have a no-net-loss[1] goal with regards to air quality. However, permittees would be required to mitigate to a level that meets requirements of the Federal Land Policy and Management Act (FLPMA), as well as applicable National Ambient Air Quality Standards and other applicable standards that provide for human health and safety and meet visual resource management (VRM) requirements.

2. Soils

Permitted activities would not have a no-net-loss mitigation goal with regards to soil resources. However, actions would be required to meet the requirements of FLPMA as well as to reclaim per soil and vegetation reclamation, riparian and stream disturbance/reclamation, and fisheries rehabilitation requirements described for Locatable and Salable Minerals in the Resource Management Plan (RMP). Permittees would also be required to mitigate to a level that meets all other applicable requirements mandated in the RMP and ensures the long-term sustainability of watershed health and function.

3. Water Resources and Fisheries

Permitted activities impacting Essential Fish Habitat (EFH) within all identified high-value watersheds (HVWs) would have a goal of no net loss. For EFH, the performance standard for no net loss would restore riparian function, assure stable channel form, and progress toward higher Stream Functional Objectives. Activities would achieve this performance standard through implementation of the mitigation hierarchy: avoidance of impacts first, minimization of impacts that cannot be avoided, and if there are residual impacts after these two steps, compensation for those remaining impacts (BLM Mitigation Handbook, H-1794-1.) This required mitigation (avoidance, minimization) would be determined through site-specific National Environmental Policy Act (NEPA) analysis at the project implementation/ permitting level. However, potential recovery opportunities to offset net loss include the following:

- Restoration of identified Restoration Watersheds. These would include watersheds prioritized for restoration with medium-high or high aquatic resource value and low watershed condition.
- All Notice and Plan operations with stream disturbance require reclamation to restore riparian function, assure stable channel form, and progress toward higher Stream Functional Objectives

Additionally, permitted activities with the potential to impact community water supply water quality would have a goal of no net loss. The performance standard for no net loss would be maintenance of applicable water quality standards for safe drinking water. The required mitigation (including avoidance and minimization) to meet this performance standard would be determined through site-specific NEPA analysis and project implementation/permitting level. Potential recovery opportunities to offset net loss include the following:

[1] "No net loss" is defined as when mitigation results in no negative change to baseline conditions (e.g., impacts are fully offset or balanced) (Bureau of Land Management [BLM] Mitigation Handbook H-1794-1).

- Ensure water quality complies with federal and State water quality standards and achieves, or is making significant progress toward achieving, established BLM-management objectives, such as meeting wildlife needs (BLM Alaska Land Health Standards) by adopting federal and State water quality standards as specific BLM objectives for permitted activities.
- Reverse declines in the quality and quantity of aquatic habitats to ensure improvement of watershed health toward potential natural conditions (PNCs).
- Work to restore 303(d)-listed streams or other streams impacted from past land uses in the planning area to improve conditions toward PNC.
- Prioritize application to the State of Alaska for water rights to preserve required flows in the Nulato watershed, HVWs, Areas of Critical Environmental Concern (ACECs), and wild and scenic river (WSR) corridors. The BLM would pursue instream flow reservations of water for the following rivers, and may prioritize additional rivers in HVWs or ACECs:
    - Anvik River
    - Big River
    - Gisasa River
    - Kateel River
    - North River
    - Swift River
    - Unalakleet River
- The purpose of pursuing these water rights may include the following:
    - Maintain year-round flows necessary to sustain fish and wildlife habitat, migration, and propagation within and adjacent to said river.
    - Maintain or improve recreational opportunities.
    - Meet navigation and transportation goals.
    - Meet sanitary and water quality goals.

4. Vegetation

Permitted activities affecting special status species (SSS) flora and rare ecosystems would have a no-net-loss mitigation goal. For SSS flora and rare ecosystems, the no-net-loss goal performance standard would be maintenance of those populations and ecosystems at the same level of population size, health, and community diversity as before the action was taken. Activities would achieve this performance standard through implementation of the mitigation hierarchy; avoidance of impacts and then minimization of remaining impacts (BLM IM 2019-018). The required mitigation (avoidance and minimization) to meet this performance standard would be determined through site-specific NEPA analysis at the project implementation/permitting level.

5. Wildlife

Permitted activities affecting wildlife habitat would not have a no-net-loss mitigation goal. However, permittees would have to mitigate as necessary to meet the requirements of FLPMA as well as any mitigation requirements identified in the revised RMP.

6. Nonnative Invasive Species

Permitted activities would not have a no-net-loss mitigation goal with regard to nonnative invasive species (NNIS). However, permittees would be required to mitigate as required by FLPMA, and to a level that meets all other applicable requirements mandated in the RMP, thereby minimizing the extent of NNIS species to the maximum extent possible.

7. Wildland Fire

Permitted activities would not have a no-net-loss mitigation goal with fire management actions. However, activities that would increase the probability of human-caused ignitions or require additional protection measures would require mitigation as necessary to meet the requirements of FLPMA as well as applicable requirements mandated in the RMP to ensure the long-term sustainability of resources in the planning area while prioritizing protection of human lives and property. Specific mitigation requirements would be addressed during the NEPA process for project permitting. Examples include the following:

- Roads (potential increase in human-caused ignitions would require mitigation through fuels treatments)
- Powerlines (potential increase in human-caused ignitions would require mitigation through fuels treatments)
- Mining camps (potential increase in human-caused ignitions and additional protection measures would require mitigation through fuels treatments)

8. Cultural Resources

Permitted activities affecting culturally significant areas would have a no-net-loss mitigation goal. For cultural resources, the no-net-loss performance standard and the determination of whether it meets that standard would be made on a case-by-case basis through project-specific Section 106 consultation with the State Historic Preservation Office (SHPO) at the project implementation/permitting level. Activities would achieve this performance standard through implementation of the mitigation hierarchy: avoidance of impacts first and then minimization of impacts that cannot be avoided (BLM IM 2019-018). This required mitigation (avoidance and minimization) would also be determined through the Section 106 consultation process at the project implementation/permitting level.

9. Paleontological Resources

Permitted activities would not be required to meet a net gain or no-net-loss mitigation standard with regards to paleontological resources. However, permittees would be required to mitigate to a level that meets the requirements of FLPMA, as well as all other applicable requirements mandated in the RMP, and ensures the long-term preservation of paleontological resources in the planning area.

10. Visual Resources Management

Permitted activities would not be required to meet a net gain or no-net-loss mitigation goal with regard to visual resources. However, permittees would be required to mitigate to a level that meets the requirements of FLPMA and all other applicable requirements mandated in the RMP and, specifically, is consistent with VRM requirements.

11. Lands with Wilderness Characteristics

Permitted activities would not be required to meet a net gain or no-net-loss mitigation standard with regards to mitigating impacts to lands with wilderness characteristics. Permittees would, however, be required to mitigate to a standard that meets the requirements of FLPMA and does not adversely impact those wilderness characteristics for lands that the RMP determines will be managed for wilderness characteristics as a priority. For those lands where the BLM had determined it will not manage for wilderness characteristics as priority, permittees would still be required to mitigate to a level that meets all other applicable requirements mandated in the RMP. These RMP mitigations would provide a measure of protection for wilderness characteristics present on these lands.

12. Forestry and Woodland Products

Permitted activities would not be required to meet a net gain or no-net-loss mitigation standard with regards to forestry and woodland products. However, permittees would be required to mitigate to a level that meets the requirements of FLPMA, as well as all other applicable requirements mandated in the RMP, and ensures the long-term sustainability of resources supporting woodland harvest areas.

13. Grazing

Permitted activities would not be required to meet a net gain or no-net-loss mitigation standard with regards to grazing. However, permittees would be required to manage grazing such that it is compliant with the requirements of FLPMA, BLM Alaska Land Health Standards, and any other promulgated range health standards. They would also have to manage at a level that meets all other applicable requirements mandated in the RMP.

14. Locatable and Salable Minerals

Permitted activities would not be required to meet a net gain or no-net-loss mitigation standard with regards to locatable and salable mineral development. However, permittees would be required to mitigate as necessary to meet the requirements of FLPMA. Additionally, they would be required to reclaim per soil and vegetation reclamation and riparian and stream disturbance/reclamation and fisheries rehabilitation requirements described for Locatable and Salable Minerals in the revised RMP. They would also be required to mitigate to a level that ensures no unnecessary or undue degradation as mandated by 43 Code of Federal Regulations (CFR) 3809 and 43 CFR 3715, or 43 CFR 3600. Lastly, per performance standards in 43 CFR 3809, permitted locatable operations would be required that meet all other applicable requirements mandated in the RMP.

15. Leasable Minerals

Permitted leasable mineral development would not be required to meet a net gain or no-net-loss mitigation standard. However, permittees would be required to mitigate to a level that meets the requirements of FLPMA, as well as all applicable requirements mandated in the RMP, and any stipulations and requirements through their respective mineral leases.

16. Lands and Realty

Permitted land and realty activities would not be required to meet a net gain or no-net-loss mitigation standard. However, permittees would be required to comply with FLPMA and the Alaska National

Interest Lands Conservation Act (ANILCA) and meet all other applicable requirements mandated in the RMP.

17. Recreation and Visitor Services

Permitted recreational activities would not be required to meet a net gain or no-net-loss mitigation standard. Permittees would be required to mitigate to a level that meets the requirements of FLPMA, as well as all applicable requirements mandated in the RMP, ensures long-term resource sustainability, and provides for human health and safety.

18. Travel and Transportation Management

Travel and transportation activities would not be required to meet a no-net-loss or net gain mitigation standard. Permittees would be required to mitigate to a standard that meets the requirements of FLPMA, all applicable requirements from the RMP, complies with ANILCA, maintains long-term resource sustainability, and ensures public health and safety.

19. Areas of Critical Environmental Concern

Any permitted development affecting EFH in the Sheefish or Swift River Whitefish Spawning ACECs would have a no-net-loss mitigation goal. For EFH in these ACECs, the performance standard for no net loss would be geomorphic stability with adequate floodplain vegetation to dissipate flood energy (BLM Surface Management Handbook H-3809-1) with an upward trend. Activities would achieve this performance standard through implementation of the mitigation hierarchy; avoidance of impacts first, minimization of impacts that cannot be avoided, and if there are residual impacts after these two steps, compensation for those remaining impacts (BLM IM 2019-018). This required mitigation (avoidance and minimization) would be determined through site-specific NEPA at the project implementation/ permitting level. Potential recovery opportunities to offset net loss include those identified for EFH in HVWs in the Water Resources and Fisheries section of the revised RMP.

20. National Trails

Permitted development affecting intact Iditarod National Historic Trail (INHT) segments, their settings, and associated sites, or the resources associated with the nature and purpose of the INHT would have a no-net-loss goal. For the INHT, the no-net loss performance standard and the determination of whether a project meets that standard would be made on a case-by-case basis through project-specific NEPA analysis and, if necessary, Section 106 consultation with the SHPO at the project implementation/permitting level. Activities would achieve the identified performance standard through implementation of the mitigation hierarchy; avoidance of impacts first and then minimization of impacts that cannot be avoided (BLM IM 2019-018). This required mitigation (avoidance and minimization) would also be determined on a case-by-case basis through project-specific NEPA analysis, and, if necessary, the Section 106 consultation process at the project implementation/permitting level.

The BLM would continue to work with adjacent landowners to manage for a no-net-loss goal, and if possible, net gain to INHT integrity, setting, and resources for segments of the INHT that are not located on BLM-managed public lands.

21. Wild and Scenic Rivers

Permitted development affecting designated WSR corridors would not have a no-net-loss mitigation goal. However, permittees would be required to mitigate to a level that is consistent with FLPMA and with protecting and enhancing the Outstandingly Remarkable Values for which the WSR has been designated. Additionally, they would be required to mitigate to be compliant with all applicable requirements in the RMP.

22. Hazardous Materials and Health and Human Safety

Permitted development associated with hazardous materials would not have a no-net-loss mitigation goal. However, permittees would be required to mitigate to a level that meets the requirements of FLPMA and is compliant with all applicable federal, State, and local laws and regulations, as well as requirements in the RMP.

23. Support for BSWI Communities

Permitted projects with the potential to impact local rural communities would not have a no-net-loss mitigation goal. However, permittees would be required to mitigate to a level that meets the requirements of FLPMA and is compliant with ANILCA and the applicable requirements in the RMP.

Appendix J: Proposed Special Management for Areas of Critical Environmental Concern

Appendix J. Proposed Special Management for Areas of Critical Environmental Concern (ACECs)

Table 1: Areas of Critical Environmental Concern Actions by Alternative – Summary of Proposed ACECs

Alternative A	Alternative B	Alternatives C & D
Anvik Traditional Trapping Area ACEC Not managed as an ACEC.	**Anvik Traditional Trapping Area ACEC** (21,366 acres) Relevance and Importance criteria: Cultural Resources.	N/A
Anvik River ACEC (114,386 acres) Relevance and Importance criteria: Fisheries.	**Anvik River ACEC** Not managed as an ACEC. 100,948 acres within the existing Anvik River ACEC would be managed as the Anvik River Watershed ACEC. 13,438 acres within the existing Anvik River ACEC boundary would no longer be managed as an ACEC.	N/A
Anvik River Watershed ACEC Not managed as an ACEC.	**Anvik River Watershed ACEC** (248,872 acres) Relevance and Importance criteria: Fisheries. Anvik River Watershed ACEC would encompass 100,948 acres of land within the existing Anvik River Watershed.	N/A
Gisasa River ACEC (278,055 acres) Relevance and Importance criteria: Fisheries.	**Gisasa River ACEC** Same as Alternative A, but would be 278,247 acres.	N/A
Inglutalik ACEC (71,713 acres) Relevance and Importance criteria: Fisheries.	**Inglutalik ACEC** Same as Alternative A, but would be 70,891 acres.	N/A
Kateel River ACEC (568,083 acres) Relevance and Importance criteria: Fisheries.	**Kateel River ACEC** Same as Alternative A, but would be 692,659 acres.	N/A
Nulato River ACEC Not managed as an ACEC.	**Nulato River ACEC** (344,183 acres) Relevance and Importance criteria: Fisheries Nulato River ACEC would encompass 649 acres of land within the existing North River ACEC boundary and 868 acres within the existing Drainages of the Unalakleet ACEC boundary.	N/A
Shaktoolik River ACEC (192,591 acres) Relevance and Importance criteria: Fisheries.	**Shaktoolik River ACEC** Same as Alternative A, but would be 191,725 acres. Shaktoolik River ACEC would encompass 1,621 acres of land within the existing North River ACEC boundary.	N/A
Sheefish ACEC Not managed as an ACEC.	**Sheefish ACEC** (696,902 acres) Relevance and Importance criteria: Cultural Resources, Fisheries.	N/A
Swift River Whitefish Spawning ACEC Not managed as an ACEC.	**Swift River Whitefish Spawning ACEC** (220,032 acres) Relevance and Importance criteria: Fisheries.	N/A
Tagagawik River ACEC Not managed as an ACEC.	**Tagagawik River ACEC** (301,044 acres) Relevance and Importance criteria: Cultural Resources.	N/A

Table 1: Areas of Critical Environmental Concern Actions by Alternative – Summary of Proposed ACECs

Alternative A	Alternative B	Alternatives C & D
Ungalik River ACEC (112,719 acres) Relevance and Importance criteria: Fisheries.	**Ungalik River ACEC** Same as Alternative A, but would be 113,455 acres.	N/A
North River ACEC (132,200 acres) Relevance and Importance criteria: Fisheries.	**North River ACEC** Not managed as an ACEC. 67,316 acres within the existing North River ACEC would be managed as part of the Nulato River ACEC, Shaktoolik ACEC, and Unalakleet River Watershed ACEC. 64,885 acres within the existing North River ACEC boundary would no longer be managed as an ACEC.	N/A
Drainages of the Unalakleet ACEC (403,378 acres)	**Drainages of the Unalakleet ACEC** Not managed as an ACEC. 300,836 acres within the existing Drainages of the Unalakleet ACEC would be managed as part of the Nulato River ACEC and Unalakleet River Watershed ACEC. 102,542 acres within the existing Drainages of the Unalakleet ACEC boundary would no longer be managed as an ACEC.	N/A
Unalakleet River Watershed ACEC Not managed as an ACEC.	**Unalakleet River Watershed ACEC** (733,995 acres) Relevance and Importance criteria: Cultural Resources, Fisheries. Unalakleet River Watershed ACEC would encompass 299,968 acres of land within the existing Drainages of the Unalakleet ACEC boundary and 65,046 acres within the existing North River ACEC boundary.	N/A
Box River Treeline RNA (13,592 acres) Relevance and Importance criteria: Not found to meet criteria.	**Box River Treeline RNA** Not managed as an ACEC.	N/A
Peregrine Falcon Nesting Habitat ACEC (6,354 acres) Relevance and Importance criteria: Not found to meet criteria.	**Peregrine Falcon Nesting Habitat ACEC** Not managed as an ACEC.	N/A
Kuskokwim River Raptor Nesting Habitat ACEC (4,896 acres) Relevance and Importance criteria: Not found to meet criteria.	**Kuskokwim River Raptor Nesting Habitat ACEC** Not managed as an ACEC.	N/A
Total ACEC Acreage (percentage of planning area) by Alternative A 1,884,376 acres (14%)	**Total ACEC Acreage (percentage of planning area) by Alternative B** 3,913,372 acres (29%)	N/A

Table 2: Areas of Critical Environmental Concern Actions by Alternative – Anvik Traditional Trapping Area ACEC

Alternative A	Alternative B	Alternatives C & D
Anvik Traditional Trapping Area ACEC Not managed as an ACEC.	**Anvik Traditional Trapping Area ACEC** ACEC Size: 21,366 acres.	N/A
Cultural Resources Management Decisions No management direction identified.	**Cultural Resources Management Decisions** No surface occupancy (NSO) for any externally proposed structures (e.g., cell towers, cabins).	N/A
Forestry and Woodlands Decisions No management direction identified.	**Forestry and Woodlands Decisions** Closed to commercial woodland harvest. Non-subsistence house log harvest prohibited.	N/A
Lands and Realty Decisions The nominated Anvik Traditional Trapping Area ACEC occurs within lands withdrawn by Public Land Order (PLO) 5184. PLO 5184 withdrew lands (subject to valid existing rights) withdrawn by section 11 of the Alaska Native Claims Settlement Act (ANCSA) from all forms of appropriation under the public land laws and from location and entry under the mining laws (which includes locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. PLO 5184 also withdrew the lands from selections by the State of Alaska under the Alaska Statehood Act until 1975. The lands were reserved for study and review by the Secretary of the Interior for the purpose of the classification or reclassification of any lands not conveyed pursuant to section 14 of the ANCSA. PLO 5184 also withdrew lands by section 11 of ANCSA lying between 58 degrees north and 64 degrees north latitude and 161 degrees west longitude not withdrawn as any part of the National Wildlife Refuge and made these lands subject to valid existing rights from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and entry under the mining laws and from leasing under the Mineral Leasing Act. The lands were reserved for study and review by the Secretary of the Interior for the purpose of the classification or reclassification of any lands not conveyed pursuant to section 14 of the ancsa. PLO 5184 also allowed the Secretary to administer the lands under applicable laws and regulations and granted the authority to enter contracts and to grant leases, permits, rights-of-way (ROWS), or easements. The lands are currently managed under the Southwest Planning Area Management Framework Plan (SWMFP) (Bureau of Land Management [BLM] 1981) and are open on a case-by-case basis to leases, permits, ROWS, and easements.	**Lands and Realty Decisions** ROW avoidance area.	N/A

Table 2: Areas of Critical Environmental Concern Actions by Alternative – Anvik Traditional Trapping Area ACEC

Alternative A	Alternative B	Alternatives C & D
Minerals Decisions No management direction identified.	**Minerals Decisions** • Closed to salable. • Closed to leasable. • Withdrawn from locatable mineral entry (PLO 5180, currently open to metalliferous) If the recommended locatable withdrawal is not approved, locatable development would comply with all other management under this alternative. All reclamation must result in the rehabilitation of fisheries and wildlife habitats. The rehabilitation of fisheries habitat is defined as a geomorphically stable channel (i.e., functioning conditions for lateral stability, bedform diversity, and floodplain connectivity [as defined by Harman et al. 2012 or Assessment, Inventory, and Monitoring–National Aquatic Monitoring Framework {AIM-NAMF} datasets] and sufficient floodplain roughness and riparian vegetation to dissipate stream energy and minimize erosion. Baseline hydrological data that characterizes seasonal flow pattern and discharge and riparian vegetation condition would be required from the operator to establish the baseline for reclamation/rehabilitation purposes. The BLM would be available to advise operators on the exact type of baseline data and detailed needed to meet this requirement.	N/A
Recreation Decisions No management direction identified.	**Recreation Decisions** Any special recreation permits issued within the ACEC would require that human waste from those activities be compatible with Alaska Department of Environmental Conservation (ADEC) Temporary Camp Practices and/or BLM permit conditions. If no facilities are available, waste will would be contained and removed.	N/A

Table 2: Areas of Critical Environmental Concern Actions by Alternative – Anvik Traditional Trapping Area ACEC

Alternative A	Alternative B	Alternatives C & D
Transportation and Travel Management Decisions No management direction identified.	**Transportation and Travel Management Decisions** (These prescriptions are consistent with criteria for designation found in 43 Code of Federal Regulations [CFR] 8342.1(a), (b), and (d) and are considered interim until the time of completion of a travel management plan for the areas in question.) Summer subsistence use would be limited to all-terrain vehicles (ATVs) and utility terrain vehicles (UTVs). Summer casual would be limited to existing roads, primitive roads and trails (as shown in existing BLM route inventory) by ATVs only. Winter subsistence and casual use would allow cross-country travel by snowmobiles. No future construction or designation of routes within the 100-year floodplain of surface waters unless it can be demonstrated through design, route placement, and alignment that the route will not measurably contribute to sediment delivery to the adjacent surface waters.	N/A
Visual Resources Management Decisions No management direction identified.	**Visual Resources Management Decisions** Managed as VRM Class II.	N/A

Table 3: Areas of Critical Environmental Concern Actions by Alternative – Anvik River Watershed ACEC

Alternative A	Alternative B	Alternatives C & D
No Anvik River Watershed ACEC under Alternative A. Instead, the existing 114,386-acre Anvik River ACEC would be maintained.	ACEC Size: 248,872 acres	N/A
Fisheries Management Decisions The BLM submitted an application for reservation of water to the State of Alaska Department of Natural Resources (DNR) on September 14, 2007 (DNR file application LAS 27140) for the middle segment of the Anvik River, from the confluence of Beaver Creek downstream to the border of BLM-managed land (ADNR 2007). The purpose of this reservation is to maintain year-round flows necessary to sustain fish and wildlife habitat, migration, and propagation within and adjacent to the Anvik River. Unregulated and free-flowing waters of the Anvik River are necessary components of a healthy riparian and in-stream ecosystem that supports a variety of species. The Alaska Department of Fish and Game (ADF&)G operates the Anvik sonar site on the Anvik River to monitor escapement of summer chum salmon to the Anvik River drainage. The Anvik is believed to be the largest producer of summer chum salmon in the Yukon River drainage (Bergstrom et al. 1998; McEwen 2011). The Alaska Board of Fisheries classified Yukon River summer chum salmon as a stock of management concern at its September 2000 work session. The Policy for the Management of Sustainable Salmon Fisheries directs ADF&G to access salmon stocks in areas addressed during the Board of Fish regulatory cycle to identify stocks of concern, and in the case of Yukon River summer chum salmon, to reassess the stock of concern status (Bergstrom et al. 2009). The Anvik sonar site on the Anvik River is used to provide timely and accurate reporting information to help Yukon River fishery managers ensure the Anvik River biological escapement goal (BEG) of 350,000 to 700,000 summer chum salmon is met (McEwen 2011). This assessment is necessary to determine if summer chum salmon abundance will meet downstream harvest and upstream escapement needs (McEwen 2011). “Since 1979, the Anvik River sonar project has been located approximately 76 km upstream of the confluence on the Anvik and Yukon Rivers, 5 km below Theodore Creek at latitude 62° 44.208’ N, longitude 160° 40.724’ W. The land is public, managed by the BLM, and leased to ADFG for public purposes until 2023” (McEwen 2011).	**Fisheries Management Decisions** Any proposal to use or develop the lands, waters, or resources within or the 100-year floodplain of active stream channels must demonstrate to the satisfaction of the Authorized Officer (AO) that such use or development: • Would not adversely alter the condition and ecological function of aquatic and riparian systems by impacting water quality, stream flow, velocity, ground water hydrology, channel connectivity, channel form, material recruitment, substrate composition, energy (food) flow, and riparian function; • Would not diminish the quality and diversity of habitats needed to sustain the production of fish and wildlife populations at their natural potential.	N/A
Forestry and Woodlands Decisions **SWMFP (BLM 1981)** F-1.1 Provide for use of forestry products throughout the planning area with priority areas opened for settlement entry.	**Forestry and Woodlands Decisions** Closed to commercial woodland harvest. Non-subsistence house log harvest prohibited.	N/A

Table 3: Areas of Critical Environmental Concern Actions by Alternative – Anvik River Watershed ACEC

Alternative A	Alternative B	Alternatives C & D
Lands and Realty Decisions The existing Anvik River ACEC (114,386 acres) occurs within lands withdrawn by PLO 5180. Portions of the ACEC are not covered by this PLO and are open to the public land laws. PLO 5180 withdrew lands (subject to valid existing rights) from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and from location and entry under the mining laws (except locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. The lands were reserved for study to determine the proper classification of the lands under Section 17(d)(1) of ANCSA. The lands are currently managed under the SWMFP (BLM 1981) and are open on a case-by-case basis to leases, permits, ROWs, and easements.	**Lands and Realty Decisions** ROW avoidance area.	N/A

Table 3: Areas of Critical Environmental Concern Actions by Alternative – Anvik River Watershed ACEC

Alternative A	Alternative B	Alternatives C & D
Minerals Decisions No current management direction with regard to mineral decisions on ACECs was identified. Minerals decisions on a case-by-case basis.	**Minerals Decisions** • Closed salable • Closed to leasable • Withdrawn from locatable mineral entry (PLO 5180, currently open to metalliferous) If the recommended locatable withdrawal is not approved, locatable development would comply with all other management under this alternative and the following management would apply (subject to valid existing rights): • Cooperate with the State of Alaska to help determine appropriate management of suction dredge mining in navigable waterways of the Anvik River. In accordance with 43 CFR 3809.201(a), the BLM may establish an agreement with the State to allow suction dredging on BLM-managed lands which will provide maximum possible coordination with the State to avoid duplication and to ensure that operators prevent unnecessary or undue degradation of public lands. As directed by 3809.201(b), the agreement must require that the State notify the BLM within 15 days of application receipt to suction dredge so that the BLM may determine if federally proposed or listed threatened or endangered species or their proposed or designated critical habitat would be affected by the proposed action and to specify any necessary mitigation measures. The use of a suction dredge within the scope and allowances of the agreement, State statute, BLM regulations, and all applicable laws need not to submit to the BLM a notice or plan of operations. Any existing or future agreements that apply regionally or statewide, that meet the requirements outlined above will be considered adequate to meet the conditions of the Bering Sea–Western Interior (BSWI) Resource Management Plan (RMP). • No suction dredging on the non-navigable waterways of the Anvik River Watershed ACEC. • All reclamation must result in the rehabilitation of fisheries and wildlife habitats. The rehabilitation of fisheries habitat is defined as a geomorphically stable channel (i.e., functioning conditions for lateral stability, bedform diversity, and floodplain connectivity (as defined by Harman et al. 2012 or AIM-NAMF datasets) and sufficient floodplain roughness and riparian vegetation to dissipate stream energy and minimize erosion. • Baseline hydrological data that characterizes seasonal flow pattern and discharge and riparian vegetation condition would be required from the operator to establish the baseline for reclamation/ rehabilitation purposes. The BLM would be available to advise operators on the exact type of baseline data and detail needed to meet this requirement.	N/A

Table 3: Areas of Critical Environmental Concern Actions by Alternative – Anvik River Watershed ACEC

Alternative A	Alternative B	Alternatives C & D
Recreation Decisions No current management direction with regard to recreation decisions on ACECs was identified. Recreation decisions on a case-by-case basis.	**Recreation Decisions** Any special recreation permits issued within the ACEC would require that human waste from those activities be compatible with ADEC Temporary Camp Practices and/or BLM permit conditions. If no facilities are available, waste will would be contained and removed.	N/A
Transportation and Travel Management Decisions No current management direction with regard to transportation and travel management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Transportation and Travel Management Decisions** (These prescriptions are consistent with criteria for designation found in 43 CFR 8342.1(a), (b), and (d) and are considered interim until the time of completion of a travel management plan for the areas in question). Summer subsistence use would be limited to ATVs and UTVs. Summer casual would be limited to existing roads, primitive roads and trails (as shown in existing BLM route inventory) by ATVs only. Winter subsistence and casual use would allow cross-country travel by snowmobiles. No future construction or designation of routes within the 100-year floodplain of surface waters unless it can be demonstrated through design, route placement, and alignment that the route will not measurably contribute to sediment delivery to the adjacent surface waters. The BLM would work in coordination with the State of Alaska to designate stream crossing routes, and these routes would be designated within the 100-year floodplain.	N/A
Visual Resources Management Decisions No current management direction with regard to visual resources management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Visual Resources Management Decisions** Managed as VRM Class III.	N/A
Water Resources Decisions **SWMFP (BLM 1981)** W-1.1: Maintain the water quality of watersheds on BLM-administered lands in compliance with the Alaska Water Quality Standards. W-2.1: Perfect legal water rights to the water resource on public lands in support of Bureau programs, and in compliance with the Alaska Water Use Act. Protect existing water rights of the United States.	**Water Resources Decisions** The existing water rights application filed with the state of Alaska DNR (File: LAS 27140; ADNR 2007) for the Anvik River will be perfected acquiring a certificate of appropriation. Further quantification and delineation of existing, and additional, reaches will be conducted, as needed, to adequately reserve monthly minimum instream flow rates to assure the protection of fish habitat, migration, and propagation within the Anvik River Watershed ACEC.	N/A

Table 4: Areas of Critical Environmental Concern Actions by Alternative – Gisasa ACEC

Alternative A	Alternative B	Alternatives C & D
ACEC Size: 278,055 acres	ACEC Size: 278,247 acres	N/A
Fisheries Management Decisions **SWMFP (BLM 1981)** WL-7.1: Consider the protection of riparian habitat in any project planned, initiated, or authorized by the BLM on public lands. Riparian habitats support a variety of fishes, game, and non-game animals important to the use or enjoyment of man. Manual requirements for riparian habitat are addressed in BLM Manual 6610. FH-1 Objective: Maintain aquatic habitat which supports populations of fish in the planning area.	**Fisheries Management Decisions** Any proposal to use or develop lands, waters, or resources within the 100-year floodplain of the banks of active stream channels must demonstrate to the satisfaction of the AO that such use or development: • Would not adversely alter the condition and ecological function of aquatic and riparian systems by impacting water quality, stream flow, velocity, ground water hydrology, channel connectivity, channel form, material recruitment, substrate composition, energy (food) flow, and riparian function; • Would not diminish the quality and diversity of habitats needed to sustain the production of fish and wildlife populations at their natural potential.	N/A
Forestry and Woodlands Decisions **SWMFP (BLM 1981)** F-1.1 Provide for use of forestry products throughout the planning area with priority areas opened for settlement entry.	**Forestry and Woodlands Decisions** Closed to commercial woodland harvest. Non-subsistence house log harvest prohibited.	N/A

Table 4: Areas of Critical Environmental Concern Actions by Alternative – Gisasa ACEC

Alternative A	Alternative B	Alternatives C & D
Lands and Realty Decisions The existing Gisasa River ACEC occurs within lands withdrawn by PLO 5173 and PLO 5180. PLO 5173 withdrew lands identified by legal description (subject to valid existing rights) from all forms of appropriation under the public land laws, including selections by the State of Alaska under the Alaska Statehood Act and from location and entry under the mining laws and from leasing under the Mineral Leasing Act. The lands were reserved for selection by village corporations. Upon conclusion of village selections, the regional corporations could select the lands under Section 12 of ANCSA. Prior to conveyances, the Secretary could administer the lands and make contracts, and to grant leases, permits, ROWs, or easements. Applications for mineral leasing would be rejected until the PLO is modified or the lands appropriately classified to permit mineral leasing. PLO 5180 withdrew lands identified by legal description (subject to valid existing rights) from all forms of appropriation under the public land laws, including selections by the State of Alaska under the Alaska Statehood Act and from location and entry under the mining laws (except locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. The lands were reserved for study to determine the proper classification of the lands under section 17(d)(1) of the ANCSA. The lands are currently managed under the 1986 Central Yukon Resource Management Plan (CYRMP) (BLM 1986a) and are open on a case-by-case basis to permits, leases, ROWs, and easements except for an identified 300-foot NSO setback zone on the Gisasa River for Federal Land Policy and Management Act (FLPMA) sales and leases.	**Lands and Realty Decisions** ROW avoidance area.	N/A

Table 4: Areas of Critical Environmental Concern Actions by Alternative – Gisasa ACEC

Alternative A	Alternative B	Alternatives C & D
Minerals Decisions Upper portion of river closed to mineral leasing and non-metalliferous mineral entry by PLO 5180. Lower portion of the river is under PLOs 5173/5184, which close lands to mineral leasing and mining. Open to mining for metalliferous minerals. Open to leases, permits, and ROWs, except possibly for lands within 300 feet of the river which the Central Yukon Record of Decision (ROD) specified as closed to sales and leases.	**Minerals Decisions** • Closed to salable • Closed to leasable • Withdrawn from locatable mineral entry (PLO 5180, currently open to metalliferous) If the recommended locatable withdrawal is not approved, locatable development would comply with all other management under this alternative and the following management would apply (subject to valid existing rights): • Cooperate with State of Alaska to help determine appropriate management of suction dredge mining in navigable waterways of the Gisasa River. In accordance with 43 CFR 3809.201(a), the BLM may establish an agreement with the State to allow suction dredging on BLM-managed lands, which will provide maximum possible coordination with the State to avoid duplication and to ensure that operators prevent unnecessary or undue degradation of public lands. As directed by 3809.201(b), the agreement must require that the State notify the BLM within 15 days of application receipt to suction dredge so that the BLM may determine if federally proposed or listed threatened or endangered species or their proposed or designated critical habitat would be affected by the proposed action and to specify any necessary mitigation measures. The use of a suction dredge within the scope and allowances of the agreement, State statute, BLM regulations, and all applicable laws need not to submit to the BLM a notice or plan of operations. Any existing or future agreements that apply regionally or statewide, that meet the requirements outlined above will be considered adequate to meet the conditions of the BSWI RMP. • No suction dredging on the non-navigable waterways of the Gisasa River ACEC. • All reclamation must result in the rehabilitation of fisheries and wildlife habitats. The rehabilitation of fisheries habitat is defined as a geomorphically stable channel (i.e., functioning conditions for lateral stability, bedform diversity, and floodplain connectivity (as defined by Harman et al. 2012 or AIM-NAMF datasets) and sufficient floodplain roughness and riparian vegetation to dissipate stream energy and minimize erosion. • Baseline hydrological data that characterizes seasonal flow pattern and discharge and riparian vegetation condition would be required from the operator to establish the baseline for reclamation/ rehabilitation purposes. The BLM would be available to advise operators on the exact type of baseline data and detailed needed to meet this requirement.	N/A

Table 4: Areas of Critical Environmental Concern Actions by Alternative – Gisasa ACEC

Alternative A	Alternative B	Alternatives C & D
Recreation Decisions No current management direction with regard to recreation decisions on ACECs was identified. Recreation decisions on a case-by-case basis.	**Recreation Decisions** Any special recreation permits issued within the ACEC would require that human waste from those activities be compatible with ADEC Temporary Camp Practices and/or BLM permit conditions. If no facilities are available, waste would be contained and removed.	N/A
Transportation and Travel Management Decisions No current management direction with regard to transportation and travel management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Transportation and Travel Management Decisions** (These prescriptions are consistent with criteria for designation found in 43 CFR 8342.1(a), (b), and (d) and are considered interim until the time of completion of a travel management plan for the areas in question.) Summer subsistence use would be limited to ATVs and UTVs. Summer casual would be limited to existing roads, primitive roads and trails (as shown in existing BLM route inventory) by ATVs only. Winter subsistence and casual use would allow cross-country travel by snowmobiles. No future construction or designation of routes within the 100-year floodplain of surface waters unless it can be demonstrated through design, route placement, and alignment that the route will not measurably contribute to sediment delivery to the adjacent surface waters. Work in coordination with the State of Alaska to designate stream crossing routes and these routes would be designated within the 100-year floodplain.	N/A
Visual Resources Management Decisions No current management direction with regard to visual resources management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Visual Resources Management Decisions** Managed as VRM Class III.	N/A
Water Resources Decisions **SWMFP (BLM 1981)** W-1.1: Maintain the water quality of watersheds on BLM-administered lands in compliance with the Alaska Water Quality Standards. W-2.1: Perfect legal water rights to the water resource on public lands in support of Bureau programs, and in compliance with the Alaska Water Use Act. Protect existing water rights of the United States.	**Water Resources Decisions** Coordinate with the U. S. Fish and Wildlife Service (USFWS) in the pursuance of instream water right with the State of Alaska to maintain minimum instream flow for the Gisasa River. Prioritize navigability determinations for the Gisasa River.	N/A

Table 5: Areas of Critical Environmental Concern Actions by Alternative – Inglutalik ACEC

Alternative A	Alternative B	Alternatives C & D
ACEC Size: 71,713 acres	ACEC Size: 70,891 acres	N/A
Fisheries Management Decisions **SWMFP (BLM 1981)** WL-7.1: Consider the protection of riparian habitat in any project planned, initiated, or authorized by the BLM on public lands. Riparian habitats support a variety of fishes, game, and non-game animals important to the use or enjoyment of man. Manual requirements for riparian habitat are addressed in BLM Manual 6610. FH-1 Objective: Maintain aquatic habitat that supports populations of fish in the planning area.	**Fisheries Management Decisions** Any proposal to use or develop lands, waters, or resources within the 100-year floodplain of the banks of active stream channels must demonstrate to the satisfaction of the AO that such use or development: • Would not adversely alter the condition and ecological function of aquatic and riparian systems by impacting water quality, stream flow, velocity, ground water hydrology, channel connectivity, channel form, material recruitment, substrate composition, energy (food) flow, and riparian function; • Would not diminish the quality and diversity of habitats needed to sustain the production of fish and wildlife populations at their natural potential.	N/A
Forestry and Woodlands Decisions **SWMFP (BLM 1981)** F-1.1 Provide for use of forestry products throughout the planning area with priority areas opened for settlement entry.	**Forestry and Woodlands Decisions** Closed to commercial woodland harvest. Non-subsistence house log harvest prohibited.	N/A
Lands and Realty Decisions The existing Inglutalik River ACECs occur within lands withdrawn by PLO 5180. PLO 5180 withdrew lands identified by legal description (subject to valid existing rights) from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and from location and entry under the mining laws (except locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. The lands were reserved for study to determine the proper classification of the lands under Section 17(d)(1) of ANCSA. The lands are currently managed under the 1986 CYRMP (BLM 1986a) and are open on a case-by-case basis to permits, leases, ROWs, and easements.	**Lands and Realty Decisions** ROW avoidance area.	N/A

Table 5: Areas of Critical Environmental Concern Actions by Alternative – Inglutalik ACEC

Alternative A	Alternative B	Alternatives C & D
Minerals Decisions Closed to mineral leasing and non-metalliferous mineral entry by PLO 5180. Open to mining for metalliferous minerals, leases, permits, and ROWs.	**Minerals Decisions** • Closed to salable • Closed to leasable • Withdrawn from locatable mineral entry (PLO 5180, currently open to metalliferous) If the recommended locatable withdrawal is not approved, locatable development would comply with all other management under this alternative and the following management would apply (subject to valid existing rights): • Cooperate with State of Alaska to help determine appropriate management of suction dredge mining in navigable waterways of the Inglutalik River. In accordance with 43 CFR 3809.201(a), the BLM may establish an agreement with the State to allow suction dredging on BLM-managed lands, which will provide maximum possible coordination with the State to avoid duplication and to ensure that operators prevent unnecessary or undue degradation of public lands. As directed by 43 CFR 3809.201(b), the agreement must require that the State notify the BLM within 15 days of application receipt to suction dredge so that the BLM may determine if federally proposed or listed threatened or endangered species or their proposed or designated critical habitat would be affected by the proposed action and to specify any necessary mitigation measures. The use of a suction dredge within the scope and allowances of the agreement, State statute, BLM regulations, and all applicable laws need not to submit to the BLM a notice or plan of operations. Any existing or future agreements that apply regionally or statewide that meet the requirements outlined above will be considered adequate to meet the conditions of the BSWI RMP. • No suction dredging on the non-navigable waterways of the Inglutalik River ACEC. • All reclamation must result in the rehabilitation of fisheries and wildlife habitats. The rehabilitation of fisheries habitat is defined as a geomorphically stable channel (i.e., functioning conditions for lateral stability, bedform diversity, and floodplain connectivity (as defined by Harman et al. 2012 or AIM-NAMF datasets) and sufficient floodplain roughness and riparian vegetation to dissipate stream energy and minimize erosion. • Baseline hydrological data that characterizes seasonal flow pattern and discharge and riparian vegetation condition would be required from the operator to establish the baseline for reclamation/rehabilitation purposes. The BLM would be available to advise operators on the exact type of baseline data and detailed needed to meet this requirement.	N/A

Table 5: Areas of Critical Environmental Concern Actions by Alternative – Inglutalik ACEC

Alternative A	Alternative B	Alternatives C & D
Recreation Decisions No current management direction with regard to recreation decisions on ACECs was identified. Recreation decisions on a case-by-case basis.	**Recreation Decisions** Any special recreation permits issued within the ACEC would require that human waste from those activities be compatible with ADEC Temporary Camp Practices and/or BLM permit conditions. If no facilities available waste will be contained and removed.	N/A
Transportation and Travel Management Decisions No current management direction with regard to transportation and travel management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Transportation and Travel Management Decisions** (These prescriptions are consistent with criteria for designation found in 43 CFR 8342.1(a), (b), and (d) and are considered interim until the time of completion of a travel management plan for the areas in question.) Summer subsistence use would be limited to ATVs and UTVs. Summer casual would be limited to existing roads, primitive roads and trails (as shown in the BLM's current route inventory) by ATVs only. Winter subsistence and casual use would allow cross-country travel by snowmobiles. No future construction or designation of routes within the 100-year floodplain of surface waters unless it can be demonstrated through design, route placement, and alignment that the route will not measurably contribute to sediment delivery to the adjacent surface waters. Work in coordination with the State of Alaska to designate stream crossing routes, and these routes would be designated within the 100-year floodplain.	N/A
Visual Resources Management Decisions No current management direction with regard to visual resources management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Visual Resources Management Decisions** Managed as VRM Class III.	N/A
Water Resources Decisions **SWMFP (BLM 1981)** W-1.1: Maintain the water quality of watersheds on BLM-administered lands in compliance with the Alaska Water Quality Standards. W-2.1: Perfect legal water rights to the water resource on public lands in support of Bureau programs and in compliance with the Alaska Water Use Act. Protect existing water rights of the United States.	**Water Resources Decisions** Pursue instream water right with the State of Alaska to maintain minimum instream flow for the Inglutalik River.	N/A

Table 6: Areas of Critical Environmental Concern Actions by Alternative – Kateel River ACEC

Alternative A	Alternative B	Alternatives C & D
ACEC Size: 568,083 acres	ACEC Size: 692,659 acres	N/A
Fisheries Management Decisions **SWMFP (BLM 1981)** WL-7.1: Consider the protection of riparian habitat in any project planned, initiated, or authorized by the BLM on public lands. Riparian habitats support a variety of fishes, game, and non-game animals important to the use or enjoyment of man. Manual requirements for riparian habitat are addressed in BLM Manual 6610. FH-1 Objective: Maintain aquatic habitat, which supports populations of fish in the planning area.	**Fisheries Management Decisions** Any proposal to use or develop lands, waters, or resources within the 100-year floodplain of the banks of active stream channels must demonstrate to the satisfaction of the AO that such use or development: • Would not adversely alter the condition and ecological function of aquatic and riparian systems by impacting water quality, stream flow, velocity, ground water hydrology, channel connectivity, channel form, material recruitment, substrate composition, energy (food) flow, and riparian function; • Would not diminish the quality and diversity of habitats needed to sustain the production of fish and wildlife populations at their natural potential.	N/A
Forestry and Woodlands Decisions **SWMFP (BLM 1981**) F-1.1 Provide for use of forestry products throughout the planning area with priority areas opened for settlement entry.	**Forestry and Woodlands Decisions** Closed to commercial woodland harvest. Non-subsistence house log harvest prohibited.	N/A

Table 6: Areas of Critical Environmental Concern Actions by Alternative – Kateel River ACEC

Alternative A	Alternative B	Alternatives C & D
Lands and Realty Decisions The existing Kateel River ACEC occurs within lands withdrawn by PLO 5173, 5179, 5180, and 5184. PLO 5173 withdrew lands identified by legal description (subject to valid existing rights) from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and from location and entry under the mining laws and from leasing under the Mineral Leasing Act. The lands were reserved for selection by village corporations. Upon conclusion of village selections, the regional corporations could select the lands under Section 12 of ANCSA. Prior to conveyances, the Secretary could administer the lands and make contracts, and to grant leases, permits, ROWs, or easements. Applications for mineral leasing would be rejected until the PLO is modified or the lands appropriately classified to permit mineral leasing. PLO 5179 withdrew identified lands by legal description (subject to valid existing rights) from all forms of appropriation under the public land laws including selections by the State of Alaska under the 1958 Alaska Statehood Act and from location and entry under the mining laws (which includes locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. PLO 5179 also withdrew the lands from selections by regional corporations under section 12 of ANCSA. The lands were reserved for study and possible recommendations to the Congress as additions or creation as a unit of the National Park, Forest, Wildlife Refuge, and Wild and Scenic River (WSR) System. PLO 5180 withdrew lands identified by legal description (subject to valid existing rights) from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and from location and entry under the mining laws (except locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. The lands were reserved for study to determine the proper classification of the lands under section 17(d)(1) of the ANCSA. PLO 5184 withdrew lands (subject to valid existing rights) withdrawn by section 11 of the ANCSA from all forms of appropriation under the public land laws and from location and entry under the mining laws (which includes locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. PLO 5184 also withdrew the lands from selections by the State of Alaska under the 1958 Alaska Statehood Act until 1975. The lands were reserved for study and review by the Secretary of the Interior for the purpose of the classification or reclassification of any lands not conveyed pursuant to section 14 of the ANCSA. PLO 5184 also withdrew lands by section 11 of ANCSA lying between 58 degrees north and 64 degrees north latitude and 161 degrees west longitude not withdrawn as any part of the National Wildlife Refuge and made these lands subject to valid existing rights from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and entry under the mining laws and from leasing under the Mineral Leasing Act. The lands were reserved for study and review by the Secretary of the Interior for the purpose of the classification or reclassification of any lands not conveyed pursuant to Section 14 of ANCSA. PLO 5184 also allowed the Secretary to administer the lands under applicable laws and regulations and granted the authority to enter contracts and to grant leases, permits, ROWs, or easements. The lands are currently managed under the 1986 CYRMP (BLM 1986a) and are open on a case-by-case basis to permits, leases, ROWs, and easements although FLPMA sales and leases are not allowed within a 300-foot set back zones on the Kateel River.	**Lands and Realty Decisions** ROW avoidance area.	N/A

Table 6: Areas of Critical Environmental Concern Actions by Alternative – Kateel River ACEC

Alternative A	Alternative B	Alternatives C &D
Minerals Decisions Upper portion of river closed to mineral leasing and non-metalliferous mineral entry by PLO 5180. Open to mining for metalliferous minerals, leases, permits, and ROWs. Lower portion of the river is under PLOs 5173/5184, which close lands to mineral leasing and mining. Open to leases, permits, and ROWs, except possibly for lands within 300 feet of the river, which the Central Yukon ROD specified as closed to sales and leases.	**Minerals Decisions** • Closed to salable • Closed to leasable • Withdrawn from locatable mineral entry (PLO 5180, currently open to metalliferous) If the recommended locatable withdrawal is not approved, locatable development would comply with all other management under this alternative and the following management would apply (subject to valid existing rights): • Cooperate with State of Alaska to help determine appropriate management of suction dredge mining in navigable waterways of the Kateel River. In accordance with 43 CFR 3809.201(a), the BLM may establish an agreement with the State to allow suction dredging on BLM-managed lands, which will provide maximum possible coordination with the State to avoid duplication and to ensure that operators prevent unnecessary or undue degradation of public lands. As directed by 43 CFR 3809.201(b), the agreement must require that the State notify the BLM within 15 days of application receipt to suction dredge so that the BLM may determine if federally proposed or listed threatened or endangered species or their proposed or designated critical habitat would be affected by the proposed action and to specify any necessary mitigation measures. The use of a suction dredge within the scope and allowances of the agreement, State statute, BLM regulations, and all applicable laws need not to submit to the BLM a notice or plan of operations. Any existing or future agreements that apply regionally or statewide that meet the requirements outlined above will be considered adequate to meet the conditions of the BSWI RMP. • No suction dredging on the non-navigable waterways of the Kateel River ACEC. • All reclamation must result in the rehabilitation of fisheries and wildlife habitats. The rehabilitation of fisheries habitat is defined as a geomorphically stable channel (i.e., functioning conditions for lateral stability, bedform diversity, and floodplain connectivity (as defined by Harman et al. 2012 or AIM-NAMF datasets) and sufficient floodplain roughness and riparian vegetation to dissipate stream energy and minimize erosion. • Baseline hydrological data that characterizes seasonal flow pattern and discharge and riparian vegetation condition would be required from the operator to establish the baseline for reclamation/ rehabilitation purposes. The BLM would be available to advise operators on the exact type of baseline data and detailed needed to meet this requirement.	N/A

Table 6: Areas of Critical Environmental Concern Actions by Alternative – Kateel River ACEC

Alternative A	Alternative B	Alternatives C & D
Recreation Decisions No current management direction with regard to recreation decisions on ACECs was identified. Recreation decisions on a case-by-case basis.	**Recreation Decisions** Any special recreation permits issued within the ACEC would require that human waste disposal for those activities be compatible with ADEC Temporary Camp Practices and/or BLM permit conditions. If no facilities are available waste will be contained and removed.	N/A
Transportation and Travel Management Decisions No current management direction with regard to transportation and travel management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Transportation and Travel Management Decisions** (These prescriptions are consistent with criteria for designation found in 43 CFR 8342.1(a), (b), and (d) and are considered interim until the time of completion of a travel management plan for the areas in question.). Summer subsistence use would be limited to ATVs and UTVs. Summer casual would be limited to existing roads, primitive roads and trails (as shown in the BLM's current route inventory) by ATVs only. Winter subsistence and casual use would allow cross-country travel by snowmobiles. No future construction or designation of routes within the 100-year floodplain of surface waters unless it can be demonstrated through design, route placement, and alignment that the route will not measurably contribute to sediment delivery to the adjacent surface waters. Work in coordination with the State of Alaska to designate stream crossing routes, and these routes would be designated within the 100-year floodplain.	N/A
Visual Resources Management Decisions No current management direction with regard to visual resources management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Visual Resources Management Decisions** Managed as VRM Class III.	N/A
Water Resources Decisions **SWMFP (BLM 1981)** W-1.1: Maintain the water quality of watersheds on BLM-administered lands in compliance with the Alaska Water Quality Standards. W-2.1: Perfect legal water rights to the water resource on public lands in support of Bureau programs, and in compliance with the Alaska Water Use Act. Protect existing water rights of the United States.	**Water Resources Decisions** Coordinate with USFWS in the pursuance of instream water right with the State of Alaska to maintain minimum instream flow for the Kateel River. Prioritize navigability determinations for the Kateel River.	N/A

Table 7: Areas of Critical Environmental Concern Actions by Alternative – Nulato River ACEC

Alternative A	Alternative B	Alternatives C & D
Not managed as an ACEC.	ACEC Size: 344,183 acres	N/A
Water Resources Decisions **SWMFP (BLM 1981)** W-1.1: Maintain the water quality of watersheds on BLM-administered lands in compliance with the Alaska Water Quality Standards. W-2.1: Perfect legal water rights to the water resource on public lands in support of Bureau programs, and in compliance with the Alaska Water Use Act. Protect existing water rights of the United States.	**Fisheries Management Decisions:** Any proposal to use or develop lands, waters, or resources within the 100-year floodplain of the banks of active stream channels must demonstrate to the satisfaction of the AO that such use or development: • Would not adversely alter the condition and ecological function of aquatic and riparian systems by impacting water quality, stream flow, velocity, ground water hydrology, channel connectivity, channel form, material recruitment, substrate composition, energy (food) flow, and riparian function; • Would not diminish the quality and diversity of habitats needed to sustain the production of fish and wildlife populations at their natural potential	N/A
Forestry and Woodlands Decisions **SWMFP (BLM 1981**) F-1.1 Provide for use of forestry products throughout the planning area with priority areas opened for settlement entry.	**Forestry and Woodlands Decisions** Closed to commercial woodland harvest. Non-subsistence house log harvest prohibited.	N/A
Grazing Decisions **SWMFP (BLM 1981)** RM-1.1: Provide seasonal grazing for domestic livestock on a local level where public demand warrants and where compatible with other resources. RM-1.2: Provide seasonal grazing for reindeer or muskoxen on a level to protect other sources. Exclude the Unalakleet and Anvik Rivers and their significant tributaries from grazing leases.	**Grazing Decisions** The Nulato River ACEC would be closed to grazing.	N/A

Table 7: Areas of Critical Environmental Concern Actions by Alternative – Nulato River ACEC

Alternative A	Alternative B	Alternatives C & D
Lands and Realty Decisions The nominated Nulato ACEC occurs within lands withdrawn by PLO 5173, PLO 5180 and PLO 5184. PLO 5173 withdrew lands identified by legal description (subject to valid existing rights) from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and from location and entry under the mining laws and from leasing under the Mineral Leasing Act. The lands were reserved for selection by village corporations. Upon conclusion of village selections, the regional corporations could select the lands under Section 12 of ANCSA. Prior to conveyances, the Secretary could administer the lands and make contracts, and to grant leases, permits, ROWs, or easements. Applications for mineral leasing would be rejected until the PLO is modified or the lands appropriately classified to permit mineral leasing. PLO 5180 withdrew lands identified by legal description (subject to valid existing rights) from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and from location and entry under the mining laws (except locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. The lands were reserved for study to determine the proper classification of the lands under section 17(d)(1) of the ANCSA. PLO 5184 withdrew lands (subject to valid existing rights) withdrawn by section 11 of the ANCSA from all forms of appropriation under the public land laws and from location and entry under the mining laws (which includes locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. PLO 5184 also withdrew the lands from selections by the State of Alaska under the 1958 Alaska Statehood Act until 1975. The lands were reserved for study and review by the Secretary of the Interior for the purpose of the classification or reclassification of any lands not conveyed pursuant to section 14 of the ANCSA. PLO 5184 also withdrew lands by section 11 of ANCSA lying between 58 degrees north and 64 degrees north latitude and 161 degrees west longitude not withdrawn as any part of the National Wildlife Refuge and made these lands subject to valid existing rights from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and entry under the mining laws and from leasing under the Mineral Leasing Act. The lands were reserved for study and review by the Secretary of the Interior for the purpose of the classification or reclassification of any lands not conveyed pursuant to Section 14 of ANCSA. PLO 5184 also allowed the Secretary to administer the lands under applicable laws and regulations and granted the authority to enter contracts and to grant leases, permits, ROWs, or easements. The lands are currently managed under the 1986 CYRMP (BLM 1986a) and are open on a case-by-case basis to permits, leases, ROWs, and easements although FLPMA sales and leases are not allowed within a 300-foot setback zone on the Nulato River.	**Lands and Realty Decisions** ROW avoidance area within the ACEC upstream of the Village of Nulato.	N/A

Table 7: Areas of Critical Environmental Concern Actions by Alternative – Nulato River ACEC

Alternative A	Alternative B	Alternatives C & D
Minerals Decisions No current management direction with regard to mineral decisions on ACECs was identified. Minerals decisions on a case-by-case basis.	**Minerals Decisions** • Closed to salable • Closed to leasable • Withdrawn from locatable mineral entry (PLO 5180, currently open to metalliferous) If the recommended locatable withdrawal is not approved, locatable development would comply with all other management under this alternative and the following management would apply (subject to valid existing rights): • Cooperate with State of Alaska to help determine appropriate management of suction dredge mining in navigable waterways of the Nutalo River. In accordance with 43 CFR 3809.201(a), the BLM may establish an agreement with the State to allow suction dredging on BLM-managed lands, which will provide maximum possible coordination with the State to avoid duplication and to ensure that operators prevent unnecessary or undue degradation of public lands. As directed by 43 CFR 3809.201(b), the agreement must require that the State notify the BLM within 15 days of application receipt to suction dredge so that the BLM may determine if federally proposed or listed threatened or endangered species or their proposed or designated critical habitat would be affected by the proposed action and to specify any necessary mitigation measures. The use of a suction dredge within the scope and allowances of the agreement, State statute, BLM regulations, and all applicable laws need not to submit to the BLM a notice or plan of operations. Any existing or future agreements that apply regionally or statewide, that meet the requirements outlined above will be considered adequate to meet the conditions of the BSWI RMP. • No suction dredging on the non-navigable waterways of the Nutalo River ACEC. • All reclamation must result in the rehabilitation of fisheries and wildlife habitats. The rehabilitation of fisheries habitat is defined as a geomorphically stable channel (i.e., functioning conditions for lateral stability, bedform diversity, and floodplain connectivity (as defined by Harman et al. 2012 or AIM-NAMF datasets) and sufficient floodplain roughness and riparian vegetation to dissipate stream energy and minimize erosion. • Baseline hydrological data that characterizes seasonal flow pattern and discharge and riparian vegetation condition would be required from the operator to establish the baseline for reclamation/ rehabilitation purposes. The BLM would be available to advise operators on the exact type of baseline data and detailed needed to meet this requirement.	N/A

Table 7: Areas of Critical Environmental Concern Actions by Alternative – Nulato River ACEC

Alternative A	Alternative B	Alternatives C & D
Recreation Decisions No current management direction with regard to recreation decisions on ACECs was identified. Recreation decisions on a case-by-case basis.	**Recreation Decisions** Any special recreation permits issued within the ACEC would require that human waste from those activities be compatible with ADEC Temporary Camp Practices and/or BLM permit conditions. If no facilities are available, waste would be contained and removed.	N/A
Transportation and Travel Management Decisions No current management direction with regard to transportation and travel management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Transportation and Travel Management Decisions** (These prescriptions are consistent with criteria for designation found in 43 CFR 8342.1(a), (b), and (d) and are considered interim until the time of completion of a travel management plan for the areas in question.) Summer subsistence use would be limited to ATVs and UTVs. Summer casual would be limited to existing roads, primitive roads and trails (as shown in the BLM's current route inventory) by ATVs only. Winter subsistence and casual use would allow cross-country travel by snowmobiles. No future construction or designation of routes within the 100-year floodplain of surface waters unless it can be demonstrated through design, route placement, and alignment that the route will not measurably contribute to sediment delivery to the adjacent surface waters. Work in coordination with the State of Alaska to designate stream crossing routes, and these routes would be designated within the 100-year floodplain.	N/A
Visual Resources Management Decisions No current management direction with regard to visual resources management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Visual Resources Management Decisions** Managed as VRM Class III.	N/A

Table 7: Areas of Critical Environmental Concern Actions by Alternative – Nulato River ACEC

Alternative A	Alternative B	Alternatives C & D
Water Resources Decisions **SWMFP (BLM 1981)** W-1.1: Maintain the water quality of watersheds on BLM-administered lands in compliance with the Alaska Water Quality Standards. W-2.1: Perfect legal water rights to the water resource on public lands in support of Bureau programs and in compliance with the Alaska Water Use Act. Protect existing water rights of the United States.	**Water Resources Decisions** In coordination with the Village of Nulato and ADEC, monitor water quality of drinking water in the village. If exceedances of drinking water standards are found, and based on the nature of those exceedances, the following management actions would be taken as appropriate: Hazardous material cleanup would be prioritized to address any hazardous material releases affecting water quality. Additional requirements for removing human waste from campsites for BLM-permitted activities would be implemented. Surface-disturbing casual use activities would be prohibited within the Nulato 100-year floodplain upstream of the Village of Nulato diversion point. With the exception of subsistence use, commercial woodland harvest, permitted woodland harvest, house log cutting, and timber sales would be prohibited within the 100-year floodplain If necessary, the BLM would work cooperatively with the Village of Nulato to find appropriate diversion points on BLM land as necessary to avoid contamination.	N/A

Table 8: Areas of Critical Environmental Concern Actions by Alternative – Shaktoolik River ACEC

Alternative A	Alternative B	Alternatives C & D
ACEC Size: 192,591 acres	ACEC Size: 191,725 acres	N/A
Fisheries Management Decisions **SWMFP (BLM 1981)** WL-7.1: Consider the protection of riparian habitat in any project planned, initiated, or authorized by the BLM on public lands. Riparian habitats support a variety of fishes, game, and non-game animals important to the use or enjoyment of man. Manual requirements for riparian habitat are addressed in BLM Manual 6610. FH-1 Objective: Maintain aquatic habitat, which supports populations of fish in the planning area.	**Fisheries Management Decisions** Any proposal to use or develop lands, waters, or resources within 300 feet or within the floodplain (whichever is greater) of the banks of active stream channels must demonstrate to the satisfaction of the AO that such use or development: • Would not adversely alter the condition and ecological function of aquatic and riparian systems by impacting water quality, stream flow, velocity, ground water hydrology, channel connectivity, channel form, material recruitment, substrate composition, energy (food) flow, and riparian function • Would not diminish the quality and diversity of habitats needed to sustain the production of fish and wildlife populations at their natural potential	N/A
Forestry and Woodlands Decisions **SWMFP (BLM 1981**) F-1.1 Provide for use of forestry products throughout the planning area with priority areas opened for settlement entry.	**Forestry and Woodlands Decisions** Closed to commercial woodland harvest. Non-subsistence house log harvest prohibited.	N/A
Lands and Realty Decisions The existing Shaktoolik River ACEC occurs within lands withdrawn by PLO 5180. PLO 5180 withdrew lands identified by legal description (subject to valid existing rights) from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and from location and entry under the mining laws (except locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. The lands were reserved for study to determine the proper classification of the lands under Section 17(d)(1) of ANCSA. The lands are currently managed under the 1986 CYRMP (BLM 1986a) and are open on a case-by-case basis to permits, leases, ROWs, and easements.	**Lands and Realty Decisions** ROW avoidance area.	N/A

Table 8: Areas of Critical Environmental Concern Actions by Alternative – Shaktoolik River ACEC

Alternative A	Alternative B	Alternatives C & D
Minerals Decisions No current management direction with regard to mineral decisions on ACECs was identified. Minerals decisions on a case-by-case basis.	**Minerals Decisions** • Closed to salable • Closed to leasable • Withdrawn from locatable mineral entry (PLO 5180, currently open to metalliferous) If the recommended locatable withdrawal is not approved, locatable development would comply with all other management under this alternative and the following management would apply (subject to valid existing rights): • Cooperate with State of Alaska to help determine appropriate management of suction dredge mining in navigable waterways of the Shaktoolik River. In accordance with 43 CFR 3809.201(a), the BLM may establish an agreement with the State to allow suction dredging on BLM-managed lands which will provide maximum possible coordination with the State to avoid duplication and to ensure that operators prevent unnecessary or undue degradation of public lands. As directed by 43 CFR 3809.201(b), the agreement must require that the State notify the BLM within 15 days of application receipt to suction dredge so that the BLM may determine if federally proposed or listed threatened or endangered species or their proposed or designated critical habitat would be affected by the proposed action and to specify any necessary mitigation measures. The use of a suction dredge within the scope and allowances of the agreement, State statute, BLM regulations, and all applicable laws need not to submit to the BLM a notice or plan of operations. Any existing or future agreements that apply regionally or statewide, that meet the requirements outlined above will be considered adequate to meet the conditions of the BSWI RMP. • No suction dredging on the non-navigable waterways of the Shaktoolik River ACEC. • All reclamation must result in the rehabilitation of fisheries and wildlife habitats. The rehabilitation of fisheries habitat is defined as a geomorphically stable channel (i.e., functioning conditions for lateral stability, bedform diversity, and floodplain connectivity (as defined by Harman et al. 2012 or AIM-NAMF datasets) and sufficient floodplain roughness and riparian vegetation to dissipate stream energy and minimize erosion. Baseline hydrological data that characterizes seasonal flow pattern and discharge and riparian vegetation condition would be required from the operator to establish the baseline for reclamation/rehabilitation purposes. The BLM would be available to advise operators on the exact type of baseline data and detailed needed to meet this requirement.	N/A
Recreation Decisions No current management direction with regard to recreation decisions on ACECs was identified. Recreation decisions on a case-by-case basis.	**Recreation Decisions** Any special recreation permits issued within the ACEC would require that human waste from those activities be compatible with ADEC Temporary Camp Practices and/or BLM permit conditions. If no facilities are available, waste will be contained and removed.	N/A

Table 8: Areas of Critical Environmental Concern Actions by Alternative – Shaktoolik River ACEC

Alternative A	Alternative B	Alternatives C & D
Transportation and Travel Management Decisions No current management direction with regard to transportation and travel management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Transportation and Travel Management Decisions** (These prescriptions are consistent with criteria for designation found in 43 CFR 8342.1(a), (b), and (d) and are considered interim until the time of completion of a travel management plan for the areas in question.) Summer subsistence use would be limited to ATVs and UTVs. Summer casual would be limited to existing roads, primitive roads and trails (as shown in the BLM's current route inventory) by ATVs only. Winter subsistence and casual use would allow cross-country travel by snowmobiles. No future construction or designation of routes within the 100-year floodplain of surface waters unless it can be demonstrated through design, route placement, and alignment that the route will not measurably contribute to sediment delivery to the adjacent surface waters. Work in coordination with the State of Alaska to designate stream crossing routes, and these routes would be designated within the 100-year floodplain.	N/A
Visual Resources Management Decisions No current management direction with regard to visual resources management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Visual Resources Management Decisions** Managed as VRM Class III.	N/A
Water Resources Decisions **SWMFP (BLM 1981)** W-1.1: Maintain the water quality of watersheds on BLM-administered lands in compliance with the Alaska Water Quality Standards. W-2.1: Perfect legal water rights to the water resource on public lands in support of Bureau programs, and in compliance with the Alaska Water Use Act. Protect existing water rights of the United States.	**Water Resources Decisions** Pursue instream water right with the State of Alaska to maintain minimum instream flow for the Shaktoolik River.	N/A

Table 9: Areas of Critical Environmental Concern Actions by Alternative – Sheefish ACEC

Alternative A	Alternative B	Alternatives C & D
Not managed as an ACEC.	ACEC Size: 696,902 acres	N/A
Fisheries Management Decisions **SWMFP (BLM 1981)** WL-7.1: Consider the protection of riparian habitat in any project planned, initiated, or authorized by the BLM on public lands. Riparian habitats support a variety of fishes, game, and non-game animals important to the use or enjoyment of man. Manual requirements for riparian habitat are addressed in BLM Manual 6610. FH-1 Objective: Maintain aquatic habitat which supports populations of fish in the planning area.	**Fisheries Management Decisions** Coordinate with State of Alaska in the annual monitoring of potential Sheefish spawning rivers within the boundary of the Sheefish ACEC. For those rivers identified as supporting spawning sheefish, the following management actions would apply within 0.25 mile on each side (from ordinary high water mark) of the reaches with known active spawning: Any proposal to use or develop lands, waters, or resources within the 100-year floodplain of active stream channels must demonstrate to the satisfaction of the AO that such use or development: • Would not adversely alter the condition and ecological function of aquatic and riparian systems by impacting water quality, stream flow, velocity, ground water hydrology, channel connectivity, channel form, material recruitment, substrate composition, energy (food) flow, and riparian function • Would not diminish the quality and diversity of habitats needed to sustain the production of fish and wildlife populations at their natural potential.	N/A
Cultural Resources Management Decisions **SWMFP (BLM 1981)** CR-1.1: Assure that potential surface-disturbing projects planned by or authorized by the BLM are examined in order to protect significant cultural resources. Cultural clearances could be performed either by a BLM archaeologist or contracted, by the permittee, to professional archaeologists who are recognized by the BLM.	**Cultural Resources Management Decisions** NSO for any externally proposed structures (e.g., cell towers, cabins). The Sheefish ACEC is co-located with the Iditarod National Historic Trail (INHT) National Trails Management Corridor (NTMC), which includes historic structures, the INHT tread itself, and cultural setting. Where overlap occurs, management proposed for the INHT NTMC would take precedence within the NTMC over management prescribed for the Sheefish ACEC.	N/A
Forestry and Woodlands Decisions **SWMFP (BLM 1981**) F-1.1 Provide for use of forestry products throughout the planning area with priority areas opened for settlement entry.	**Forestry and Woodlands Decisions** Except for subsistence use, no woodland harvest within 0.25 mile of active spawning area. This would include house logs, commercial wood harvest, permitted woodland gathering for personal use and commercial timber harvest.	N/A
The nominated Sheefish Spawning ACEC occurs within lands withdrawn by PLO 5180. PLO 5180 withdrew lands identified by legal description (subject to valid existing rights) from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and from location and entry under the mining laws (except locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. The lands were reserved for study to determine the proper classification of the lands under Section 17(d)(1) of the ANCSA. The lands are currently managed under the SWMFP (BLM 1981) and are open on a case-by-case basis to permits, leases, ROWs, and easements.	**Lands and Realty Decisions** ROW avoidance area. Coordinate with the State of Alaska on potential land exchanges to obtain all Hydrologic Unit Code 6 watershed acreage along the Big River and Middle Fork of the Kuskokwim.	N/A

Table 9: Areas of Critical Environmental Concern Actions by Alternative – Sheefish ACEC

Alternative A	Alternative B	Alternatives C & D
Minerals Decisions No current management direction with regard to minerals decisions on ACECs was identified. Minerals decisions on a case-by-case basis.	**Minerals Decisions** • Closed to salable • Closed to leasable • Withdrawn from locatable mineral entry (PLO 5180, currently open to metalliferous) Withdrawal from mineral entry portion of the Big River starting at the BLM boundary up river to N 62º, 32' 22" N, 155 º 03' 27" W, to include the river bed and a 1,000-foot buffer on each side of bankfull. Withdrawal from mineral entry a portion of the Middle Fork Kuskokwim River starting at the BLM boundary up river to 62º 41' 31" N, 154 º 41' 05" W to include the river bed and 1,000 feet on each side of bank full. Total withdrawal would be 4,996 acres. If the recommended locatable withdrawal is not approved, locatable development would comply with all other management under this alternative and the following management would apply (subject to valid existing rights): • Cooperate with State of Alaska to help determine appropriate management of suction dredge mining in navigable waterways of the Big Fork and Middle Fork of the Kuskokwim River. In accordance with 43 CFR 3809.201(a), the BLM may establish an agreement with the State to allow suction dredging on BLM-managed lands which will provide maximum possible coordination with the State to avoid duplication and to ensure that operators prevent unnecessary or undue degradation of public lands. As directed by 43 CFR 3809.201(b), the agreement must require that the State notify the BLM within 15 days of application receipt to suction dredge so that the BLM may determine if federally proposed or listed threatened or endangered species or their proposed or designated critical habitat would be affected by the proposed action and to specify any necessary mitigation measures. The use of a suction dredge within the scope and allowances of the agreement, State statute, BLM regulations, and all applicable laws need not to submit to the BLM a notice or plan of operations. Any existing or future agreements that apply regionally or statewide, that meet the requirements outlined above will be considered adequate to meet the conditions of the BSWI RMP. • No suction dredging on the non-navigable waterways of the Sheefish Spawning River ACEC. • All reclamation must result in the rehabilitation of fisheries and wildlife habitats. The rehabilitation of fisheries habitat is defined as a geomorphically stable channel (i.e., functioning conditions for lateral stability, bedform diversity, and floodplain connectivity (as defined by Harman et al. 2012 or AIM-NAMF datasets) and sufficient floodplain roughness and riparian vegetation to dissipate stream energy and minimize erosion. Baseline hydrological data that characterizes seasonal flow pattern and discharge and riparian vegetation condition would be required from the operator to establish the baseline for reclamation/rehabilitation purposes. The BLM would be available to advise operators on the exact type of baseline data and detailed needed to meet this requirement.	N/A

Table 9: Areas of Critical Environmental Concern Actions by Alternative – Sheefish ACEC

Alternative A	Alternative B	Alternatives C & D
Recreation Decisions No current management direction with regard to recreation decisions on ACECs was identified. Recreation decisions on a case-by-case basis.	**Recreation Decisions** Any special recreation permits issued within the ACEC would require that human waste from those activities be compatible with ADEC Temporary Camp Practices and/or BLM permit conditions. If no facilities are available waste will be contained and removed	N/A
Transportation and Travel Management Decisions No current management direction with regard to transportation and travel management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Transportation and Travel Management Decisions** (These prescriptions are consistent with criteria for designation found in 43 CFR 8342.1(a), (b), and (d) and are considered interim until the time of completion of a travel management plan for the areas in question.) Summer subsistence use would be limited to ATVs and UTVs. Summer casual would be limited to existing roads, primitive roads and trails (as shown in the BLM's current route inventory) by ATVs only. Winter subsistence and casual use would allow cross-country travel by snowmobiles. No future construction or designation of routes within the 100-year floodplain of surface waters unless it can be demonstrated through design, route placement, and alignment that the route will not measurably contribute to sediment delivery to the adjacent surface waters. Work in coordination with the State of Alaska to designate stream crossing routes, and these routes would be designated within the 100-year floodplain.	N/A
Visual Resources Management Decisions No current management direction with regard to visual resources management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Visual Resources Management Decisions** Managed as VRM Class II.	N/A
Water Resources Decisions **SWMFP (BLM 1981)** W-1.1: Maintain the water quality of watersheds on BLM-administered lands in compliance with the Alaska Water Quality Standards. W-2.1: Perfect legal water rights to the water resource on public lands in support of Bureau programs, and in compliance with the Alaska Water Use Act. Protect existing water rights of the United States.	**Water Resources Decisions** Pursue instream water rights with the State of Alaska to maintain minimum instream flow for the Big River and Middle Fork of the Kuskokwim River. Prioritize navigability determinations for the Big River and Middle Fork of the Kuskokwim River.	N/A

Table 10: Areas of Critical Environmental Concern Actions by Alternative – Swift River Whitefish Spawning ACEC

Alternative A	Alternative B	Alternatives C & D
Not managed as an ACEC.	ACEC Size: 220,032 acres.	N/A
Fisheries Management Decisions **SWMFP (BLM 1981)** WL-7.1: Consider the protection of riparian habitat in any project planned, initiated, or authorized by the BLM on public lands. Riparian habitats support a variety of fishes, game, and non-game animals important to the use or enjoyment of man. Manual requirements for riparian habitat are addressed in BLM Manual 6610. FH-1 Objective: Maintain aquatic habitat which supports populations of fish in the planning area.	**Fisheries Management Decisions** Any proposal to use or develop lands, waters, or resources within the 100-year floodplain of active stream channels must demonstrate to the satisfaction of the AO that such use or development: • Would not adversely alter the condition and ecological function of aquatic and riparian systems by impacting water quality, stream flow, velocity, ground water hydrology, channel connectivity, channel form, material recruitment, substrate composition, energy (food) flow, and riparian function • Would not diminish the quality and diversity of habitats needed to sustain the production of fish and wildlife populations at their natural potential	N/A
Forestry and Woodlands Decisions **SWMFP (BLM 1981**) F-1.1 Provide for use of forestry products throughout the planning area with priority areas opened for settlement entry.	**Forestry and Woodlands Decisions** Closed to commercial woodland harvest. Non-subsistence house log harvest prohibited.	N/A

Table 10: Areas of Critical Environmental Concern Actions by Alternative – Swift River Whitefish Spawning ACEC

Alternative A	Alternative B	Alternatives C & D
Lands and Realty Decisions The nominated Swift River Whitefish Spawning ACEC occurs within lands withdrawn by PLO 5180 and 5184. PLO 5180 withdrew lands (subject to valid existing rights) from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and from location and entry under the mining laws (except locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. The lands were reserved for study to determine the proper classification of the lands under Section 17(d)(1) of ANCSA. PLO 5184 withdrew lands (subject to valid existing rights) withdrawn by Section 11 of ANCSA from all forms of appropriation under the public land laws and from location and entry under the mining laws (which includes locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. PLO 5184 also withdrew the lands from selections by the State of Alaska under the 1958 Alaska Statehood Act until 1975. The lands were reserved for study and review by the Secretary of the Interior for the purpose of the classification or reclassification of any lands not conveyed pursuant to Section 14 of ANCSA. PLO 5184 also withdrew lands by Section 11 of ANCSA lying between 58 degrees north and 64 degrees north latitude and 161 degrees west longitude not withdrawn as any part of the National Wildlife Refuge and made these lands subject to valid existing rights from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Statehood Act and entry under the mining laws and from leasing under the Mineral Leasing Act. The lands were reserved for study and review by the Secretary of the Interior for the purpose of the classification or reclassification of any lands not conveyed pursuant to Section 14 of the ANCSA. PLO 5184 also allowed the Secretary to administer the lands under applicable laws and regulations and granted the authority to enter contracts and to grant leases, permits, ROWs, or easements. The lands are currently managed under the SWMFP (BLM 1981) and are open on a case-by-case basis to leases, permits, ROWs, and easements.	**Lands and Realty Decisions** ROW avoidance area.	N/A

Table 10: Areas of Critical Environmental Concern Actions by Alternative – Swift River Whitefish Spawning ACEC

Alternative A	Alternative B	Alternatives C & D
Minerals Decisions No current management direction with regard to mineral decisions on ACECs was identified. Minerals decisions on a case-by-case basis.	**Minerals Decisions** • Closed to salable • Closed to leasable • Withdrawn from locatable mineral entry (PLO 5180, currently open to metalliferous) If the recommended locatable withdrawal is not approved, locatable development would comply with all other management under this alternative and the following management would apply (subject to valid existing rights): • Cooperate with State of Alaska to help determine appropriate management of suction dredge mining in navigable waterways of the Swift River. In accordance with 43 CFR 3809.201(a), the BLM may establish an agreement with the State to allow suction dredging on BLM-managed lands which will provide maximum possible coordination with the State to avoid duplication and to ensure that operators prevent unnecessary or undue degradation of public lands. As directed by 43 CFR 3809.201(b), the agreement must require that the State notify the BLM within 15 days of application receipt to suction dredge so that the BLM may determine if federally proposed or listed threatened or endangered species or their proposed or designated critical habitat would be affected by the proposed action and to specify any necessary mitigation measures. The use of a suction dredge within the scope and allowances of the agreement, State statute, BLM regulations, and all applicable laws need not to submit to the BLM a notice or plan of operations. Any existing or future agreements that apply regionally or statewide, that meet the requirements outlined above will be considered adequate to meet the conditions of the BSWI RMP. • No suction dredging on the non-navigable waterways of the Swift River Whitefish Spawning River ACEC. • All reclamation must result in the rehabilitation of fisheries and wildlife habitats. The rehabilitation of fisheries habitat is defined as a geomorphically stable channel (i.e., functioning conditions for lateral stability, bedform diversity, and floodplain connectivity (as defined by Harman et al. 2012 or AIM-NAMF datasets) and sufficient floodplain roughness and riparian vegetation to dissipate stream energy and minimize erosion. Baseline hydrological data that characterizes seasonal flow pattern and discharge and riparian vegetation condition would be required from the operator to establish the baseline for reclamation/rehabilitation purposes. The BLM would be available to advise operators on the exact type of baseline data and detailed needed to meet this requirement.	N/A

Table 10: Areas of Critical Environmental Concern Actions by Alternative – Swift River Whitefish Spawning ACEC

Alternative A	Alternative B	Alternatives C & D
Recreation Decisions No current management direction with regard to recreation decisions on ACECs was identified. Recreation decisions on a case-by-case basis.	**Recreation Decisions** Any special recreation permits issued within the ACEC would require that human waste from those activities be compatible with ADEC Temporary Camp Practices and/or BLM permit conditions. If no facilities are available, waste would be contained and removed.	N/A
Transportation and Travel Management Decisions No current management direction with regard to transportation and travel management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Transportation and Travel Management Decisions** (These prescriptions are consistent with criteria for designation found in 43 CFR 8342.1(a), (b), and (d) and are considered interim until the time of completion of a travel management plan for the areas in question.) Summer subsistence use would be limited to ATVs and UTVs. Summer casual would be limited to existing roads, primitive roads and trails (as shown in the BLM's current route inventory) by ATVs only. Winter subsistence and casual use would allow cross-country travel by No future construction or designation of routes within the 100-year floodplain of surface waters unless it can be demonstrated through design, route placement, and alignment that the route will not measurably contribute to sediment delivery to the adjacent surface waters. Work in coordination with the State of Alaska to designate stream crossing routes, and these routes would be designated within the 100-year floodplain.	N/A
Visual Resources Management Decisions No current management direction with regard to visual resources management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Visual Resources Management Decisions** Managed as VRM Class III.	N/A
Water Resources Decisions **SWMFP (BLM 1981)** W-1.1: Maintain the water quality of watersheds on BLM-administered lands in compliance with the Alaska Water Quality Standards. W-2.1: Perfect legal water rights to the water resource on public lands in support of Bureau programs, and in compliance with the Alaska Water Use Act. Protect existing water rights of the United States.	**Water Resources Decisions** Pursue instream water rights with the State of Alaska to maintain minimum instream flow for the Swift River.	N/A

Table 11: Areas of Critical Environmental Concern Actions by Alternative – Tagagawik River ACEC

Alternative A	Alternative B	Alternatives C & D
Not managed as an ACEC.	ACEC Size: 301,044 acres	N/A
Cultural Resources Management Decisions **SWMFP (BLM 1981)** CR-1.1: Assure that potential surface-disturbing projects planned by or authorized by the BLM are examined in order to protect significant cultural resources. Cultural clearances could be performed either by a BLM archaeologist or contracted, by the permittee, to professional archaeologists who are recognized by the BLM.	**Cultural Resources Management Decisions** NSO for any externally proposed structures (e.g., cell towers, cabins).	N/A
Forestry and Woodlands Decisions **SWMFP (BLM 1981**) F-1.1 Provide for use of forestry products throughout the planning area with priority areas opened for settlement entry.	**Forestry and Woodlands Decisions** Closed to commercial woodland harvest. Non-subsistence house log harvest prohibited.	N/A
Lands and Realty Decisions The nominated Tagagawik River ACEC occurs within lands withdrawn by PLO 5180. PLO 5180 withdrew lands identified by legal description (subject to valid existing rights) from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and from location and entry under the mining laws (except locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. The lands were reserved for study to determine the proper classification of the lands under Section 17(d)(1) of ANCSA. The lands are currently managed under the 1986 CYRMP (BLM 1986a) and are open on a case-by-case basis to permits, leases, ROWs, and easements although a 300-foot setback zone on the Tagagawik are closed to FLPMA sales and leases.	**Lands and Realty Decisions** ROW avoidance area	N/A

Table 11: Areas of Critical Environmental Concern Actions by Alternative – Tagagawik River ACEC

Alternative A	Alternative B	Alternatives C & D
Closed to mineral leasing and non-metalliferous mineral entry by PLO 5180. Open to mining for metalliferous minerals, leases, permits, and ROWs.	**Minerals Decisions** • Closed to salable • Closed to leasable • Withdrawn from locatable mineral entry (PLO 5180, currently open to metalliferous) If the recommended locatable withdrawal is not approved, locatable development would comply with all other management under this alternative. All reclamation must result in the rehabilitation of fisheries and wildlife habitats. The rehabilitation of fisheries habitat is defined as a geomorphically stable channel (i.e., functioning conditions for lateral stability, bedform diversity, and floodplain connectivity (as defined by Harman et al. 2012 or AIM-NAMF datasets) and sufficient floodplain roughness and riparian vegetation to dissipate stream energy and minimize erosion. Baseline hydrological data that characterizes seasonal flow pattern and discharge and riparian vegetation condition would be required from the operator to establish the baseline for reclamation/rehabilitation purposes. The BLM would be available to advise operators on the exact type of baseline data and detailed needed to meet this requirement.	N/A
Recreation Decisions No current management direction with regard to recreation decisions on ACECs was identified. Recreation decisions on a case-by-case basis.	**Recreation Decisions** Any special recreation permits issued within the ACEC would require that human waste from those activities be compatible with ADEC Temporary Camp Practices and/or BLM permit conditions. If no facilities are available, waste would be contained and removed.	N/A
Transportation and Travel Management Decisions No current management direction with regard to transportation and travel management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Transportation and Travel Management Decisions** (These prescriptions are consistent with criteria for designation found in 43 CFR 8342.1(a), (b), and (d) and are considered interim until the time of completion of a travel management plan for the areas in question.) Summer subsistence use would be limited to ATVs and UTVs. Summer casual would be limited to existing roads, primitive roads and trails (as shown in the BLM's current route inventory) by ATVs only. Winter subsistence and casual use would allow cross-country travel by snowmobiles and over-the-snow vehicles. No future construction or designation of routes within the 100-year floodplain of surface waters unless it can be demonstrated through design, route placement, and alignment that the route will not measurably contribute to sediment delivery to the adjacent surface waters.	N/A
Visual Resources Management Decisions No current management direction with regard to visual resources management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Visual Resources Management Decisions** • Managed as VRM Class II.	N/A

Table 12: Areas of Critical Environmental Concern Actions by Alternative – Unalakleet River Watershed ACEC

Alternative A	Alternative B	Alternatives C & D
Not managed as an ACEC.	ACEC Size: 733,995 acres	N/A
Fisheries Management Decisions The BLM submitted an application for reservation of water to Alaska DNR on March 19, 2001 (DNR file application LAS 27140) for the main stem of the Unalakleet River from its headwaters to the confluence with the Chirosky River where the river departs public land (ADNR 2001). The reservation is for 100 percent of the natural flow from November through April. The flow request for May has been split to correspond to the immigration of the Chinook salmon and the out-migration of the salmonids. The flow request for June through October is based on the U.S. Fish and Wildlife Service Instream Flow Incremental Methodology and associated Physical Habitat Simulation Model (Bovee 1982, 1986) and mimics the natural hydrograph. The requested flows will provide adequate spawning habitat for the target species and their other life phases as well as life phases of other fish species indigenous to the Unalakleet River drainage. In 2010, the USFWS Office of Subsistence Management funded the Unalakleet River Chinook Salmon Assessment project (FIS-10-102) to fund the construction and operation of a 320-foot resistance board weir on the Unalakleet River for 4 years. This multi-year project utilized a resistance board weir to obtain reliable estimates of salmon escapement abundance and age, sex, and length composition (Bell and Kent 2012). This project remains a high priority in the region. In 2013, it was funded again through 2017. This is a cooperative project operated with support from ADF&G, the BLM, Norton Sound Economic Development Corporation, and The Native Village of Unalakleet. The chief purpose of the project is to obtain reliable estimates of the escapement's abundance and age, sex, and length composition (Bell and Kent 2012).	**Fisheries Management Decisions** Any proposal to use or develop lands, waters, or resources within 300 feet or within the 100-year floodplain (whichever is greater) of the banks of active stream channels must demonstrate to the satisfaction of the AO that such use or development: • Would not adversely alter the condition and ecological function of aquatic and riparian systems by impacting water quality, stream flow, velocity, ground water hydrology, channel connectivity, channel form, material recruitment, substrate composition, energy (food) flow, and riparian function • Would not diminish the quality and diversity of habitats needed to sustain the production of fish and wildlife populations at their natural potential	N/A
Cultural Resources Management Decisions **SWMFP (BLM 1981)** CR-1.1: Assure that potential surface-disturbing projects planned by or authorized by the BLM are examined in order to protect significant cultural resources. Cultural clearances could be performed either by a BLM archaeologist or contracted, by the permittee, to professional archaeologists who are recognized by the BLM.	**Cultural Resources Management Decisions** NSO for any externally proposed structures (e.g., cell towers, cabins).	N/A
Forestry and Woodlands Decisions **SWMFP (BLM 1981**) F-1.1 Provide for use of forestry products throughout the Planning Are with priority areas opened for settlement entry.	**Forestry and Woodlands Decisions** Closed to commercial woodland harvest. Non-subsistence house log harvest prohibited.	N/A

Table 12: Areas of Critical Environmental Concern Actions by Alternative – Unalakleet River Watershed ACEC

Alternative A	Alternative B	Alternatives C & D
Lands and Realty Decisions The nominated Unalakleet River Watershed ACEC occurs within lands withdrawn by PLO 5180 and 5184. PLO 5180 withdrew lands identified by legal description (subject to valid existing rights) from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and from location and entry under the mining laws (except locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. The lands were reserved for study to determine the proper classification of the lands under Section 17(d)(1) of the ANCSA. PLO 5184 withdrew lands (subject to valid existing rights) withdrawn by Section 11 of the ANCSA from all forms of appropriation under the public land laws and from location and entry under the mining laws (which includes locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. PLO 5184 also withdrew these lands from selections by the State of Alaska under the 1958 Alaska Statehood Act until 1975. The lands were reserved for study and review by the Secretary of the Interior for the purpose of the classification or reclassification of any lands not conveyed pursuant to Section 14 of the ANCSA. PLO 5184 also withdrew lands lying between 58 degrees north and 64 degrees north latitude and 161 degrees west longitude not withdrawn as any part of the National Wildlife Refuge and made these lands subject to valid existing rights from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and entry under the mining laws and from leasing under the Mineral Leasing Act. The lands were reserved for study and review by the Secretary of the Interior for the purpose of the classification or reclassification of any lands not conveyed pursuant to section 14 of the ANCSA. PLO 5184 also allowed the Secretary to administer the lands under applicable laws and regulations and granted the authority to enter contracts and to grant leases, permits, ROWs, or easements. The lands are currently managed under the SWMFP (BLM 1981) and the 1986 CYRMP (BLM 1986a) and are open on a case-by-case basis to permits, leases, ROWs, and easements with a 300-foot setback on the Unalakleet River portion of the1986 CYRMP (BLM 1986a) from FLPMA leases.	**Lands and Realty Decisions** ROW avoidance area. Prioritize cooperation with the State of Alaska and Native Village of Unalakleet to develop coordinated strategy for management of the Unalakleet River corridor within the ACEC. Work toward developing a cooperative agreement with the state of Alaska to coordinate the management objectives for both BLM and State lands within the Unalakleet River Corridor.	N/A

Table 12: Areas of Critical Environmental Concern Actions by Alternative – Unalakleet River Watershed ACEC

Alternative A	Alternative B	Alternatives C & D
Minerals Decisions No current management direction with regard to mineral decisions on ACECs was identified. Minerals decisions on a case-by-case basis.	**Minerals Decisions** • Closed to salable • Closed to leasable • Withdrawn from locatable mineral entry (PLO 5180, currently open to metalliferous) If the recommended locatable withdrawal is not approved, locatable development would comply with all other management under this alternative and the following management would apply (subject to valid existing rights): • Cooperate with State of Alaska to help determine appropriate management of suction dredge mining in navigable waterways of the Main Unalakleet River and the North River. In accordance with 43 CFR 3809.201(a), the BLM may establish an agreement with the State to allow suction dredging on BLM-managed lands which will provide maximum possible coordination with the State to avoid duplication and to ensure that operators prevent unnecessary or undue degradation of public lands. As directed by 43 CFR 3809.201(b), the agreement must require that the State notify the BLM within 15 days of application receipt to suction dredge so that the BLM may determine if federally proposed or listed threatened or endangered species or their proposed or designated critical habitat would be affected by the proposed action and to specify any necessary mitigation measures. The use of a suction dredge within the scope and allowances of the agreement, State statute, BLM regulations, and all applicable laws need not to submit to the BLM a notice or plan of operations. Any existing or future agreements that apply regionally or statewide, that meet the requirements outlined above will be considered adequate to meet the conditions of the BSWI RMP. • No suction dredging on the non-navigable waterways of the Unalakleet River Watershed ACEC. • All reclamation must result in the rehabilitation of fisheries and wildlife habitats. The rehabilitation of fisheries habitat is defined as a geomorphically stable channel (i.e., functioning conditions for lateral stability, bedform diversity, and floodplain connectivity (as defined by Harman et al. 2012 or AIM-NAMF datasets) and sufficient floodplain roughness and riparian vegetation to dissipate stream energy and minimize erosion. • Baseline hydrological data that characterizes seasonal flow pattern and discharge and riparian vegetation condition would be required from the operator to establish the baseline for reclamation/ rehabilitation purposes. The BLM would be available to advise operators on the exact type of baseline data and detailed needed to meet this requirement.	N/A

Table 12: Areas of Critical Environmental Concern Actions by Alternative – Unalakleet River Watershed ACEC

Alternative A	Alternative B	Alternatives C & D
Recreation Decisions No current management direction with regard to recreation decisions on ACECs was identified. Recreation decisions on a case-by-case basis.	**Recreation Decisions** Any special recreation permits issued within the ACEC would require that human waste from those activities be compatible with ADEC Temporary Camp Practices and/or BLM permit conditions. If no facilities are available, waste would be contained and removed.	N/A
Transportation and Travel Management Decisions No current management direction with regard to transportation and travel management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Transportation and Travel Management Decisions** (These prescriptions are consistent with criteria for designation found in 43 CFR 8342.1(a), (b), and (d) and are considered interim until the time of completion of a travel management plan for the areas in question.) Summer subsistence use would be limited to ATVs and UTVs. Summer casual would be limited to existing roads, primitive roads and trails (as shown in the BLM's current route inventory) by ATVs only. Winter subsistence and casual use would allow cross-country travel by snowmobiles. No future construction or designation of routes within the 100-year floodplain of surface waters unless it can be demonstrated through design, route placement, and alignment that the route will not measurably contribute to sediment delivery to the adjacent surface waters. Work in coordination with the State of Alaska to designate stream crossing routes, and these routes would be designated within the 100-year floodplain.	N/A
Visual Resources Management Decisions No current management direction with regard to visual resources management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Visual Resources Decisions** Managed as VRM Class II. To the extent practicable, restoration activities would be required to restore to original contour and revegetate with species to avoid visual contrast. The goal is that permitted surface-disturbing activities restore sites to near-original site condition.	N/A
WSR Management Decisions No current management direction with regard to the priority of WSR and ACEC management prescriptions was identified.	**WSR Management Decisions** Where the ACEC boundary overlaps with the WSR, the ACEC takes precedent with management prescriptions. The WSR management prescriptions would only apply to that portion of the ACEC within the Unalakleet Wild River Corridor.	N/A
Water Resources Decisions **SWMFP (BLM 1981)** W-1.1: Maintain the water quality of watersheds on BLM-administered lands in compliance with the Alaska Water Quality Standards. W-2.1: Perfect legal water rights to the water resource on public lands in support of Bureau programs, and in compliance with the Alaska Water Use Act. Protect existing water rights of the United States.	**Water Resources Decisions** Continue to pursue instream water right with the State of Alaska to maintain minimum instream flow for the Main Unalakleet River and the North River.	N/A

Table 13: Areas of Critical Environmental Concern Actions by Alternative – Ungalik River ACEC

Alternative A	Alternative B	Alternatives C & D
ACEC Size: 112,719 acres	ACEC Size: 113,455 acres	N/A
Fisheries Management Decisions **SWMFP (BLM 1981)** WL-7.1: Consider the protection of riparian habitat in any project planned, initiated, or authorized by the BLM on public lands. Riparian habitats support a variety of fishes, game, and non-game animals important to the use or enjoyment of man. Manual requirements for riparian habitat are addressed in BLM Manual 6610. FH-1 Objective: Maintain aquatic habitat, which supports populations of fish in the planning area.	**Fisheries Management Decisions** Any proposal to use or develop lands, waters, or resources within 300 feet or within the 100-year floodplain (whichever is greater) of the banks of active stream channels must demonstrate to the satisfaction of the AO that such use or development: • Would not adversely alter the condition and ecological function of aquatic and riparian systems by impacting water quality, stream flow, velocity, ground water hydrology, channel connectivity, channel form, material recruitment, substrate composition, energy (food) flow, and riparian function • Would not diminish the quality and diversity of habitats needed to sustain the production of fish and wildlife populations at their natural potential	N/A
Forestry and Woodlands Decisions **SWMFP (BLM 1981**) F-1.1 Provide for use of forestry products throughout the planning area with priority areas opened for settlement entry.	**Forestry and Woodlands Decisions** Closed to commercial woodland harvest. Non-subsistence house log harvest prohibited.	N/A
Lands and Realty Decisions The existing Ungalik River ACEC occurs within lands withdrawn by PLO 5180. PLO 5180 withdrew lands identified by legal description (subject to valid existing rights) from all forms of appropriation under the public land laws, including selections by the State of Alaska under the 1958 Alaska Statehood Act and from location and entry under the mining laws (except locations for metalliferous minerals) and from leasing under the Mineral Leasing Act. The lands were reserved for study to determine the proper classification of the lands under Section 17(d)(1) of the ANCSA. The lands are currently managed under the 1986 CYRMP (BLM 1986a) and are open on a case-by-case basis to permits, leases, ROWs, and easements.	**Lands and Realty Decisions** ROW avoidance area.	N/A

Table 13: Areas of Critical Environmental Concern Actions by Alternative – Ungalik River ACEC

Alternative A	Alternative B	Alternatives C & D
Minerals Decisions Closed to mineral leasing and non-metalliferous mineral entry by PLO 5180. Open to mining for metalliferous minerals, leases, permits, and ROWs.	**Minerals Decisions** • Closed to salable • Closed to leasable • Withdrawn from locatable mineral entry (PLO 5180, currently open to metalliferous) If the recommended locatable withdrawal is not approved, locatable development would comply with all other management under this alternative and the following management would apply (subject to valid existing rights): • Cooperate with State of Alaska to help determine appropriate management of suction dredge mining in navigable waterways of the Ungalik River. In accordance with 43 CFR 3809.201(a), the BLM may establish an agreement with the State to allow suction dredging on BLM-managed lands which will provide maximum possible coordination with the State to avoid duplication and to ensure that operators prevent unnecessary or undue degradation of public lands. As directed by 43 CFR 3809.201(b), the agreement must require that the State notify the BLM within 15 days of application receipt to suction dredge so that the BLM may determine if federally proposed or listed threatened or endangered species or their proposed or designated critical habitat would be affected by the proposed action and to specify any necessary mitigation measures. The use of a suction dredge within the scope and allowances of the agreement, State statute, BLM regulations, and all applicable laws need not to submit to the BLM a notice or plan of operations. Any existing or future agreements that apply regionally or statewide, that meet the requirements outlined above will be considered adequate to meet the conditions of the BSWI RMP. • No suction dredging on the non-navigable waterways of the Ungalik River ACEC. • All reclamation must result in the rehabilitation of fisheries and wildlife habitats. The rehabilitation of fisheries habitat is defined as a geomorphically stable channel (i.e., functioning conditions for lateral stability, bedform diversity, and floodplain connectivity (as defined by Harman et al. 2012 or AIM-NAMF datasets) and sufficient floodplain roughness and riparian vegetation to dissipate stream energy and minimize erosion. • Baseline hydrological data that characterizes seasonal flow pattern and discharge and riparian vegetation condition would be required from the operator to establish the baseline for reclamation/rehabilitation purposes. The BLM would be available to advise operators on the exact type of baseline data and detailed needed to meet this requirement.	N/A

Table 13: Areas of Critical Environmental Concern Actions by Alternative – Ungalik River ACEC

Alternative A	Alternative B	Alternatives C & D
Transportation and Travel Management Decisions No current management direction with regard to transportation and travel management decisions on ACECs was identified. Decisions on a case-by-case basis.	**Transportation and Travel Management Decisions** (These prescriptions are consistent with criteria for designation found in 43 CFR 8342.1(a), (b), and (d) and are considered interim until the time of completion of a travel management plan for the areas in question.) Summer subsistence use would be limited to ATVs and UTVs. Summer casual would be limited to existing roads, primitive roads and trails (as shown in the BLM's current route inventory) by ATVs only. Winter subsistence and casual use would allow cross-country travel by snowmobiles. No future construction or designation of routes within the 100-year floodplain of surface waters unless it can be demonstrated through design, route placement, and alignment that the route will not measurably contribute to sediment delivery to the adjacent surface waters. Work in coordination with the State of Alaska to designate stream crossing routes, and these routes would be designated within the 100-year floodplain.	N/A
Recreation Decisions No current management direction with regard to recreation decisions on ACECs was identified. Recreation decisions on a case-by-case basis.	**Recreation Decisions** Any special recreation permits issued within the ACEC would require that human waste from those activities be compatible with ADEC Temporary Camp Practices and/or BLM permit conditions. If no facilities are available, waste will be contained and removed.	N/A

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Appendix K: Best Management Practices (BMPs) and Standard Operating Procedures (SOPs)

Appendix K. Best Management Practices (BMPs) and Standard Operating Procedures (SOPs)

Resource

Table K-1: Air Quality and Air Quality-Related Values

SOP / BMP Number	SOP / BMP
Air-1	**Road Use and Dust Abatement** Apply water or road surface stabilizers/dust control additives to reduce dust deposition and degradation of air quality near communities.

Table K-2: Soils

SOP / BMP Number	SOP / BMP
Soils-1	Where economically, technically, and logistically feasible, mining operation must directly transport all organic material (grass, plants, trees, tundra, etc.) from its original location to the point of reclamation without intermediate stockpiling. If stockpiling is required, all organic material should be specifically isolated from topsoil and overburden and utilized at the earliest feasible time.
Soils-2	Where appropriate, roadways will be ditched on the uphill side. Culverts or low water crossings will be installed at suitable intervals. Spacing of drainage devices and water bars will be appropriate for the road gradient and soil erodibility of the site.
Soils-3	Design roads and trails for minimal disruption of natural drainage patterns. All road-building activity shall use BMPs established by the U.S. Forest Service (Forest Service) (FSH 7709.56 – Road Construction Handbook Chapter 40 – Design) as well as BLM Manual 9113 and BLM Handbook 9113-1 and Handbook 9113-2 to guide maintenance and road construction designs and requirements. Include definitions for functional road classification and maintenance levels for BLM roads.
Soils-4	Roads and trails should avoid areas with unstable or fragile soils.
Soils-5	Water bars will be placed across reclaimed roads. Spacing will be dependent on road gradient, soil erodibility, and other site-specific factors.
Soils-6	Snow and ice bridges will be removed, breached, or slotted before spring break-up. Ramps and bridges will be substantially free of soil and debris.
Soils-7	Overland moves and heavy equipment use: • Whenever possible, overland moves that are a part of permitted operations will occur during winter when frost and snow cover is sufficient to minimize vegetation and soil disturbance and compaction. The Authorized Officer (AO) will determine the date when sufficient frost and snow cover exists, and overland moves should not occur until these conditions are met. • Design and locate winter trails and ice roads for overland moves to minimize compaction of soils and breakage, abrasion, compaction, or displacement of vegetation. • Clearing of drifted snow is generally allowed, to the extent that vegetative ground cover is not disturbed. • Offsets of winter trail/ice road locations may be required to avoid using the same route or track each subsequent year. • When access is required in snow-free months, routes that utilize naturally hardened sites will be selected to avoid trail braiding, and wetlands will be avoided. The permittee will employ vehicle types and methods that minimize vegetation and soil disturbance, such as use of air or water craft, utilizing existing roads or trails, or use of low ground pressure vehicles. • The use of heavy machinery in saturated soil conditions will be limited to low ground pressure designated machinery.

SOP / BMP Number	SOP / BMP
Soils-8	At the beginning of any surface-disturbing activities, topsoil will be stockpiled and saved for later reclamation. At sites with little or no pre-disturbance topsoil, which will result in an insufficient amount of topsoil to distribute over the entire disturbed area at a deep enough depth to adequately foster revegetation, specific areas best suited for reclamation efforts should be selected to receive the topsoil. If practicable, use topsoil and vegetation from adjacent areas. At sites where topsoil is not available, fine material may be stockpiled and used in place of topsoil. If any organics are available, they should be mixed in with the fines.
Soils-9	Prudent use of erosion control measures, including diversion terraces, riprap, matting, temporary sediment traps, and water bars, will be employed as necessary to control soil erosion, as appropriate. In areas where little to no topsoil is present, efforts should be made to place the limited quantity of soil in areas prone to erosion or failure. If natural composition, texture, or porosity of the surface materials is not conducive to natural revegetation, an operator shall take measures to promote natural revegetation, including redistribution of topsoil, where available (11 Alaska Administrative Code [AAC] 97(a)(3)).
Soils-10	Areas disturbed during project operation or construction will be reclaimed to as near pre-project conditions as practical. Wetland topsoil will be handled so it remains segregated from other soils. If necessary, use mulching, erosion control measures, and fertilization to achieve acceptable ground stabilization. Use inter-seeding, secondary seeding, or staggered seeding to accomplish revegetation objectives, as needed. Use follow-up seeding, corrective erosion control measures, or other approved measures on areas of surface disturbance that experience revegetation or ground stability failure. Corrective erosion control measures include, but are not limited to, broadcasting woody debris, planting viable portions of live shrubs (sprigging), and transplanting live vegetation from adjacent areas within the project area.
Soils-11	The BLM recognizes that there may be more than one correct way to achieve successful reclamation of soil and water resources, and a variety of methods may be appropriate to the varying circumstances. The BLM will continue to allow applicants to use their own expertise in recommending and implementing construction and reclamation projects. These allowances still hold the applicant responsible for final reclamation standards of performance. The BLM will review the applicant's reclamation plan and if needed, incorporate conditions of approval to enhance success and mitigate impacts.
Soils-12	Natural revegetation of disturbed sites is the generally preferred method for revegetation/stabilization of disturbed soils. Where erosion is problematic or rapid establishment of plant cover is desired, utilize a combination of seeding, planting, and transplanting of adult plants or vegetation mats, and/or fertilizing as necessary to mitigate soil erosion.
Soils-13	For long-term storage of soil stockpiles provide protective cover such as organic mulch, herbaceous vegetation, jute matting, or other erosion-preventative fabric.
Soils-14	Where roads are not available, overland movement of equipment, materials, and supplies is allowed when soils are frozen and sufficient snow cover exists to prevent soil compaction and loss or damage to vegetation.
Soils-15	Soil erosion will be minimized by restricting the removal of vegetation adjacent to streams and by stabilizing disturbed soil as soon as possible. (NOTE: This is not intended to preclude activities that by nature must occur within riparian or wetland areas, such as placer mining.)
Soils-16	At the end of operations, roads, well pads, and other disturbed areas will be re-contoured and revegetated per an approved reclamation plan or Plan of Operations. Revegetate through seeding of native seed or by providing soil conditions that allow the site to re-vegetate naturally, whichever provides the most effective means of reestablishing ground cover and minimizing erosion. The final land surface will be scarified to provide seed traps and erosion control.
Soils-17	To minimize soil erosion, surface-disturbing proposals, except for locatable mining operations, involving constructions on slopes greater than 33 percent (3:1) will include an approved erosion control strategy, topsoil segregation/restoration plan, be properly surveyed and designed by a certified engineer, and approved by BLM prior to construction and maintenance. If, after an environmental analysis, the AO determines that pursuing other placement alternatives will cause undue or unnecessary degradation, occupancy in the no surface occupancy (NSO) area may be authorized. A modification may be granted if a detailed analysis finds that surface disturbance could occur without accelerated erosion. Locatable mining operations must include slope stability and erosion mitigation measures in their reclamation plan. The BLM may require an engineering review of slopes steeper than 33.33 percent that are proposed to be part of final reclamation. During active operations, slopes steeper than 33.33 percent must comply with all safety guidelines required by federal and State requirements.

SOP / BMP Number	SOP / BMP
Soils-18	Road Construction • Locate temporary and permanent roads and landings on stable locations, e.g., ridge tops, stable benches, or flats, and gentle-to-moderate side slopes. Minimize road construction on steep slopes (>36.4 percent). • Confine pioneer roads to the construction limits of the permanent roadway to reduce the amount of area disturbed and avoid deposition in wetlands, Riparian Reserve, floodplains, and waters of the State. Install temporary drainage, erosion, and sediment control structures. Storm proof or close pioneer roads prior to the onset of the wet season. • Design road cut and fill slopes with stable angles to reduce erosion and prevent slope failure. • End-haul material excavated during construction, renovation, or maintenance where side slopes generally exceed 36.4 percent and any slope where side-cast material may enter wetlands, floodplains, and waters of the State. • Construct road fills to prevent fill failure using inorganic material, compaction, buttressing, sub-surface drainage, rock facing, or other effective means. • Design and construct sub-surface drainage (e.g., trench drains using geo-textile fabrics and drain pipes) in landslide-prone areas and saturated soils. Minimize or eliminate new road construction in these areas. • Locate waste disposal areas outside wetlands, Riparian Reserve, floodplains, and unstable areas to minimize risk of sediment delivery to waters of the State. Apply surface erosion control prior to the wet season. Prevent overloading areas, which may become unstable. • Use controlled blasting techniques to minimize loss of material on steep slopes or into wetlands, Riparian Reserve, floodplains, and waters of the State. • Effectively drain the road surface by using crowning, insloping or outsloping, grade reversals (rolling dips), and water bars or a combination of these methods. Avoid concentrated discharge onto fill slopes unless the fill slopes are stable and erosion-proofed. • Outslope temporary and permanent low volume roads to provide surface drainage on road gradients up to 6 percent unless there is a traffic hazard from the road shape.

SOP / BMP Number	SOP / BMP
Soils-19	Erosion Control Measures • During roadside brushing, remove vegetation by cutting rather than uprooting. • Limit road and landing construction, reconstruction, or renovation activities to the dry season. Keep erosion control measures concurrent with surface disturbance to allow immediate storm proofing. • Apply native seed and certified weed-free mulch to cut and fill slopes, ditch lines, and waste disposal sites with potential for sediment delivery to wetlands, Riparian Reserve, floodplains and waters of the State. If needed to promote a rapid ground cover and prevent aggressive invasive plants, use interim erosion control non-native sterile annuals before attempting to restore natives. Apply seed on completion of construction and as early as possible to increase germination and growth. Reseed if necessary to accomplish erosion control. Select seed species that are fast-growing, and provide ample ground cover and soil-binding properties. Apply mulch that will stay in place and at site-specific rates to prevent erosion. • Place sediment-trapping materials or structures such as straw bales, jute netting, or sediment basins at the base of newly constructed fill or side slopes where sediment could be transported to waters of the State. Keep materials away from culvert inlets or outlets. • Use biotechnical stabilization and soil bioengineering techniques to control bank erosion (e.g., commercially produced matting and blankets, live plants or cuttings, dead plant material, rock, and other inert structures). • Suspend surface-disturbing activity if forecasted rain will saturate soils to the extent that there is potential for movement of sediment from the road to wetlands, floodplains, and waters of the State. Cover or temporarily stabilize exposed soils during work suspension. • Upon completion of surface-disturbing activities, immediately stabilize fill material over stream crossing structures. Measures could include but not be limited to erosion control blankets and mats, soil binders, soil tackifiers, or placement of slash. • Apply fertilizer in a manner to prevent direct fertilizer entry to wetlands, Riparian Reserve, floodplains, and waters of the State.
Soils-20	Road Maintenance • Prior to the wet season, provide effective road surface drainage maintenance. Clear ditch lines in sections where there is lowered capacity or obstructed by dry ravel, sediment wedges, small failures, or fluvial sediment deposition. Remove accumulated sediment and blockages at cross-drain inlets and outlets. Grade natural surface and aggregate roads where the surface is uneven from surface erosion or vehicle rutting. Restore crowning, outsloping, or insloping for the road type for effective runoff. Remove or provide outlets through berms on the road shoulder. After ditch cleaning prior to hauling, allow vegetation to reestablish or use sediment entrapment measures (e.g., sediment trapping blankets and silt fences). • Retain ground cover in ditch lines, except where sediment deposition or obstructions require maintenance. • Maintain water flow conveyance, sediment filtering and ditch line integrity by limiting ditch line disturbance and groundcover destruction when machine cleaning within 200 feet of road stream crossings. • Avoid undercutting of cut-slopes when cleaning ditch lines. • Remove and dispose of slide material when it is obstructing road surface and ditch line drainage. Place material on stable ground outside of wetlands, Riparian Reserve, floodplains, and waters of the State. Seed with native seed and use weed-free mulch. • Do not sidecast loose ditch or surface material where it can enter wetlands, Riparian Reserve, floodplains, and waters of the State. • Retain low-growing vegetation on cut-and- fill slopes. • Seed and mulch cleaned ditch lines and bare soils that drain directly to wetlands, floodplains, and waters of the State, with native species and weed-free mulch.

SOP / BMP Number	SOP / BMP
Soils-21	Road Closure and Reclamation • Inspect reclaimed roads to ensure that vegetation stabilization measures are operating as planned, drainage structures are operational, and noxious weeds are not providing erosion control. Conduct vegetation treatments and drainage structure maintenance as needed. • Reclaim temporary roads upon completion of use. • Prevent vehicular traffic, utilizing methods such as gates, guard rails, earth/log barricades, to reduce or eliminate erosion and sedimentation. • Convert existing drainage structures such as ditches and cross drain culverts to a long-term maintenance free drainage configuration such as an outsloped road surface and water bars. • Place and remove temporary stream crossings during the dry season, without overwintering, unless designed to accommodate the 100-year theoretical flood. • Place excavated material from removed stream crossings on stable ground outside of wetlands, Riparian Reserve, floodplains, and waters of the State. In some cases, material could be used to recontour old road cuts or be spread across roadbed to prevent erosion. • Reestablish stream crossings to the natural stream gradient. Excavate side slopes back to the natural bank profile. Reestablish natural channel width and floodplain. • Install cross ditches or water bars upslope from stream crossing to direct runoff and potential sediment to the hillslope rather than deliver it to the stream. • Following culvert removal and prior to the wet season, apply erosion control and sediment trapping measures (e.g., seeding, mulching, straw bales, jute netting, and native vegetative cuttings) where sediment can be delivered into wetlands, Riparian Reserve, floodplains, and waters of the State. • Implement tillage measures, including ripping or subsoiling to an effective depth. Treat compacted areas including the roadbed, landings, construction areas, and spoils sites. • After tilling the road surface, pull back unstable road fill and end-haul or contour to the natural slopes.
Soils-22	Wet-season Road Use • On active haul roads, during the wet season, use durable rock surfacing and sufficient rock depth to resist rutting or development of sediment on road surfaces that drain directly to wetlands, floodplains, and waters of the State. • Prior to winter hauling activities, implement structural road treatments such as increasing the frequency of cross drains, installing sediment barriers or catch basins, applying gravel lifts or asphalt road surfacing at stream crossing approaches, and armoring ditch lines. • Remove snow on surfaced roads in a manner that will protect the road and adjacent resources. Retain a minimum layer (4 inches) of compacted snow on the road surface. Provide drainage through the snow bank at intervals to allow snowmelt to drain off the road surface. • Avoid removing snow from unsurfaced roads where runoff drains to waters of the State. • Maintain road surface by applying appropriate gradation of aggregate and suitable particle hardness to protect road surfaces from rutting and erosion under active haul where runoff drains to wetlands, Riparian Reserve, floodplains, and waters of the State. • To reduce sediment tracking from natural surface roads during active haul, provide a gravel approach before entrance onto surfaced roads. • Install temporary culverts and washed rock on top of low-water ford to reduce vehicle contact with water during active haul. • Remove culverts promptly after use.
Soils-23	All Recreation Facilities • Implement erosion control measures at recreation sites to stabilize exposed soils where water flows or sediment may reach waterbodies. • Minimize development of recreation facilities that are not water-dependent (e.g., boat ramps and docks) in the Riparian Reserve.

SOP / BMP Number	SOP / BMP
Soils-24	Water Dependent Facilities • Construct boat ramps and approaches with hardened surfaces. Minimize riprap to a 4-foot width to protect concrete ramps. Docks must not be wider than 6 feet and must not include any treated wood.
Soils-25	Off-highway Vehicle (OHV) Trails • Locate new OHV trails on stable locations (e.g., ridge tops, benches, and gentle-to-moderate side slopes). Minimize trail construction on steep slopes where runoff could channel to a waterbody. • Design, construct, and maintain trail width, grades, curves, and switchbacks suitable to the terrain and designated use. Use and maintain surfacing materials suitable to the site and use, to withstand traffic and to minimize runoff and erosion. • Suspend construction or maintenance of trails where erosion and runoff into waterbodies would occur. • Locate staging areas outside Riparian Reserve. Design or upgrade staging areas to prevent sediment/pollutant delivery to wetlands, floodplains, and waterbodies, (e.g., rocking or hardening and drainage through grading or shaping). • Designate class of vehicle suitable for the trail location, width, trail surfaces, and waterbody crossings, to prevent erosion and potential sediment delivery. • Designate season of use if the trail bed is prone to erosion, rutting, gullying, or compaction, due to high soil moisture, standing water or snowmelt. • Use existing road crossings of streams and floodplains on low-volume roads and partially decommissioned roads that tie with the trail system, where safety permits. • Minimize low-water stream crossings for constructed or existing trails. Cross streams on stable substrate (e.g., bedrock, cobble) in areas of low streambanks. • Block alternate stream-crossing routes where OHV wheel slippage (acceleration/ braking) would tear down banks or deliver sediment. • Avoid public motorized vehicle use in ponds and wetlands, and navigating up or down streams and side-channels. Use suitable barriers where feasible. • Design improved stream crossings (culverts and bridges) for the 100-year flood event. • In OHV bridge structures, avoid chemically treated materials at water level contact points where leachate or solids may enter waterbodies. • Use a temporary flow diversion bypass to minimize downstream turbidity, when constructing in perennial stream crossings. • When constructing or maintaining trails within Riparian Reserve, do not cut the portion of logs or down woody material that extend into the active stream channel. Provide for adequate stabilization of the logs if not doing so would create a safety hazard. • Harden trail approaches to stream crossings using materials such as geotextile fabric and rock aggregate. • Hydrologically disconnect trails from waterbodies to the extent practicable. Install drainage features (e.g., drain dips and leadoff ditches), on approaches to stream crossings as needed to divert runoff and reinforce with rock for longevity. • Where trails intersect road ditches, provide erosion resistant crossings. Divert water from the trail to keep from reaching wetlands, floodplains, and waterbodies. • If trail width is too wide for the designated use (such as old roads converted to trails), consider tilling one side of the trail, covering with brush, and seeding or planting. • Repair rills and gullies to keep sediment from reaching wetlands, floodplains, and waterbodies. • Construct and repair water bars, drain dips, and leadoff ditches as needed. These features may need rock reinforcement to promote longevity. Self-maintaining drain dips or leadoff features are the preferred design. • Monitor trail condition to identify surface maintenance and drainage needs to prevent or minimize sediment delivery to waterbodies. • Close and rehabilitate unauthorized trails, where needed, to protect sensitive areas and water quality.

SOP / BMP Number	SOP / BMP
Soils-26	Stream Channels • In stream channels that are sensitive to disturbance (e.g., meadow streams), when practical, do not drive heavy equipment in flowing channels and floodplains. • In well-armored channels that are resistant to damage (e.g., bedrock, small boulder, and cobble-dominated), consider conducting the majority of heavy-equipment work from within the channel, during low streamflow, to minimize damage to sensitive riparian areas. • Design access routes for individual work sites to reduce exposure of bare soil and extensive stream bank shaping. • Limit the number and length of equipment access points through Riparian Reserve. • Limit the amount of stream bank excavation to the minimum necessary to ensure stability of enhancement structures. Provide isolation from flowing water during excavation. Place excavated material above the floodplain area and cover or place a berm to avoid its reentry into the stream during high-flow events. • Inspect all mechanized equipment daily for leaks and clean as necessary to ensure that toxic materials, such as fuel and hydraulic fluid, do not enter the stream. • Locate equipment storage areas at least 100 feet from any water feature, including machinery used in stream channels for more than one day. • When using heavy equipment in or adjacent to stream channels during restoration activities, develop and implement an approved spill containment plan that includes having a spill containment kit on-site and at previously identified containment locations. • Refuel equipment, including chainsaws and other hand power tools, at least 100 feet from waterbodies (or as far as possible from the waterbody where local site conditions do not allow a 100-foot setback) to prevent direct delivery of contaminants into a waterbody. • Use water bars, barricades, seeding, and mulching to stabilize bare soil areas along project access routes prior to the wet season. • Prior to the wet season, stabilize disturbed areas where soil will support seed growth, with the potential for sediment delivery to wetlands, and waters of the State. Apply native seed and certified weed-free mulch or erosion control matting in steep or highly erosive areas. If needed to promote a rapid ground cover and prevent aggressive invasive plants, use interim erosion control non-native sterile annuals before attempting to restore native seed or plants. • When replacing culverts design placement location, crossing type, and installation depth to avoid excessive scour through the site, consider using larger culverts and embedding the culvert to 30 percent bedload. Use bridges on high-gradient stream channels. • Rehabilitate headcuts and gullies. Use large wood in preference to rock weirs. • Implement measures to control turbidity such as installation of turbidity control structures (e.g., isolation, diversion, and silt curtains) immediately downstream of instream restoration work areas. Remove these structures following completion of turbidity-generating activities.
Soils-27	Soil and Water Protection BMPs • BLM-permitted activities would be required to conform to State of Alaska requirements for minimum distances from perennial waterbodies. • Minimize riparian vegetation removal to what is necessary for BLM-permitted activity. • Monitoring and Evaluation: Develop objectives that are measurable, include a time frame, and are realistic for the reclamation treatments implemented. Objectives should address requirements for soil stability, establishment of vegetation (percent cover, species diversity, and density), and invasive species control. Non-developed areas should be used as the reference for setting the standard for attainment of objectives. • No BLM-permitted surface-disturbing activities would be performed during periods when the soil is too wet to adequately support construction equipment. If equipment creates ruts more than two inches deep, the soil shall be deemed too wet to adequately support construction equipment. Any exceptions to this requirement must have prior written approval from the AO.

SOP / BMP Number	SOP / BMP
Soils-28	Permafrost Protection Measures • For all surface-disturbing BLM-permitted activities and activities that require a reclamation plan (e.g., notice-level activities) in areas with permafrost, the BLM would require the project proponent's reclamation plan to include BMPs to avoid or minimize impacts to permafrost. These BMPs could include, but are not limited to, avoidance of critical areas; applying permafrost impact prevention measures (e.g., meet conditions of appropriate snow cover and frozen ground, leave vegetation intact, implement reclamation timeline, adjust seasons for operation and overland equipment moves, use minimum impact equipment); and compliance with State of Alaska Arctic Civil Engineering Requirements, if applicable. • Surface disturbance would be avoided to the extent possible in areas with moss and peat to provide insulation to permafrost and prevent accelerated thawing. • To the extent possible, the BLM would avoid authorizing temporary routes on areas with permafrost. • BLM-permitted temporary routes constructed on permafrost should be built only in winter when snow cover and frost depth are adequate to leave vegetative layer intact. • To the extent possible, the BLM would conduct or require re-insulation of disturbed permafrost areas to prevent additional permafrost thaw, and associated possible subsidence, by restoring the natural ground surface thermal regime, particularly on steep erosion-prone soils. • Adequate snow cover (as previously defined) shall be present for snowmobile use or use of heavy equipment, which means a combination of snow and frost depth sufficient to protect the underlying vegetation and soil. When there is not adequate snow cover, use of all-terrain vehicles (ATVs) and utility terrain vehicles (UTVs) would be allowed if their use is compatible with the resource management objectives defined in this resource management plan for soils and applicable resources and resource uses. • BLM-permitted roads/airstrips would be required to incorporate necessary engineering considerations on permafrost to provide adequate base material for insulation. • Gas and oil pipelines and power utilities in permafrost areas would be required to be raised on elevated utilidors, laid on gravel foundations or pilings, or buried and sufficiently insulated to prevent permafrost degradation.

Table K-3: Water Resources and Fisheries

SOP / BMP Number	SOP / BMP
Water-1	No road crossings causing disturbance below the ordinary high water mark will be permitted in priority fish species spawning habitat, unless no feasible alternative exists.
Water-2	New, replacement, and reconstructed stream crossing structures (such as bridges and culverts) will be designed to: • Accommodate a 100-year flood event, including bedload and debris; • Maintain fish and aquatic organism passage; • Maintain channel integrity; • Accommodate mean bankfull channel widths; and • Incorporate adjacent reclamation (such as willow cuttings, wattles, brush layering) on the disturbed areas up and downstream of the abutments.

SOP / BMP Number	SOP / BMP
Water-3	Drilling is prohibited in fish-bearing rivers and streams, as determined by the active floodplain and fish-bearing lakes, except where the applicant can demonstrate on a site-specific basis that impacts would be minimal or it is determined by the AO that there is no feasible or prudent alternative. Placer exploratory drilling must use best industry practices in accordance with the approved mine plan or notice and must comply with all applicable permits. Exploratory hardrock drilling must comply with the approved plan or notice and should be conducted during periods of low water or when the area is frozen. The BLM will determine the operational criteria for exploratory drilling in accordance with 43 Code of Federal Regulations (CFR) 3809. Heavy, commercial, or exploratory equipment working in wetlands must be placed on mats, or other measures must be taken to mitigate or prevent vegetation and soil disturbance, e.g. ice roads, ice pads, 24 inches of snow cover and 12 inches of ground frost, use of low ground-pressure equipment, etc. Avoid ground operations in wetlands during spring break-up. Drilling could be allowed in these areas with appropriate mats installed and water control and 100 percent containment implemented.
Water-4	When feasible, all water intakes in fish-bearing waters will be screened and designed to prevent fish intake.
Water-5	Reclamation plans for the rehabilitation of fish habitat as required under 43 CFR 3809.420(b)(3)(ii)(E) will focus on three objectives. These requirements would be satisfied through the development of a site-specific reclamation plan based on the Natural Resources Conservation Service (NRCS) National Engineering Handbook, Part 654, Chapter 11, or a similar approach designed to result in a geomorphically stable stream patterned after reference streams in the region. Bond release would be based on meeting specific measurable objectives outlined in a monitoring plan (43 CFR 3809.401(b)(3)). These objectives are: • Provide a stable channel form that is in balance with the surrounding landform such that channel features are maintained and the stream neither aggrades nor degrades. To achieve this, it will be necessary to design a post-mining stream channel using morphological characteristics of the pre-disturbance channel and floodplain (such as bankfull and floodplain dimensions, meander patterns, design flows and velocities, riffle-to-pool ratios, substrate particle sizes, and so on), which could be derived from field surveys of the area, remotely sensed information, and/or information from adjacent watersheds that exhibit similar characteristics as the watershed proposed for mining. • Provide sufficient riparian vegetation or anchored rocks/logs to effectively dissipate stream energy, prevent soil erosion, stabilize streambanks, provide essential nutrient input, and maintain water quality and floodplain function. • Provide instream habitat complexity similar to that of pre-disturbance levels through the use of instream structures.
Water-6	Mine operators must avoid conducting mining activity in wetlands and riparian areas where possible and minimize impacts on wetlands and riparian areas that operations cannot avoid. Mine operators must reclaim disturbed stream channels and wetlands to a properly functioning condition. Wetlands and riparian areas are functioning properly when the following conditions exist: • Adequate vegetation, land form, or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality. • Filtration occurs to reduce sediment, capture bedload, and aid floodplain development. • Floodwater retention and ground-water recharge are improved. • Root masses have developed that stabilize streambanks against cutting action. • Diverse ponding and channel characteristics have developed to provide the habitat and water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses. • Greater biodiversity is supported. The BLM may use baseline data, site conditions, and site history to determine a project-specific time frame that reclamation of the stream must meet the specified functionality. Per 43 CFR 3809.420(a)(4), the BLM may specify specific stream resource mitigation measures to protect the public lands.

SOP / BMP Number	SOP / BMP
Water-7	Within high-value watersheds, Areas of Critical Environmental Concern (ACEC) and wild and scenic river (WSR) baseline hydrological data adequate to characterize the seasonal flow patterns and discharge will be required prior to surface-disturbing activities with the potential to affect stream channel integrity, reduce riparian functioning condition, or, reduce the Watershed Condition Rating. The BLM will be available to advise operators on the exact type of information and detail needed to meet this requirement. In these special management areas, reclamation plans will be designed to result in rehabilitation of habitats within an accelerated timeframe (such as less than 3 years) and will focus on enhanced revegetation techniques in floodplains, coupled with the standards and practices that have been demonstrated to result in creation of a geomorphically stable channels on placer mined streams in Alaska.
Water-8	No low-water crossings (fords) will be permitted in priority fish species spawning habitat during times of active spawning and when immobile life stages of fish are present (eggs and alevins) unless it is determined that impacts would be negligible.
Water-9	Streams altered by channeling, diversion, or damming will be restored to a condition that maintains or improves aquatic and riparian habitats to pre-disturbance levels. For mining operations, Reclamation of the altered stream will be measured by the criteria identified in SOP Water-5 and Water-6.
Water-10	Where instream operations are authorized, streams must be diverted using an appropriately sized bypass channel that is stable and resistant to erosion. For mining operations, Reclamation of the altered stream will be measured by the criteria identified in SOP Water-5 and Water-6.
Water-11	In mining operations and fluid mineral leasing operations, all process water and ground water seeping into an operating area must be treated appropriately (i.e., use of settling ponds) prior to re-entering the natural water system.
Water-12	Settling ponds will be cleaned out and maintained at appropriate intervals to comply with State and federal water quality standards. Fine sediment captured in the settling ponds will be protected from washout and left in a stable condition at the end of each field season to prevent unnecessary or undue degradation to the environment during periods of non-operation. Where not specifically specified in the mine plan, fines should be removed from the settling ponds where they can be mixed into the reclamation soils to facilitate fines replacement. Settling pond fines shall not be stockpiled without proper erosion control measures installed to prevent the erosion and transportation of fines. Erosion control measures can include placing berms around the base of the stockpile, covering the stockpile with a synthetic liner, temporarily covering the fines with topsoil and vegetation.
Water-13	Streams altered by channeling, diversion, or damming will be restored to a condition that will allow for proper functioning of the riparian zone, stream channels, wetlands, and watersheds. Active streams will be returned to the natural water course or a new channel will be created at its lowest energy state (valley bottom) that approximates the old natural channel in shape, gradient, and meander frequency using natural channel design. Reclamation of these streams will be performed using Natural Channel Design approaches (Chapter 11, National Engineering Handbook, Part 654), which was developed using a functional lift model and provides direction on the detailed baseline environmental information that must be collected prior to stream impacts
Water-14	All permitted operations will be conducted in a manner to not block any stream or drainage system.
Water-15	To the extent feasible and practicable, channeling, diversion, or damming that will alter the natural hydrological conditions will be avoided. This is not intended to preclude activities that by nature must occur within floodplain-riparian areas, such as placer mining.
Water-16	Structural and vegetative treatments in riparian, wetland, and floodplain areas will be compatible with the ecological capability of the site, including the system's hydrologic regime, and will contribute to maintenance or restoration of natural and proper functioning conditions (Executive Order 11988). For mining operations, BLM-Alaska Stream Reclamation Policy would apply.
Water-17	Projects requiring the withdrawal of water will be designed to maintain sufficient quantities of surface water and contributing groundwater to support fish, wildlife, and other beneficial uses. Minimal flows will be monitored to assure aquatic life forms are not impacted by withdrawals (such as strandings or freeze out).
Water-18	State-designated stream crossings will be used where possible for vehicle travel. Stream crossings are online at http://www.habitat.adfg.alaska.gov/gpvehstreamxings.php, noted under the General Permits Index-Authorized Vehicle Stream Crossings.

SOP / BMP Number	SOP / BMP
Water-19	Rivers and streams will be crossed by vehicles at shallow riffles from point bar to point bar, where possible, to minimize impacts to stream banks and riparian vegetation.
Water-20	When a stream must be crossed, the crossing will be as close to possible to a 90 degree angle to the stream. Stream crossings will be made at stable sections in the stream channel (which have low sensitivities to disturbance and low streambank erosion potential), based on Rosgen channel type evaluations.
Water-21	Disturbed stream banks will be recontoured and revegetated (or other protective measures taken) to prevent soil erosion into adjacent waters and provide stream bank stability. Active stream bank revegetation or other stabilization techniques will be required for all erosion-prone areas (such as stream bank and near stream areas) and active seeding and/or fertilization will be required for sites with little to no organic content (i.e., essentially bare mineral soil).
Water-22	Protect, restore, and maintain wetland-floodplain, ecosystems to achieve a healthy and proper functioning condition that assures physical and biological diversity, productivity, and sustainability.
Water-23	Wetland-floodplain sites vary in physical, chemical, and biological characteristics, resource conditions, and local use impacts. Therefore, the objectives and management designed for an area shall be tailored to the conditions, conflicts, capability and improvement potential, and land use considerations on a watershed-specific basis. Wetland-floodplain mitigation measures developed using an interdisciplinary approach should be achievable, specific, and measurable.
Water-24	Management actions should permit the natural functions of streams, including flood energy dissipation, bank building, stream-channel maintenance, filtration of sediment and other contaminants, water-storage, and aquifer recharge to operate without significant alteration. To accomplish these actions or functions, it is necessary to evaluate the interrelationships between wetland-floodplain systems and the hydrologic and geomorphic processes of the watershed.
Water-25	Avoid overland heavy equipment moves through wetlands in spring and summer. Stipulations and mitigating measures are provided on a case-by-case basis to ensure wetland conservation and practical management.
Water-26	Identify, encourage, and support research and studies needed to ensure that floodplain-wetland area management objectives can be properly defined and met. Incorporate research findings into the planning and management of floodplain-wetland ecosystems.
Water-27	Activities in wetlands will comply with Federal Clean Water Act and State of Alaska permit requirements related to the fill, removal, and alteration of wetlands.
Water-28	Projects will be designed to protect water quality and to comply with Federal Clean Water Act and State of Alaska water quality standards.
Water-29	All mining operations should incorporate appropriate BMPs from the Alaska Stormwater Guide.
Water-30	Where appropriate, overburden should be placed on uplands or on the upland side of mine pits.
Water-31	Projects requiring water withdrawal, diversion or de-watering will be designed to maintain sufficient quantities of surface and contributing ground water to sustain processes that affect fresh water resources, and to support fish, wildlife and other beneficial uses. Water withdrawal, diversion and de-watering regimes are subject to constraints developed through project-specific National Environmental Policy Act (NEPA) analysis.
Water-32	Water withdrawal from lakes may be authorized on a site-specific basis depending on size, water volume, depth, fish population, and species diversification.
Water-33	It is preferred that access and human activity in wetlands occur in the winter months, with sufficient snow cover and ground frost to prevent wetland vegetation and soil disturbance. Avoid ground operations in wetlands during spring break up.
Water-34	Where appropriate, maintain appropriate vegetation and riparian buffers around waterbodies to protect water quality and ensure wildlife habitat suitability is maintained. Manage riparian areas to provide adequate shade, sediment control, bank stability, and recruitment of wood into stream channels.
Water-35	Riparian vegetation, if removed during operations, will be re-established.

SOP / BMP Number	SOP / BMP
Water-36	Roads, well pads, and other oil and gas facilities are not allowed within the 100-year floodplain of fish-bearing rivers and lakes unless the lessee can demonstrate (through a site-specific analysis that considers species of fish present, slope, vegetation, and other conditions) that the impacts to fish habitat are minimal. BLM-Alaska Stream Reclamation Policy applies to mining operations.
Water-37	The design and location of permanent oil and gas facilities within the 100-year floodplain area of fish-bearing waterbodies or within the 50-year floodplain of non-fish-bearing waterbodies will only be approved on a case-by-case basis if the lessee can demonstrate that impacts to fish, water quality, and aquatic and riparian habitats are minimal.
Water-38	Development within floodplains will be avoided. The 8-step process as identified in Executive Order 11988: Floodplain Management will be followed: 1. Determine if a proposed action is in the base floodplain (that area which has a 1 percent or greater chance of flooding in any given year). 2. Conduct early public review, including public notice. 3. Identify and evaluate practicable alternatives to locating in the base floodplain, including alternative sites outside of the floodplain. 4. Identify impacts of the proposed action. 5. If impacts cannot be avoided, develop measures to minimize the impacts and restore and preserve the floodplain, as appropriate. 6. Reevaluate alternatives. 7. Present the findings and a public explanation. 8. Implement the action (following pre-development actions) where there is no practical alternative to floodplain development.
Water-39	The following provisions apply to river or steam fording: • Crossing of water courses shall be made using a low-angle approach to avoid disruption of the natural stream or lake bank. Except at approved crossings, operators are encouraged to cross a minimum of 100 feet upstream or downstream of where overwintering fish are present. • For permitted use, when possible, snow ramps or snow bridges would be used at water crossings for bank protection. The ramps and bridges shall be substantially free of soil and debris. Snow bridges shall be removed or breached immediately after use or before spring breakup. • Prohibit crossing of anadromous stream with motor vehicles without a State of Alaska stream crossing permit. Work in partnership with the State of Alaska to determine appropriate steam crossing locations. • To avoid additional freeze-down of deep-water pools harboring over wintering fish, watercourses shall be crossed at shallow riffle areas from point bar to point bar. • Compaction or removal of the insulating snow cover from the deep-water pool areas of rivers or streams must be avoided unless approved by the AO and then only on a case-by-case basis if the AO determines the pool is deep enough to prevent complete freeze-down.
Water-40	Vehicular travel up and down streambeds except by watercraft is prohibited unless ice is frozen to a sufficient depth to sustain the activity and the stream banks are a sufficient distance apart to allow for passage without adverse impacts to the banks.

SOP / BMP Number	SOP / BMP
Water-41	The following provisions apply to the development, construction or use of roads, bridges, and culverts in rivers, streams, and wetlands: • Bridge or culvert construction shall comply with specifications provided by BLM engineering, hydrology, and fisheries staff, the Alaska Department of Natural Resources and other appropriate agencies. • Authorization holders of BLM-permitted activities shall furnish and install culverts of the gauge, materials, diameter, and length indicated and approved by the AO. Culverts shall be free of corrosion, dents, or other deleterious conditions. Culverts shall be placed on channel bottoms on firm, uniform beds that have been shaped to accept them and aligned to minimize erosion. Backfill shall be thoroughly compacted. No equipment shall be routed over a culvert until backfill depth is adequate to protect the culverts. • The holder would construct low-water crossings in a manner that will prevent any blockage or restriction of the existing channel. Material removed shall be stockpiled for use in rehabilitation of the crossings. • The holder would design and construct adequate water-control structures in each drainage crossing to prevent excessive erosion along the culvert and protect the culvert from the natural erosion process within the drainage. This design will account for any observed changes in hydrologic flow regimes due to climate change. • Bridge and culvert design and installation shall incorporate established techniques, modified where necessary for implementation in an Arctic or Sub-arctic environment, such as those found in: a) Stream Crossing Design Procedure for Fish Streams on the North Slope Coastal Plain, by G.N. McDonald & Associates, dated June 1994; b) Forest Practices Technical Note Number 4: Fish Passage Guidelines for New and Replacement Stream Crossing Structures, by the Oregon Department of Forestry, dated May 10, 2002; c) Fundamentals of Culvert Design for Passage of Weak Swimming Fish, by Behlke et al., dated 1991; and other pertinent and appropriate guidance, including Executive Orders 11990 and 11988. • Bridge and culvert designs and installations shall account for the effects of channel scour and constriction. • The minimum diameter for culverts will be 18 inches. • River, stream, and wetland crossings and culvert installations shall be designed and constructed to ensure free passage of fish, maintain natural stream bedload movement and sediment transport, and minimize adverse effects on natural stream flow. • No road crossings shall be permitted in crucial spawning habitat, unless no feasible alternative exists and it can be demonstrated to the satisfaction of the AO that no long-term adverse effects will occur. • Bridges and culverts will be designed to avoid altering the direction and velocity of stream flow or interfering with migrating, rearing, or spawning activities of fish and wildlife. Bridges and culverts should span the entire non-vegetated stream channel. • Roads will cross riparian zones and water courses perpendicular to the main channel.
Water-42	Any proposal to use or develop the lands, waters, or resources within active stream channels or within the 100-year floodplain area of active stream channels must demonstrate to the satisfaction of the AO that such use or development: • Will not adversely alter the condition and ecological function of aquatic and riparian systems by impacting water quality, stream flow, velocity, ground water hydrology, channel connectivity, channel form, material recruitment, substrate composition, energy (food) flow, and riparian function; • Will not diminish the quality and diversity of habitats needed to sustain the production of fish and wildlife populations at their natural potential; or • Is outside the 100-year floodplain area of these water courses. • Mining operations will comply with all regulations and conditions of approval to ensure appropriate reclamation of stream and floodplain resources.
Water-43	Salable mining gravel from fish-bearing streams will be prohibited.
Water-44	Scraping salable gravel from 100-year floodplain areas and fish-bearing streams will be prohibited. Buffers adjacent to or outside the 100-year floodplain areas will be maintained to allow for natural channel pattern, form, and function.

SOP / BMP Number	SOP / BMP
Water-45	Timber sales will include buffers to prevent disturbance of priority fish species habitat and sedimentation into streams. Buffer widths will be dependent on harvest method, season of harvest, equipment used, slope, vegetation, soil type, and 100-year floodplain areas for appropriate fish-bearing locations. Winter operations will be considered in order to avoid the need for road building and reduce impacts to soils, vegetation, and riparian areas.
Water-46	For BLM-permitted activities, no storage of hazardous materials would be allowed within the 100-year floodplain of rivers or streams or within 100 feet of the water mark of surface waters not in a 100-year floodplain, such as lakes, ponds, springs, and wetlands. Exceptions may be allowed on a case-by-case basis when approved spill prevention practices are implemented to prevent accidental release of the hazardous materials. Activities excepted can include but are not limited to loading or unloading watercraft or floatplanes used to transport bulk or containerized hazardous materials; or refueling motorboats, float planes, ski planes, etc. Wildland fire management activities such as refueling equipment (pumps, drip torches, and chainsaws) and storage of the associated fuel, are specifically excepted from these prohibitions. Although fuels may be off-loaded from aircraft on ice, fuels shall not be stored on lake or river ice

Table K-4: Vegetation

SOP / BMP Number	SOP / BMP
Veg-1	Design and locate permanent and temporary facilities to minimize the development footprint.
Veg-2	Where populations or individual sensitive status plant species are located, take measures to protect these populations or individuals through site-specific buffers or management prescriptions. Route new roads and trails away from known sensitive plant communities, with minimum 100-foot buffers; and minimize summer cross-country OHV travel where there are sensitive plants.

Table K-5: Wildlife and Special Status Species

SOP / BMP Number	SOP / BMP
Wildlife-1	Design pipelines and roads to allow the free movement of wildlife and the safe, unimpeded passage of the public while participating in traditional subsistence activities. The currently accepted design practices are: 1) Above-ground pipelines will be elevated a minimum of 7 feet, measured from the ground to the bottom of the pipeline at vertical support members, to facilitate human and wildlife movement under the pipe; 2) In areas where facilities or terrain may funnel caribou movement, ramps over pipelines or buried pipelines may be required; 3) Co-locate roads and pipelines to address impacts to wildlife and subsistence; and, 4) Where feasible, maintain a minimum distance of 500 feet between above-ground pipelines and roads.
Wildlife-2	From October 31 through April 1, avoid mineral exploration and prospecting in areas identified by the Alaska Department of Fish and Game (ADF&G) as caribou wintering habitat, or mineral exploration activities should avoid areas where caribou are present, or known caribou wintering, calving areas and migration corridors. If no feasible alternative exists, no winter activity will commence in a potential caribou habitat area between October 31 and November 15, and qualified personnel will conduct a preliminary site survey within the two-week period prior to an activity's projected start date to establish caribou presence or absence. If caribou are present, temporary activities will be delayed until caribou have left the habitat. Approval of long term or permanent activities is dependent upon NEPA analysis, the extent and duration of impacts, particularly habitat fragmentation and the propensity to displace the animals, and the ability to devise appropriate mitigation measures.

SOP / BMP Number	SOP / BMP
Wildlife-3	Operations requiring vegetation clearing should avoid migratory bird-nesting areas when birds are present and likely to be nesting/fledging during May 1-July 15. BLM will conduct a site-specific study to determine if migratory bird nesting is applicable to the area. If nesting habitat is found, then approval of long-term or permanent activities is dependent upon NEPA analysis, the extent and duration of impacts, and the ability to devise appropriate mitigation measures. If no feasible alternative exists, qualified personnel will conduct a preliminary site survey within 2 weeks of an activity's projected start date to establish species' presence. If present, short-term activities will be delayed until the species have left the habitat.
Wildlife-4	Employ industry-accepted best management practices to minimize raptors and other birds from colliding with or being electrocuted by utility lines, alternative energy structures, towers, and poles (http://www.aplic.org/). Where economically, technically, and logistically feasible, the BLM would require the burying of utility lines in raptor nesting areas. Where raptors are likely to nest in human-made structures (such as cell phone towers) and such use could impede operation or maintenance of the structures or jeopardize the safety of the raptors; equip the structures with either 1) devices engineered to discourage raptors from building nests, or 2) nesting platforms that will safely accommodate raptor nests without interfering with structure performance. Follow BMP in accordance with Avian Power Line Interaction Committee for electrical lines. Guidelines for towers should follow U.S. Fish and Wildlife Service (USFWS) guidelines for towers.
Wildlife-5	The use of guy wires on towers should be avoided in known raptor or waterbird concentration areas or in major avian migration routes if possible. However, if tall towers require the use of guy-wired apparatus, regardless of purpose, they will be marked in accordance with the guidance provided by the USFWS Guidance on the Siting, Construction, Operation, and Decommissioning of Communications Towers, dated September 14, 2000, or a more current or contemporaneous version of that guidance.
Wildlife-6	To minimize the potential for disease transmission to wildlife, applications for the use of domestic sheep, goats, alpacas, llamas, and other similar species in Dall sheep habitat shall be reviewed on a project-specific basis.
Wildlife-7	Mining-related operations in caribou calving and overwintering areas will be reviewed on a case-by-case basis to develop site-specific requirements to reduce impacts to caribou. These criteria will be implemented as Decision Records Stipulations in accordance with the Mine Plan and 43 CFR 3809.
Wildlife-8	All reasonable precautions will be taken to avoid attracting wildlife to food and garbage. Garbage from all BLM-authorized activities will be removed and properly disposed to prevent habituation of wildlife or alteration of populations. The BLM may require food and garbage to be stored in bear-proof containers or by methods that make it unavailable to bears or other wildlife.
Wildlife-9	From May 1 through August 31, avoid sustained human activity within one-quarter mile of trumpeter swan nests and rearing ponds. No activity will commence prior to May 15 and, if necessary, qualified personnel will conduct a preliminary site survey within the 2-week period prior to the projected start date of the activity to determine trumpeter swan presence. If present, short-term activities will be delayed until after nesting trumpeter swans and cygnets have left the habitat. Exceptions may be granted by the AO, following NEPA analysis, if no feasible alternative exists.
Wildlife-10	Overhead powerline construction will be avoided in primary trumpeter swan breeding habitat. Recreational developments, permits, or leases on lakes or lakeshores with historically active trumpeter swan nest sites or staging areas will only be allowed if the lessee or permittee can demonstrate on a site-specific basis that impacts will be minimal or it is determined that there is no feasible or prudent alternative.
Wildlife-11	Post mining rehabilitation of fish and wildlife habitat will be required. Reclamation and revegetation of disturbed areas will be required to meet performance standards set in site-specific reclamation plans, such as required plant cover (percent) within a certain number of years before a performance bond is released.
Wildlife-12	To prevent the entrapment of small animals, particularly birds, all hollow pipes or tubes that are 2 to 10 inches in diameter will be filled or capped prior to installation (unless fixed horizontally). Mining claim posts shall be capped. Preference shall be made to the use of solid wood or metal posts.
Wildlife-13	Fish and wildlife habitat on public lands will be maintained and protected, and the habitat needs of fish and wildlife resources necessary to maintain or enhance such populations will be provided.
Wildlife-14	Management practices will consider protection and conservation of biodiversity.
Wildlife-15	The best demonstrated and available technologies and methods will be used to prevent permanent facilities from providing nesting, denning, or shelter sites for ravens, raptors, and foxes to protect ground nesting birds from increased predation.

SOP / BMP Number	SOP / BMP
Wildlife-16	Permanent or semi-permanent access routes, regardless of purpose, shall be routed and concentrated to minimize habitat fragmentation.
Wildlife-17	From April 1 to August 31, human intrusion within 200 meters (656 feet) of bald eagle nests is prohibited absent written approval from the USFWS.
Wildlife-18	Within defined moose winter range, the following uses will not be permitted from October 15 to March 31: a) surface-disturbing activities, or b) Federal Land Policy and Management Act (FLPMA) leases or permits that exceed 14 days of activity. Aircraft associated with permitted activities will maintain an altitude of 2,000 feet. Exceptions to this SOP may be granted for mining operations where no feasible alternative exists and where mitigation measures can be identified to minimize impacts. Exceptions may also be granted for other activities based on site-specific analysis and documented non-occupancy of the specific area by moose.
Wildlife-19	Within one-quarter mile of bald eagle nests, the following uses will not be permitted from April 1 to August 31: a) surface disturbing activities, or b) FLPMA leases or permits. Aircraft associated with permitted activities will maintain an altitude of 1,000 feet within one-half mile of documented eagle nests. Exemptions to this SOP may be granted for mining operations where no feasible alternative exists and where mitigation measures can be identified to minimize impacts. Appropriate buffers around other raptor nests will be determined based on site-specific analysis.
Wildlife-20	In crucial Dall sheep and mountain goat habitat, helicopters used in support of permitted activities will maintain one-half mile horizontal and 1,500 meter (4,921 feet) vertical distance from goats and sheep. Helicopter landings, unless for emergency purposes, are not permitted in Dall sheep or goat crucial ranges, as identified based on ADF&G maps and refined by monitoring.
Wildlife-21	Survey for special status species and other species of concern within a project area when a project is proposed to accurately determine baseline conditions. Design the project to avoid (if possible), minimize, or mitigate impacts on resources if there could be any potential negative impacts.
Wildlife-22	Minimize the potential spread of white nose syndrome in bats in caves and abandoned mines by applying containment and decontamination procedures..
Wildlife-23	To minimize habitat loss, the surface disturbance and the aerial extent of facilities will be minimized. The amount of cumulative vegetation clearing and surface disturbance will be minimized through an integrated review of planned disturbance between all land users.

SOP / BMP Number	SOP / BMP
Wildlife-24	Priority raptor species are defined as peregrine falcon, gyrfalcon, golden eagle, and bald eagle. Nesting seasons are defined as from April 15–August 15 for bald eagles, golden eagles, and peregrine falcons and from March 15–July 20 for gyrfalcons. Permitted surface-disturbing activities would be required to conduct a pre-work priority raptor nesting surveys. Exceptions to these raptor SOPs may be applied by the AO in situations where no practicable alternative exists; disturbance is adequately mitigated by site characteristics such as topography or vegetation, or by known tolerance of nesting birds to activities at the location, or where raptors establish nests near previously constructed facilities. To minimize the direct loss of priority raptor foraging habitat, all reasonable and practicable efforts will be made to locate permanent facilities as far from priority raptor nests as feasible and to minimize habitat loss to the extent feasible. Of particular concern for avoidance are ponds, lakes, streams, wetlands, and riparian habitats. To minimize disturbance to nesting priority raptors, aircraft authorized by the BLM are required to maintain an altitude of at least 1,500 feet above ground level when within one-half mile of priority raptor nesting sites during nesting season. This protection is not intended to restrict flights necessary to conduct wildlife surveys satisfying wildlife data collection requirements. To reduce disturbance to nesting priority raptors, campsites authorized by the BLM, including short- and long-term camps and agency work camps, must be located at least 500 meters from any known priority raptor nest site during the nesting season. Exceptions may be granted by the AO if no feasible alternative exists. Authorized human activity within 500 meters of priority raptor nest sites will be minimized during the nesting season. The cumulative number of authorized visits (defined as each day in which work is done within 500 meters of a nest site) to any nest site per nesting season, by all authorized users, must be limited to three visits per nest site. Exceptions may be granted by the AO if no other feasible alternative exists. To reduce disturbance impacts to priority raptors, motorized ground-vehicle use must be minimized within 1 mile of any known priority raptor nest during the nesting season. Such use is prohibited within one-half mile of nests during the nesting season, unless an exception is granted by the AO. Construction within one-half mile of known priority raptor nests is prohibited during the nesting season. No facilities that will be used or accessed during the nesting period (including the area of associated human activity by facility users) can be constructed within one-half mile of known priority raptor nesting sites. Exceptions may be granted by the AO if no feasible alternative exists.
Wildlife-25	Vegetation clearing or introduction of domestic animals in riparian and wetland areas must maintain the properly functioning condition and hydrologic regime.
Wildlife-26	When authorizing mineral material sale sites, avoid habitats crucial to local wildlife populations such as calving areas or raptor nesting sites. Avoid key geomorphic features such as river cut banks and associated riparian zones; springs; active channels of small, single channel rivers; and wetlands.
Wildlife-27	**Goal**: Prevent avoidable damage from proposed land uses to habitats supporting special status species animals and their habitats. **Stipulation:** The lease area may contain or be identified with special status species or their habitats. BLM may require applicants to avoid or minimize impacts to these species pursuant to BLM policy and Endangered Species Act consultation. **Areas Where Stipulations Apply:** Areas open to fluid or hardrock mineral leasing. **Exception:** None. **Modification:** None. **Waiver:** None.

Table K-6: Wildland Fire

SOP / BMP Number	SOP / BMP
Fire-1	Utilize active management BMPs such as mowing., pre-commercial and commercial thinning, manual and mechanical cutting, linear fuel breaks, biological and chemical treatment, access road maintenance , prescribed fire and controlled burns, timber salvage, timber and biomass sales, piling, yarding, removing vegetative material, selling of vegetative products (including, but not limited to: firewood; biomass; timber; and fence posts), issuing grazing permits, application of pesticides, bio-pesticides and herbicides, seeding native species, invasive species management, jackpot and pile burning, fuels conversion to a less flammable type such as spruce to hardwoods, shearblading, and shaded fuel breaks.
Fire-2	Off-road use of heavy equipment and other motorized vehicles in wildland fire suppression or management activities requires approval of the AO. Any such use will be conducted in a manner that minimizes erosion and riparian area damage, avoids water quality or fish habitat degradation, and does not contribute to stream channel sedimentation.
Fire-3	Fire management in high-value watersheds, lands managed for wilderness characteristics as a priority, ACECs, the Iditarod National Historic Trail (INHT) National Trail Management Corridor, and the Unalakleet Wild River Corridor, will be implemented without OHVs, heavy equipment, or other surface-disturbing vehicles.
Fire-4	Aerial and ground delivery of wildland fire chemicals on BLM-managed public lands will comply with the most current interagency and BLM policy (2016 Interagency Standards for Fire and Fire Aviation Operations, Chapter 12 or subsequent versions [DOI et al. 2018]).
Fire-5	Minimum Impact Suppression Techniques (MIST) will be considered for all fire management actions on BLM-managed public lands within the planning area.
Fire-6	Fire lines to mineral soil will not be built in or around riparian areas, unless they are needed to protect life, property, and/or wetland resources. Use natural features as preferred firebreaks over fire lines constructed to mineral soil. When possible, use hand crews to establish fire lines within (or adjacent to) riparian areas.
Fire-7	Firefighting camps will use appropriate food storage and deterrent techniques for bears.
Fire-8	To the extent practicable, manned and unmanned aircraft will avoid overflights within 1,500 feet of known occupied raptor nests during fire management activities.
Fire-9	Fire management actions, including prescribed fire operations, wildland fire suppression, and fire rehabilitation efforts, will protect burned and adjacent areas from the introduction and spread of nonnative invasive plants. Protection may include the use of washing stations with a containment system.
Fire-10	The responsible fire protection agency/organization would be required to use BMPs for cleaning and inspection of personal gear, tools, and all equipment prior to deployment to fire sites. Washing stations used for cleaning would be required to have a containment system.
Fire-11	Water delivery aircraft will not dip or scoop from waters infested by Elodea or other aquatic invasive species.
Fire-12	Suppression repair plans will be developed and implemented at the incident level to address resource damage caused by wildfire management actions.
Fire-13	Emergency stabilization and rehabilitation (ES&R) plans will be developed and implemented for inventorying, monitoring, and treatment of adverse fire effects that threaten life or property or natural and cultural resources resulting from the natural effects of a wildfire. The BLM will prioritize natural recovery from wildfire (USDA et al. 2006). Plans will be developed on a case-by-case basis.
Fire-14	Work with interdisciplinary team during the project design phase to address permafrost and soils, habitat, watershed, fisheries, hydrology, hazmat, sensitive species, visual resource management, air quality and other concerns.
Fire-15	Maximize the utilization of natural barriers and physical features (such as roads and rights-of-way) within landscapes when designing fuel breaks and other vegetative treatments.
Fire-16	Use unmanned aerial systems (UAS) as a tool for wildland fire prevention, suppression, and landscape rehabilitation.

Table K-7: Cultural Resources

SOP / BMP Number	SOP / BMP
Cult-1	Make every effort to avoid adverse impacts if cultural sites are found at project locations. Cultural resource protections and conservation will be consistent with Section 106, Section 110, and Section 101d; procedures under BLM's 2012 National Programmatic Agreement for Section 106 compliance or its successor agreement; and the 2014 Protocol for Managing Cultural Resources in Alaska between BLM Alaska and the Alaska State Historic Preservation Officer (SHPO) or its successor agreement. Regarding permitted mining activities, all parties will be consistent with 36 CFR 3809.420(b)(8), including accelerated timeframes for evaluation and mitigation. Consult with the SHPO and the Advisory Council on Historic Preservation (ACHP) in accordance with the State Protocol Agreement between the BLM and SHPO, dated February 5, 2014.
Cult-2	Mitigation measures will be considered for all actions that may potentially affect cultural resources per Section 106 of the National Historic Preservation Act (NHPA) (54 United States Code 306108) and its implementing regulations. As noted in 36 CFR 800.1(a), federal agencies must "seek ways to avoid, minimize, or mitigate any adverse effects on historic properties." The extent and nature of recommended mitigation will be commensurate with the significance of the cultural resource involved and the anticipated extent of the damage. Costs for mitigation will be borne by the land use applicant. If the AO determines mitigation measures are necessary to protect and conserve cultural resources, a mitigation plan will be developed and implemented in consultation with the SHPO, and following the requirements and guidance of the NHPA and 36 CFR 800.
Cult-3	Where a proposed undertaking may affect the physical integrity of a historic property, measures can be applied to reduce or eliminate the effects. BLM archaeologists work with the contracting archaeologist and project proponent to determine which practice would suit the needs of all parties. Application of BMPs depends on the nature of the undertaking and the nature of the historic property.
Cult-4	Avoidance, through modification of the proposed undertaking, is the primary and preferred measure used to protect cultural resources. This can be accomplished at the project planning stage.
Cult-5	Monitoring–Where avoidance of adverse effects is not feasible, or there is a determination of no adverse effects but the potential remains for adverse effects through inadvertent discovery, a BLM-permitted archaeologist will monitor surface-disturbing activities. The presence of the monitors is to ensure that previously unknown cultural materials are immediately identified and construction in that area is halted to avoid further impacts to the resource. Before BLM authorization of the project, the project proponent submits a discovery plan outlining how the resources will be treated and the responsibilities of the project proponent and its subsidiaries. BLM archaeologists will review this plan, and it will be submitted to SHPO for concurrence. In the case where monitoring results in a discovery situation, the discovery plan is implemented. Depending on the nature of the discovery, the project may be allowed to proceed or be redesigned. Data recovery may also be required.

SOP / BMP Number	SOP / BMP
Cult-6	Standard Measures to Reduce Visual Contrast–When a proposed project is found to be within the contributing setting of a historic property, an assessment of potential impacts is conducted through viewshed analyses, on-site inspection, and photo inspection. For historic trails such as INHT, protection measures would be carried out similarly to other historic properties if any project were found to be located within designated buffer of a contributing portion of the historic trail. When a proposed project is outside of the designated buffer of the trail but found to be within the viewshed that contributes to National Register of Historic Places (NRHP) eligibility, analyses of potential impacts to the integrity of the setting will be carried out in the same way as other properties where setting is an aspect of integrity. BMPs used to ensure that the contributing viewshed of historic properties is not adversely affected include the following: • Consolidating project facilities among oil, gas and geothermal developers, which also facilitates cumulative analysis • Developing coordinated road and pipeline systems • Reducing the amount of surface development by consolidating facilities (e.g., develop bottom hole wells using directional drilling from a single surface well location) • Using low-profile facilities • Using proper sighting and location to maximize the use of topography and vegetation to screen development • Designing projects to blend with topographic forms and existing vegetation patterns • Using environmental coloration or advanced camouflage techniques to break up visual intrusion of facilities that cannot be completely hidden • Using broken linear patterns for road developments to screen roads as much as possible (including feathering or blending of the edges of linear ROWs to break up the linearity) • Using electric fencing with low-visibility fiberglass posts and environmental colors (e.g., sage green) for livestock control • Designing linear facilities and seismic lines to run parallel to key observation points rather than perpendicular • Crossing the historic trails at right angles with linear developments when it would reduce the physical and visual impact • Modifying the orientation of facilities to present less of a visual impact (e.g., a facility with several tanks lined up so that one obscures the visibility of the others
Cult-7	Mitigation–Mitigation measures are determined by the types of proposed actions, the nature of the potential effect, and the qualities of the historic property that render it eligible for NRHP listing. As noted in 36 CFR 800.1(a), federal agencies must "seek ways to avoid, minimize, or mitigate any adverse effects on historic properties." Mitigation measures are applied when best management practices will not reduce or minimize impacts to a less than adverse effect. Mitigation may include data recovery or other agreed-upon measures. Consultation with the Alaska SHPO and the ACHP is required when proposed actions are expected to adversely affect properties eligible for the NRHP and mitigation is determined to be the best course of action.
Cult-8	Data Recovery–There are two times during a project when data recovery may be implemented. The first is before project construction when it is determined that there will be an adverse effect on an NRHP-eligible property. In this case, the project proponent, the AO, and the SHPO work together to develop a data recovery plan that will mitigate the adverse effects. The second is after a discovery situation when it is determined that the project has already adversely impacted a historic property. Again, the project proponent, the AO, and SHPO work to develop a plan that mitigates all effects of the construction. Data recovery in itself is a destructive process; thus, it must be carried out in a way to successfully retrieve all pertinent information from the site.

SOP / BMP Number	SOP / BMP
Cult-9	Native American–In addition to consultation with the Alaska SHPO office, BLM conducts Native American consultation in compliance with BLM's 1780 manual and handbook on Native American consultation (released 2016), Section 106 of the NHPA, the American Indian Religious Freedom Act of 1978, Executive Order 13007, and the Alaska Native Claims Settlement Act (ANCSA). The BLM has created a process for conducting Native American consultation for federal undertakings, as described in BLM Manual 8120 and BLM Manual H-8120-1. The BLM has worked extensively with tribes who have traditional ties to the region to establish a protocol for consultation. Consultation with Native American tribes occurs during the planning process of Environmental Impact Statements and when individual projects are proposed that may impact properties that have traditional use (i.e., traditional cultural properties [TCP]) or are sacred to Native American cultures. When one of these site types is identified within proximity to a proposed undertaking, the project proponent and tribal governments are notified. Determinations of eligibility and effects the project may have on the site are made in consultation with tribal representatives. The BLM does not authorize any undertaking that has the potential to affect TCPs or Native American sacred sites without first consulting with tribes. The likelihood of inadvertently affecting a TCP or sacred site is low because of the established protocols the BLM has developed with tribal representatives.
Cult-10	In accordance with 43 CFR, Part 10.4(g), the holder of a BLM authorization to carry out land use activities on federal lands, including all leases and permits, must notify the BLM by telephone and in writing immediately on the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony.
Cult-11	In accordance with 43 CFR, Parts 10.4(c) and (d), activities must stop in the immediate vicinity of the discovery. The discovery must be protected from the authorized activity for 30 days or unless otherwise notified by the BLM.
Cult-12	All BLM activities and BLM-authorized activities shall comply with the following: • Related Alaska SHPO guidance on inventory for buildings and structures, and any successor editions • BLM Manual 1780 (Native American Consultation) • BLM Manual 8100 • BLM Manual 8120 (Tribal Consultation under Cultural Resources Authorities) • BLM Manual Handbook H-8120-1 (General Procedural Guidance for Native American Consultation) • Current State Protocol Agreement between BLM, Alaska, and the Alaska SHPO unless some other agreement, such as a programmatic agreement, has established approved alternative procedures.
Cult-13	For oil and gas activities, cultural resource protection is covered under the standard lease terms.
Cult-14	Management practices will consider protection and conservation of known cultural resources, including historical sites, prehistoric sites, and plant and animal populations of significance.
Cult-15	Any cultural resource discovered by a user, permittee, or claimant or any person working on their behalf on public land will be immediately reported to the AO. The user, permittee or claimant or any person working on their behalf will suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the AO. An evaluation of the discovery will be made by the AO to determine appropriate actions to prevent the loss of significant cultural or scientific values. This may include the professional collection and analysis of significant specimens by scientists. After scientific study, appropriate mitigation measures will be developed and implemented.

Table K-8: Paleontological Resources

SOP / BMP Number	SOP / BMP
Paleo-1	Avoidance, through modification of the proposed undertaking, is the primary and preferred measure used to protect paleontological resources. This can be accomplished at the project planning stage supported by site assessments completed by qualified BLM or BLM-permitted paleontologists.

SOP / BMP Number	SOP / BMP
Paleo-2	Monitoring–In situations where avoidance of adverse effects is not feasible, or there is a determination of no adverse effects, but the potential remains for there to be adverse effects through inadvertent discovery, a BLM-permitted paleontologist will monitor surface-disturbing activities. The presence of the monitors are to ensure that previously unknown paleontological resources are immediately identified and that construction activities in that area are halted to avoid further impacts to the resource. Before BLM authorization of the project, the project proponent submits a discovery plan outlining the way in which the resources will be treated and the responsibilities of the project proponent and its subsidiaries. BLM paleontologists will review this plan. In the case where monitoring results in a discovery situation, the discovery plan is implemented. Depending on the nature of the discovery, the project may be allowed to proceed or be redesigned. Recovery of fossil remains may also be required.
Paleo-3	Mitigation–The BLM will evaluate the impacts of proposed actions to known paleontological resources. Any significant paleontological resource discovered by a user, permittee, or claimant or any person working on their behalf on public land will be immediately reported to the AO. The user, permittee, or claimant or any person working on their behalf will suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the AO. An evaluation of the discovery will be made by the AO to determine appropriate actions to prevent the loss of significant cultural or scientific values. If damage to known significant paleontological resources cannot be avoided, the applicant (or the BLM for internal actions) will perform scientific examination of the impacted significant paleontological resources followed by mitigation approved by the AO. This may include the professional collection and analysis of significant specimens by qualified paleontologists.
Paleo-4	All BLM activities and BLM-authorized activities shall comply with the following laws and measures regarding the consideration of paleontological resources: • National Environmental Protection Act (1969) • Federal Land and Policy Management Act (1976) • Paleontological Resources Preservation Act (2009) • BLM IM 2016-124 PFYC • BLM Manual Section 8270 regarding paleontological resource Applicable sections of BLM's regulations in Title 43 of the CFR.
Paleo-5	BLM paleontologists and qualified, BLM-permitted paleontologists should be involved at all levels of survey, analysis, collection, and storage of paleontological resources.
Paleo-6	A paleontologist must have a valid paleontological resource use permit before collecting or disturbing fossil resources on BLM-administered lands. To be eligible for a permit, the applicant must have received formal education and professional instruction in a field of paleontology equivalent to a graduate degree and meet other requirements as specified in the permit application.
Paleo-7	All fossils and associated notes that are collected under a paleontological resource use permit must be transferred to a publicly accessible curation facility. All permittees must have an agreement with a repository before they will be considered eligible for a permit.

Table K-9: Visual Resources Management

SOP / BMP Number	SOP / BMP
Visual-1	To the extent practicable, all facilities and activities will be located away from visually sensitive areas, rivers, trails, and other transportation features; using distance to reduce the facility's visual impact along travel corridors.
Visual-2	All facilities and activities will be designed to meet the visual resource management class, using proper siting and location so that natural features of vegetation and landforms provide screening from travel corridors and other key observation points, and to blend with the natural surroundings.
Visual-3	Where possible, facilities and activities will be designed so their shapes, sizes, colors, and textures harmonize with the scale and character by repeating the elements of line, form, color and texture of the surrounding landscape to reduce visual contrast between the landscape and proposed activity or development.

SOP / BMP Number	SOP / BMP
Visual-4	In panoramic landscapes, development will be located in the opposite direction from the primary scenic views, key observation points and located using natural or artificial screening, where feasible.
Visual-5	The following considerations should be considered when choosing a project location: • Visual contrasts or impacts decrease as the distance between the viewer and the proposed development increases, so projects should be located as far away from prominent viewing locations as possible. • The human eye is naturally drawn to prominent topographic features, so projects should not be located on or near such features. • The shape and placement of projects should be designed to blend with topographic forms and existing vegetation patterns. • Both topographic features and vegetation should be used to screen proposed development.
Visual-6	The following techniques to help reduce surface disturbance should be considered: • Co-locating several projects within the same right-of-way • Placing underground utilities either along the edge or under the surface of an existing road • Placing several underground utilities within the same trench • Establishing limits of disturbance that reflect the minimum area required for construction • Consolidating development of a similar nature within a common structure • Planning projects so that they use existing infrastructure, whenever possible • Locating construction staging and administrative areas in less visually sensitive areas • Requiring restoration of disturbed areas no longer required after construction has been completed
Visual-7	The following should be taken into consideration when making color selections to minimize visual impacts: • Natural surfaces are usually well textured and have shade and shadow effects that darken them; surfaces of structures are usually smooth and reflect light even if dull-finish paint is used; as a general rule, colors on smooth man-made structures need to be two or three shades darker than the background colors to compensate for the shadow patterns created by naturally textured surfaces that make colors appear darker. • The color for all structures should be selected to achieve the best blending with the surrounding landscape in both summer and winter. • Galvanized steel on utility structures should be darkened to prevent glare; low-luster paints should be used wherever possible to help reduce glare (although it is almost impossible to remove all sun glare). • Color (hue) is most effective within 1,000 feet; beyond that point, color becomes more difficult to distinguish, and tone or value determines visibility and resulting visual contrast. • Colors should be selected from a distance that permits viewing of the entire landscape surrounding the proposed development. • Colors that blend with or are in harmony with the existing colors of the earth, rocks, and vegetation are usually more visually pleasing and attract less attention than colors that are chosen to match the color of the sky.
Visual-8	The following vegetation management techniques to reduce visual impacts should be considered when vegetation removal is required for a project: • Retain as much of the vegetation as possible and where practical to use it to screen the development from public viewing areas. • Design vegetation openings to repeat natural openings in the landscape; edges that are scalloped and irregular are more natural looking; straight line edges should be avoided • Minimize the impact on existing vegetation by the following: o Partially clearing the limits of construction rather than clearing the entire area (leaving islands of vegetation results in a more natural look) o Using irregular clearing shapes o Feathering and thinning the edges of the cleared areas to reduce strong lines of contrast; to create a more natural look along an edge, retain a good mix of tree/shrub species and sizes o Disposing of all slash

SOP / BMP Number	SOP / BMP
Visual-9	The following techniques should be considered to minimize the visual impact from new structures placed on the existing landscape: • Repeating form, line, color, and texture • Minimizing the number of structures and combining different activities in one structure wherever possible • Using earth-tone paints and stains and self-weathering metals • Chemically treating wood so that it can be allowed to self-weather • Using natural stone in wall surfaces • Burying all or part of the structure • Selecting paint finishes with low levels of reflectivity • Using rustic designs and native building materials • Using natural-appearing forms to complement landscape character • Screening the structure from view with natural landforms and vegetation
Visual-10	The following techniques should be considered to reduce the contrasts created by earthwork construction • Fitting the proposed development to the existing landforms so as to minimize the size of cuts and fills will greatly reduce visual impacts from earthwork. • Balancing cut and fill and constructing with all fill or all cut. • Hauling in or hauling out excessive earth cut or fill in sensitive viewing areas • Rounding or warping slopes (shaping cuts and fills to appear as natural forms) • Bending slopes to match existing landforms • Retaining rock formations, vegetation, and drainage, whenever possible • Blasting split-face rock (cutting rock areas so that the resulting rock forms are irregular in shape, as opposed to making uniform “highway” rock cuts • Toning down freshly broken rock faces using asphalt emulsions and rock stains • Using retaining walls to reduce the amount and extent of earthwork • Retaining vegetation by using retaining walls, reducing surface disturbance, and protecting roots from damage during excavation • Avoiding soil types that will generate strong contrasts with the surrounding landscape when they are disturbed • Prohibiting dumping of excess earth/rock on downhill slopes
Visual-11	Require a restoration/reclamation plan as part of the original design package. All areas of disturbance that are not needed for operation and maintenance should be restored as closely as possible to previous condition.
Visual-12	The following several strategies should be considered to enhance any restoration or reclamation activity: • Striping, saving, and replacing topsoil (6-inch surface layer) on disturbed earth surfaces • Enhancing vegetation by mulching cleared areas, furrowing slopes, using planting holes on cut/fill slopes to retain water, choosing native plant species, fertilizing, mulching, and watering vegetation, replacing soil, brush, rocks, forest debris over disturbed earth surfaces when appropriate, thus allowing for natural regeneration rather than introducing an unnatural looking grass cover • Minimizing the number of structures and combining different activities in one structure wherever possible.

SOP / BMP Number	SOP / BMP
Visual-13	The following should be considered for determining an alignment that reduces visual impacts: • Topography is a crucial element in alignment selection. Visually, it can be used to subordinate or hide man-made changes in the landscape. Projects located at breaks in topography or behind tree groupings are usually of much less visual impact than projects on steep side slopes. By taking advantage of natural topographic features, cut and fill slopes can be greatly minimized. • Topographic breaks frequently exhibit a natural line element that the proposed alignments can repeat or blend with to strengthen the design. This line element is partly established by a visual shadow zone, which will further reduce the contrast of the project. • Soils are especially important when selecting an alignment and should be analyzed for stability and fertility, and a revegetation program should be planned. • Hydrological conditions can strongly affect the visual impact of buried and surface construction. The risks of surface and subsurface erosion within the corridor should be analyzed and evaluated. • Crossings with other linear features or structures should be designed to minimize their visual impact, as follows: o when possible, crossings should be made at right angles. o structures should be set as far back from the crossing as possible. o in areas with tree and shrub cover, the rights-of-way and structures should be screened from the crossing area. • Avoid fall-line cuts, bisection ridge tops, and valley bottoms.
Visual-14	Maintain night sky and darkness through light management. Require use of shielded lights that direct the light downward to reduce light scatter at facilities and other areas that use lights. Use of "warmer" colored lights (3,000 degrees Kelvin) to reduce harsher "blue" spectrum light (5,000 degrees Kelvin). Include lighting management in facility BMPs and monitor to assess any negative impacts to residential and recreational users, wildlife, birds, and insects.
Visual-15	Lighting: • A lighting plan should be prepared by the project proponent documenting how lighting will be designed and installed to minimize night-sky impacts and impacts on nocturnal wildlife during construction and operations. The lighting plan should specify the following: 1) Number of lights and lumen output of each—Minimum number of lights and the lowest luminosity consistent with safe and secure operation of the facility; 2) Alternatives to lighting—Retro-reflective or luminescent markers in lieu of permanent lighting where feasible; 3) Fixture design—Lights of the proper design, shielded to eliminate uplight, placed and directed to eliminate light spill and trespass to offsite locations; 4) Lamp color temperature—Lights of the proper color to minimize night-sky impacts; 5) SOPs—Minimization of unnecessary lighting use through alternatives to permanent lighting, such as restricting lighting usage to certain time periods; 6) Any activities that may be restricted to avoid night-sky impacts; and 7) A process for promptly addressing and mitigating complaints about potential lighting impacts. • Where possible, use Aircraft Detection Lighting System Technology for Hazard Lighting on Structures Taller than 200 feet. • Except as required to meet the minimum safety and security requirements (e.g., collision markers required by the Federal Aviation Administration, or other emergency lighting triggered by alarms), all permanent lighting should use full cutoff luminaires, which are fully shielded (i.e., not emitting direct or indirect light above an imaginary horizontal plane passing through the light source), and must meet the Illuminating Engineering Society glare requirement limiting intensity of light from the luminaire in the region between 80 degrees and 90 degrees from the ground. All fixtures must be mounted properly, at the proper angle. • Construction and permanent lighting should be mounted and directed to focus light only on the intended area, and to avoid light spill and offsite light trespass. Lights pointing upward or horizontally should be avoided. • When accurate color rendition is not required (e.g., roadway, basic security), lighting should be amber in color, using either low-pressure sodium lamps or yellow LED lighting, or an equivalent. When white light is required for accurate color rendition, it should be less than or equal to 3,500 degrees Kelvin color temperature (warm-white). Bluish-white lighting should not be used in permanent outdoor lighting. • Consistent with safety requirements, lighting use should be minimized during construction and operations.

Resource Uses

Table K-10: Forestry and Woodland Products

SOP / BMP Number	SOP / BMP
Forestry-1	Timber sale authorizations will require the proper site preparation and monitoring to ensure regeneration of timber stands.
Forestry-2	Forest resources will be managed to ensure biodiversity, long-term productivity, and a wide spectrum of multiple uses, including scenic values, recreation, fish and wildlife habitat, watershed protection, and timber harvest. Wildlife, fisheries, plant conservation, fire and fuels objectives will be considered when planning forest product harvests.
Forestry-3	Timber harvest and subsequent management of harvested lands will comply with the Alaska Forest Resources and Practices Act (Alaska Statute [AS] 41.17). When possible, natural regeneration through proper site preparation will be the preferred means of reforestation. When planting is necessary to meet reforestation objectives, native species compatible with the site potential will be used. When native species will not meet objectives, nonnative species may be used following site-specific NEPA analysis and AO approval.
Forestry-4	Machinery used in timber sales will be inspected for noxious weed seeds, especially if it is brought in from outside the local watershed.
Forestry-5	Guidelines for Christmas Tree and Firewood Harvesting: • Do not cut trees more than twice your needed height just for the top. • Do not damage adjacent trees. • When cutting down standing trees, cut the stump to 8 inches or less or as close to the ground as possible. • Scatter lopped branches at least 20 feet from the stump. • Use large stem portions for firewood. • Do not top a larger tree to obtain a Christmas tree. • Do not cut trees that have been posted as “WILDLIFE TREE DO NOT DISTURB” • Pack out your trash as well as trash left by others.

SOP / BMP Number	SOP / BMP
Forestry-6	Ground-based Harvesting: • Exclude ground-based equipment on hydric soils, defined by the NRCS, unless soils are frozen. • Limit designated skid trails for thinning or regeneration harvesting to ≤ 15 percent of the harvest unit area to reduce displacement or compaction to acceptable limits. • Limit width of skid roads to single width of what is operationally necessary for the approved equipment. Where multiple machines are used, provide a minimum- sized pullout for passing. • Ensure leading-end of logs is suspended when skidding. • Restrict non-road, in unit, ground-based equipment used for harvesting operations to periods of low soil moisture or frozen ground. Low soil moisture varies by texture and is based on site-specific considerations. Low soil moisture limits will be determined by qualified specialists using a qualitative method to determine an estimated soil moisture and soil texture. • Incorporate existing skid trails and landings as a priority over creating new trails where feasible, into a designated trail network for ground-based harvesting equipment, consider proper spacing, skid trail direction and location relative to terrain and stream channel features. • Limit non-specialized skidders or tracked equipment to slopes less than 35 percent, except when using previously constructed trails or accessing isolated ground based harvest areas requiring short trails over steeper pitches. Also, limit the use of this equipment when surface displacement creates trenches, depressions, excessive removal of organic horizons, or when disturbance would channel water and sediment as overland flow. • Limit the use of specialized ground-based mechanized equipment (those machines specifically designed to operate on slopes greater than 35 percent) to slopes less than 50 percent, except when using previously constructed trails or accessing isolated ground based harvesting areas requiring short trails over steeper pitches. Also, limit the use of this equipment when surface displacement creates trenches, depressions, excessive removal of organic horizons, or when disturbance would channel water and sediment as overland flow. • Designate skid trails in locations that channel water from the trail surface away from waterbodies, floodplains, and wetlands, or unstable areas adjacent to them. • Directionally fall trees to lead for skidding to minimize surface disturbance when moving logs to skid trails. • Apply erosion control measures to skid trails and other disturbed areas with potential for erosion and subsequent sediment delivery to waterbodies, floodplains, or wetlands. These practices may include seeding, mulching, water barring, tillage, and woody debris placement. • Construct water bars on skid trails where potential for soil erosion or delivery to waterbodies, floodplains, and wetlands exists. • Subsoil skid trails, landings, or temporary roads where needed to achieve 20 percent detrimental soil conditions, minimize surface runoff, improve soil structure, and water movement through the roadbed. • Block skid trails to prevent public motorized vehicle and other unauthorized use at the end of seasonal use. • Plan harvesting operations (cutting and transporting logs) when ground is frozen or adequate snow cover exists to prevent soil compaction and displacement. • Minimize the area where more than half of the depth of the organically enriched upper horizon (topsoil) is removed when conducting forest management operations • Maintain the minimum percent of effective ground cover needed to control surface erosion following forest management operations. Ground cover may be provided by vegetation, slash, duff, medium to large gravels, cobbles, or biological crusts.
Forestry-7	Planting and Pre-commercial Thinning: • Limit the crossing of stream channels with motorized support vehicles (e.g., OHVs) and mechanized equipment to existing road crossings or temporary ford crossings to the approved instream work period. • Scatter treatment debris on disturbed soils, and water-bar any equipment access trails that could erode and deposit sediment in waterbodies, floodplains, and wetlands.

Table K-11: Locatable and Salable Minerals

SOP / BMP Number	SOP / BMP
LS-1	Upland source areas, terraces, and inactive floodplains shall be used for mineral material extraction preferentially over active or inactive stream and river channels, deltas, wetlands, riparian zones, active floodplains, or lakes. Mineral material extraction from lakes, active floodplains, riparian zones, wetlands, deltas, and active or inactive stream or river channels should be avoided and is subject to constraints developed through project-specific NEPA analysis. When responding to a request for a material sale or identifying a source for materials on public lands, the highest priority shall be given to using existing upland material sources. Using materials from wetlands, lakes, and active or inactive floodplains will be avoided unless no feasible public upland alternative exists. Sales or permits for gravel extraction will not be permitted in known fish spawning or rearing areas.
LS-2	Avoid mineral material extraction in habitat crucial to local fish and wildlife populations where possible. When no other source exists, timing or other restrictions derived from a site-specific analysis will be implemented to minimize impact to the resource(s).
LS-3	Salable Mining operations in floodplains shall establish and maintain suitable buffer zones to active streams.
LS-4	All locatable mining operations that have the potential to impact streams, lakes, ponds, or other waterbodies or riparian areas should incorporate the practices and recommended designs identified in the Stormwater Pollution Prevention Plan that will address site runoff, stockpiles, tailings, acid drainage, and short- and long-term containment pond management. All other sites will incorporate site-specific BMPs that will be determined on a case-by-case basis: • Locate stockpile sites on stable ground where the material would not move into waterbodies, floodplains, and wetlands. • Locate, design, and construct salable mineral sites to control runoff and prevent or minimize sediment delivery to streams. • Prevent overburden, solid wastes, drainage water, or petroleum products from entering wetlands, riparian zones, flood plains, and waters of the State. • Locate, design, and maintain settling ponds to contain sediment discharges. • Use erosion-reduction practices, such as seeding, mulching, silt fences, and woody debris placement, to limit erosion and transport of sediment to streams from quarries. Provide drainage from stockpiles and mineral sites, dispersed over stable vegetated areas rather than directly into stream channels. Grade all material sites, where practicable to conform with the surrounding topography prior to closure. Utilized topsoil as a medium to for successful revegetation. Reseed and plant trees, where needed.
LS-5	Mine effluent, deleterious material, and mine runoff shall be controlled and prevented from un-restricted discharge into the surrounding watershed without permitted approval. All mining operations must control all mine contact water (to include process, pit dewatering, settling ponds, and milling operations) and discharge it as authorized in accordance with the approved water management plan and monitoring plan. Protocols for discharge reporting shall be followed.
LS-6	With the exception of necessary extraction operations, mining operations and mineral development support facilities and infrastructure, including but not limited to roads, bunkhouses, offices, ore processing facilities and equipment storage and maintenance facilities and other support operations, should be sited in upland areas.
LS-7	Where possible, braided or split stream types will be selected for salable material extraction. Meandering, sinuous, and straight steam channel types should be avoided.
LS-8	Generally, the largest river feasible should be selected for a salable operations in a given area. Larger rivers have higher volumes of gravel and a wider floodplain more forgiving to in-channel disturbance. The proportionately smaller disturbance in large river systems will reduce the overall effect of gravel removal.
LS-9	Mining salable gravel from active channels will be avoided to reduce detrimental effects on water quality, aquatic habitat, and biota.
LS-10	Public use cabins are not be utilized to support plan- or notice-level mining.
LS-11	All mineral material extraction authorizations, permits, and sales shall include stipulations to prevent the introduction and/or spread of nonnative invasive plants and noxious weeds.

SOP / BMP Number	SOP / BMP
LS-12	It is preferred that ground operations associated with mineral exploration and/or oil and gas exploration occur in the winter months, with sufficient enough snow cover and frost depth to minimize vegetation and soil disturbance and compaction.
LS-13	Existing access routes will be used where possible. Alternatives to and/or upgrading of existing access will be planned in consultation with the AO. When a quarry or rock pit is depleted or vacated, stabilize cutbanks, headwalls, and other surfaces to prevent surface erosion and landslides. Close roads, excavations, and crusher pads. Remove all potential pollutants to prevent their entry into wetlands, Riparian Reserve, floodplains, and waters of the State.
LS-14	Upon closure of mining operations, all tailings, dumps, mining improvements, deleterious materials and substances, contaminants, and hazardous and solid waste, including scrap steel, derelict mining machinery and parts will be disposed of in accordance with applicable federal and State laws and regulations.
LS-15	For all mining operations, a Hazardous Materials Emergency Contingency Plan shall be prepared and implemented before transportation, storage, or use of fuel or hazardous substances. The plan shall include a set of procedures to ensure prompt response, notification, and cleanup in the event of a hazardous substance spill or threat of a release. The plan shall include a list of resources available for response (e.g., heavy-equipment operators, spill-cleanup materials or companies), and names and phone numbers of federal and State contacts.
LS-16	Establishment of permanent or semi-permanent ingress and egress into or through federal public lands is subject to constraints developed through project-specific NEPA. Permanent or semi-permanent access routes, regardless of purpose, shall be routed and concentrated to minimize habitat fragmentation.
LS-17	Water quality of both surface and underground waters will be regulated by terms and conditions of the Alaska Pollution Discharge Elimination System (APDES). Note that in the future, implementation of the APDES program regulating water quality of both surface and ground waters may be regulated by 18 AAC, Chapter 70 (Alaska Water Quality Standards) and 18 AAC, Chapter 83 for surface waters.

Table K-12: Leasable Minerals

SOP/ BMP Number	SOP / BMP
Leasable-1	**Goal:** When authorizing leasable minerals actions, ensure that goals to protect other resource values in the planning area are met to the extent possible. **Stipulation:** Upon abandonment or expiration of the lease, all mineral-related facilities will be removed and sites rehabilitated as near to the original condition as practicable, subject to the review of the AO. **Areas Where Stipulations Apply:** Areas open to mineral leasing. **Exception:** The AO determines that it is in the best interest of the public to retain some or all facilities. **Modification:** None. **Waiver:** None.
Leasable-2	**Goal:** When authorizing fluid leasable minerals actions, ensure that goals to protect other resource values in the planning area are met to the extent possible. **Stipulation:** Exploratory drilling will be limited to temporary facilities such as ice pads, ice roads, ice airstrips, and temporary platforms. **Areas Where Stipulations Apply:** Areas open to fluid mineral leasing. **Exception:** The AO may grant an exception if the lessee demonstrates that construction of permanent facilities such as gravel airstrips, storage pads, and connecting roads are environmentally preferable or that exploring from temporary facilities is not practical or economically feasible. **Modification:** None. **Waiver:** None.
Leasable-3	**Goal:** Minimize impacts to wildlife species from BLM-authorized activities. **Stipulation:** No exploration activities from May 10 through June 1 in Dall sheep habitats and from May 15 through July 15 in caribou calving/post-calving habitat. Construction of production facilities and production activities may occur (no work over rigs). **Areas Where Stipulations Apply:** Identified caribou calving/post-calving and Dall sheep habitats. **Exception:** The AO may grant an exception if the lessee demonstrates that calving caribou or Dall sheep are not currently using the area. **Modification:** Season may be shortened or extended based on actual occupancy of the area. **Waiver:** This stipulation may be waived if caribou migratory patterns change and the areas are no longer used for calving.
Leasable-4	**Goal:** Minimize impacts to wildlife species from BLM-authorized activities. **Stipulation:** No exploration or development activities within 500 meters of active priority raptor nests from April 15 through August 15 (only March 15 through July 20 for gyrfalcon nests). **Areas Where Stipulations Apply:** Areas open to fluid and hardrock mineral leasing. **Exception:** The AO may grant an exception if the lessee demonstrates that impacts would be minimal or there is no feasible or prudent alternative. **Modification:** Season may be adjusted based on actual nest occupancy. **Waiver:** None.
Leasable-5	**Goal:** Minimize impacts to wildlife species from BLM-authorized activities. **Stipulation:** No motorized ground-vehicle use or facility construction within a half mile of any known priority raptor nests from April 15 through August 15 (only March 15 through July 20 for gyrfalcon nests). **Areas Where Stipulations Apply:** Areas open to fluid and hardrock mineral leasing. **Exception:** The AO may grant an exception if the lessee demonstrates that impacts would be minimal or there is no feasible or prudent alternative and after consultation with the USFWS. **Modification:** Season may be adjusted based on actual nest occupancy. **Waiver:** None.
Leasable-6	Mining and oil and gas operations, facilities, and infrastructure will be designed and located to minimize a development's footprint.
Leasable-7	Stockpiled soil and overburden will be spread over mine tailings and stabilized to minimize erosion. The shape of contoured tailing and overburden should approximate the shape of surrounding terrain.

SOP/ BMP Number	SOP / BMP
Leasable-8	All mining/drilling operations shall include plans for surface water discharge (Surface Water Pollution Prevention Plans), acid drainage, tailings, and short and long-term containment pond management.
Leasable-9	All surface water discharge and drainage from mining/drilling operations must be re-directed outside of watersheds that drain into these lakes.
Leasable-10	All chemicals including fuels will be stored outside of watersheds that drain into these lakes.
Leasable-11	A person, claimant, operator, applicant, or other proponent proposing to use or develop the lands, waters or resources within watersheds that drain into lakes must demonstrate to the satisfaction of the AO that such use or development will not modify the lakes or their watersheds in such a way that it results in adversely: altering the hydrological, chemical, physical, or biological integrity of the lakes; or impacting or diminishing the habitat quantity and quality of the aquatic and riparian ecosystems and watershed functions so that fish populations of the lakes are reduced below their natural potential.
Leasable-12	Settling ponds, retention/catchment basins, and post-drilling/production operations must be stabilized and secured prior to seasonal mine closures.
Leasable-13	The value of prime riparian habitat will be considered for protection and mitigation during development of any mineral resources that may impact riparian resources.
Leasable-14	The establishment of permanent mining operations or oil and gas facilities within the area from the ordinary high water mark or the mean high water mark of waterbodies to the outer edge of riparian vegetation or 500 feet, whichever is greater, will be approved only if it can be demonstrated to the satisfaction of the AO that impacts to fish, water quality, and aquatic and riparian habitats will be minimal.
Leasable-15	The design and location of permanent oil and gas facilities within 500 feet of fish-bearing waterbodies or within 100 feet of non-fish-bearing waterbodies will only be approved on a case-by-case basis if the lessee can demonstrate that impacts to fish, water quality, and aquatic and riparian habitats are minimal.
Leasable-16	When responding to a request for a material sale or identifying a source for materials on public lands, the highest priority shall be given to using existing upland material sources. Using materials from wetlands, lakes, and active or inactive floodplains will be avoided unless no feasible public upland alternative exists. Sales or permits for gravel extraction will not be permitted in known fish spawning or rearing areas.
Leasable-17	Where possible, braided or split stream types will be selected for material extraction. Meandering, sinuous, and straight steam channel types should be avoided.
Leasable-18	Generally, the largest river feasible should be selected for a gravel operation in a given area. Larger rivers have higher volumes of gravel and a wider floodplain more forgiving to in-channel disturbance. The proportionately smaller disturbance in large river systems will reduce the overall effect of gravel removal.
Leasable-19	Mining gravel from active channels will be avoided to reduce detrimental effects on water quality, aquatic habitat, and biota.
Leasable-20	When scraping gravel in active or inactive floodplains, maintain buffers that will constrain active channels to their original locations and configurations.
Leasable-21	Material pits will be designed with high shorelines, water depth diversity, and islands.
Leasable-22	It is preferred that ground operations associated with oil and gas exploration occur in the winter months with adequate snow cover and frost depth to avoid vegetation and soil disturbance.

SOP/ BMP Number	SOP / BMP
Leasable-23	The Timing Limitation Stipulation (often called seasonal restrictions) prohibits fluid mineral exploration and development activities for time periods less than yearlong. When using this stipulation, assure that date(s) and location(s) are as specific as possible. A limitation involves the prohibition of activities described in the stipulation for periods of more than 60 days (43 CFR 3101.1-2). The land management plan/NEPA document prepared for leasing must show that less restrictive stipulations were considered to be insufficient. The environmental effects of exploration, development, and production activities may differ markedly from each other in scope and intensity. If the effects of reasonably foreseeable production activities necessitate timing limitation requirements, this need should be clearly documented in the record. The record also should show that less stringent, project-specific mitigation may be insufficient. In such cases the stipulation language should be modified on a case-by- case basis to clearly document that the timing limitation applies to all stages of activity. The legal subdivision, distance, location, or geographic feature, and resource value of concern must be identified in the stipulation and be tied to a land management planning and/or NEPA document. The timing limitations for separate purposes may be written on separate forms or as a combined stipulation. During the review and decision-making process for the Application for Permit to Drill (APD) and Sundry Notices, the date(s) and location(s) should be refined based on current information.
Leasable-24	**Objective:** Protect threatened, endangered, or other special status species and their habitats. **Stipulation:** The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened or endangered species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened/endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. **Areas Where Stipulations Apply:** All BLM-managed lands. **Exception:** None. **Modification:** None. **Waiver:** None.
Leasable-25	**Objective:** Minimize disturbance to caribou during post calving and insect relief aggregations and migrations. **Stipulation:** No exploration activities from May 20 through August 31. Construction of production facilities and production activities may occur (no work over rigs). **Areas Where Stipulations Apply:** The Mulchatna, Nushagak, Northern Peninsula, and other caribou herd crucial insect relief areas. **Exception:** AO may grant exception if review indicates that caribou no longer occupy site-specific area. Exceptions may be granted for work-over rigs on a case-by-case basis depending on duration of activity and actual caribou occupancy of area. **Modification:** Season may be shortened or extended based on actual occupancy of the area. Monitoring provided by ADF&G aerial counts. **Waiver:** This stipulation may be waived if caribou migratory patterns change and the areas are no longer used for insect relief.
Leasable-26	**Objective:** Minimize impact on the human environment. **Stipulation:** The operator will construct drill pads at least 500 feet and compressor stations at least 1,500 feet from occupied structures. **Areas Where Stipulations Apply:** Areas open to oil and gas leasing. **Exception:** The AO may grant an exception if the operator obtains the consent of the owner of the structure. **Modification:** None. **Waiver:** None.

SOP/ BMP Number	SOP / BMP
Leasable-27	**Objective:** Protect, maintain, and preserve the condition and ecological function of the aquatic and riparian zones. **Stipulation:** No surface use or occupancy is allowed within 300 feet of the following rivers: East and South Fork Arolik, Faro Creek, South Fork Goodnews River, and Klutuk Creek. **Areas Where Stipulations Apply:** Areas open to oil and gas leasing. **Exception:** AO may grant exception if the lessee can demonstrate to the satisfaction of the AO that impacts to fish, water quality, and aquatic and riparian habitats are minimal. **Modification:** None. **Waiver:** None.
Leasable-28	**Objective:** Protect, maintain, and preserve the condition and ecological function of the aquatic and riparian zones. **Stipulation:** The design and location of temporary or permanent oil and gas facilities within 300 feet of the following rivers will be prohibited: Kivalina, Ungalik, Shaktoolik, Inglutalik, Koyuk (including the East Fork), Tubutulik, Kuzitrin, Agiapuk, Pah, and Noatak River. **Areas Where Stipulations Apply:** Areas open to oil and gas leasing. **Exception:** The AO may grant an exception on a case-by-case basis if the lessee can demonstrate that impacts to fish, water quality, and aquatic and riparian habitats are minimal, or there is no feasible or prudent alternative. **Modification:** None. **Waiver:** None.
Leasable-29	**Objective:** Minimize disturbance to nesting trumpeter swans and their habitat. **Stipulation:** Closed to drilling (exploration or development), pipeline construction, road construction, or location of permanent facilities May 1 to August 31. Allows off-season exploration activities or pipeline construction. **Areas Where Stipulations Apply:** Area within one-quarter mile of trumpeter swan nesting or staging ponds, marshes, or lakes. **Exception:** USFWS 5-year census data will be used to accurately identify nest sites that are used repeatedly. Upon site-specific review and monitoring, the AO may grant exceptions based on non-occupancy of specific nests. **Modification:** Season may be adjusted based on documented season of occupancy of specific nest sites.
Leasable-30	**Objective:** Maintain high-value moose habitat and minimize disturbance in areas of winter concentration. **Stipulation:** Closed to drilling (exploratory and development), pipeline construction, and road construction activities October 15 to March 31. Open during this period to production activities. Open in off-season to all activities, subject to other stipulated areas. **Areas Where Stipulations Apply:** Moose winter range. **Exception:** Upon review and monitoring, the AO may grant exceptions based on actual moose use of site-specific area. Exceptions granted for work-over rigs on a case-by-case basis based on duration of activity and actual moose occupancy of area. **Modification:** Season may be adjusted depending on climatic conditions, severity of winter, and documented occupancy of the area. **Waiver:** None if moose winter range is present in the lease area.
Leasable-31	**Objective:** Protect active bald eagle nests. **Stipulation:** Closed to drilling (exploration or development), pipeline construction, road construction, or location of permanent facilities April 1 to August 31. Allows off-season exploration activities or pipeline construction. **Areas Where Stipulations Apply:** One-quarter mile buffer from historically active bald eagle nests. **Exception:** Where data exists, AO may grant exceptions based on review of eagle nest monitoring data. Nests unoccupied for three consecutive years may be considered for exception. **Modification:** Season may be adjusted based on actual nest occupancy. **Waiver:** None if bald eagle nests are present in area.

SOP/ BMP Number	SOP / BMP
Leasable-32	**Objective:** Minimize soil erosion. **Stipulation:** Surface-disturbing proposals involving construction on slopes greater than 25 percent would include an approved erosion control strategy, topsoil segregation/restoration plan, be properly surveyed and designed by a certified engineer, and approved by BLM prior to construction and maintenance. **Areas Where Stipulations Apply:** All slopes greater than 25 percent within the planning area. **Exception:** If after an environmental analysis, the AO determines that it would cause undue or unnecessary degradation to pursue other placement alternatives, occupancy in the NSO area may be authorized. **Modification:** May be granted if a more detailed analysis (Order I soil survey) finds that surface disturbance could occur without accelerated erosion. **Waiver:** None.
Leasable-33	Well Pad and Facility Construction • Ensure that every pad, access road, or facility site has an approved surface drainage plan. • Confine or direct drainage from disturbed areas so that erosion of undisturbed areas would not be increased. • Do not allow runoff water (including that from roads) to flow into intermittent or perennial waterways without first passing through a sediment-trapping mechanism. Erosion control structures may include water bars, berms, drainage ditches, sediment ponds, or devices. • Plan access road construction for exploratory wells such that a permanent road could later be constructed in the event of field development. • Avoid constructing access roads on steep hillsides and near watercourses where alternate routes provide adequate access. • Design access roads requiring construction with cut and fill to minimize surface disturbance; take into account the character of the landform, natural contours, cut material, depth of cut, resource concerns, visual contrast, and where the fill material will be deposited. • Do not cast fill material over hilltops or into drainages. Cut slope ratios should normally be no steeper than 3:1 and fill slopes no steeper than 2:1. • Use low water crossings whenever possible. • Ensure that well site layout takes into account the character of the topography and landform. Avoid deep vertical cuts and steep, long fill slopes. Construct all cut and fill slopes to the least percent slope practical. • Require trash to be retained in portable trash cages and hauled to an authorized disposal site for disposal. Prohibit burning on the well site. • Adequately fence, post, or cover mud, separation pits, and other containments used during the exploration or operation of the lease for storing any hazardous materials.
Leasable-34	Utilization • Conduct operations to prevent damage to, interference with, or disruption of water flows and improvements associated with all springs, wells, and impoundments. • Require companies controlling roads that provide access to crucial wildlife areas to close the roads with a lockable gate to prevent general use during critical periods of the year, when resource problems are experienced (for example, during hunting seasons and winter). • Allow the use of closed road segments to legitimate authorized agents of the lessee or their subcontractors, the land managing agency, and other agencies with a legitimate need. • Require closing and reclaiming unnecessary roads to reduce fragmentation and restore habitat integrity, while reducing the potential for wildlife disturbances. • Close roads during crucial periods, such as wildlife winter periods, spring runoff, calving and fawning seasons, and saturated soil conditions. • Require storage of in approved containers for petroleum products, such as gasoline, diesel fuel, helicopter fuel, crankcase oil, lubricants, and cleaning solvents used to fuel, lubricate, and clean vehicles and equipment. • Require hazardous materials to be properly stored in separate containers to prevent mixing, drainage, or accidents. Prohibit hazardous materials from being drained onto the ground or into streams or drainage areas. • Require totally enclosed containment for all solid construction waste. Trash, garbage, petroleum products, and related litter would be removed to an authorized sanitary landfill approved for the disposal of these waste classes.

SOP/ BMP Number	SOP / BMP
Leasable-35	**Objective:** Protect fish-bearing waterbodies, water quality and aquatic habitats. **Stipulation:** The establishment of permanent oil and gas support facilities within the 100-year floodplain area of waterbodies or 500 feet, whichever is greater, is prohibited. **Areas Where Stipulations Apply**: Areas open to oil and gas leasing. **Exception:** AO may grant exception if lessee can demonstrate to the satisfaction of the AO that impacts to fish, water quality, and aquatic and riparian habitats are minimal. **Modification:** None. **Waiver:** None.

Table K-13: Lands and Realty

SOP / BMP Number	SOP / BMP
Lands-1	Land use authorizations will avoid or minimize adverse impacts to public wetlands in order to protect hydrological systems.
Lands-2	The NSO stipulation is intended for use only when other stipulations are determined insufficient to adequately protect an identified resource value that may suffer long term impacts based upon the surface occupancy. The land management plan/NEPA document prepared for the authorization must show that less restrictive stipulations were considered and determined by the AO to be insufficient, i.e., show why the NSO stipulation is needed. The resource value of concern must be identified and tied to a land management plan and/or NEPA document. The geographic extent of the identified resource values must be described and may be stated as: • The "Entire Lease" • Distance from resources and facilities such as rivers, trails, campgrounds, etc. • Legal description • Geographic feature such as a 100-year floodplain • Municipal watershed, percent of slope, etc. • Special areas with identified boundaries; ACEC, WSR, etc. • Other description that specifies the boundaries of the lands affected. The estimated percent of the total lease area affected by the restriction must be given if no legal or geographic description of the location of the restriction is given. In other cases the estimated percent is optional. Land management plans and/or NEPA documents should identify the specific conditions for providing waivers, exceptions, or modifications to lease stipulations. Waivers, exceptions, or modifications must be supported by appropriate environmental analysis and documentation are and subject to the same test used to initially justify the imposition of this stipulation. Language may be added to the NSO stipulation form to provide the lessee with information or circumstances under which waivers, exceptions, or modifications would be considered. A waiver, exception, or modification may be approved if the record shows that circumstances or relative resource values have changed or that the lessee can demonstrate that operations can be conducted without causing unacceptable impacts, and that less restrictive stipulations will protect the public interest. Waivers, exceptions or modifications can only be granted by the AO. If the waiver, exception, or modification is inconsistent with the land management planning document, that document must be amended or the change disallowed. If the AO determines, prior to lease issuance, that a stipulation involves an issue of major concern, modification or waiver of the stipulation will be subject to public review (43 CFR 3101.1-4). The land management plan also may identify other cases when a public review is required for a waiver, exception, or modification. In such cases, wording such as the following should be added to the stipulation form to inform the lessee of the required public review: "A 30-day public notice period is required prior to modification or waiver of this stipulation."
Lands-3	A holder of a BLM right-of-way grant shall not allow any use of the right-of-way by another entity without the prior written authorization by the AO.
Lands-4	Prior to BLM's authorization of additional uses within a right-of-way, the AO will consult the holder of the right-of-way and determine whether the proposed additional use will interfere with the purposes for which the original right-of-way was granted.

SOP / BMP Number	SOP / BMP
Lands-5	Snow ramps may be constructed at stream crossings to accommodate overland heavy equipment moves. Blading of steam or river banks however is not permitted. Any ramps which may cause stream blockages during breakup will be removed after crossings are completed.
Lands-6	During an overland heavy equipment move, all motorized equipment shall travel under its own power or be towed on an appropriate sized sled. Broken down equipment will be repaired on-site, whenever possible, and not towed unless the break down occurs while crossing a river, lake, or pond. Broken-down equipment could be towed out of a river, lake, or pond for emergency purposes to protect water quality from further damage.
Lands-7	During an overland move, new trail segments will be routed to avoid heavy stands of tall shrub. The Field Office Forester will assist in determining the route to avoid heavy timber stands.
Lands-8	Unless authorized, the general Rules of Conduct in 43 CFR 8365 shall apply to all BLM lands.
Lands-9	The permittee will notify the AO when starting an overland move and when the move is completed.
Lands-10	**Objective:** Ensure that final disposition, or final reclamation and rehabilitation of the land, upon expiration of an authorization meets the current and future needs of the public. **Stipulation:** Upon abandonment or expiration of the lease, all oil- and gas-related facilities will be removed and sites rehabilitated to as near the original condition as practicable, subject to the review and approval of the AO. **Areas Where Stipulations Apply**: Areas open to oil and gas leasing. **Exception:** The AO determines that it is in the best interest of the public to retain some or all facilities. **Modification:** None. **Waiver:** None.
Lands-11	ROWs and other lands and realty authorizations would contain noxious and invasive plant management terms or stipulations for all surface-disturbing actions. Examples of these authorizations are power lines, pipelines, transmission corridors, energy development sites and related development, and gravel pits. This would require the following: • Conduct a pre-disturbance noxious weed inventory. • Design to avoid or minimize vegetation removal and weed introduction or spread. • Manage weeds during the life of the right-of-way or authorization to prevent or minimize weed introduction or spread. • Abandon the right-of-way or authorization to establish competitive vegetation on bare ground areas. • Monitor revegetation success and weed prevention and control for a reasonable number of years. • Require the authorization holder to pressure wash any equipment prior to bring to public lands. • Allow only the use of certified weed-free, or native seed mixtures when revegetating an area. • Allow only the use of certified weed-free waddles, and other material used often required as part of the SWPPP, or erosion control. All authorizations would contain noxious and invasive plant management terms or stipulations to prevent the spread of noxious and invasive plants during the term of the authorization. During the term of an authorization, and based upon field inspections conducted by the BLM, any introduction by the proponent of noxious and invasive plants would need a plan to remove and remediate the lands and be approved by the AO. Areas where known noxious and invasive plants occur will require an inventory to be conducted by the proponent prior to the authorization and approved by the AO. A plan to minimize further spread and/or removal of noxious and invasive plants will be required and approved by the AO prior to any authorization where known noxious and invasive plants occur. Areas where there are no known noxious and invasive plants may require an inventory to be conducted by the proponent and approved by the AO prior to authorization.
Lands-12	Within ROW avoidance areas, new applications for ROW authorizations would not be granted unless there is no feasible alternative. Such determinations shall be made on a case by case basis by the authorized officer after project specific NEPA has been completed.

Table K-14: Recreation and Visitor Services

SOP / BMP Number	SOP / BMP
Rec-1	Recreational use permits shall be issued in an equitable manner for specific recreational uses of BLM-managed lands and related waters as a means to manage visitor use; provide for visitor health, safety, and enjoyment; minimize adverse resource impacts; and provide for private and commercial recreational use according to limits or allocations established through the BLM's planning process.
Rec-2	Lands may be temporarily closed to other uses during recreation performed under a special recreation permit, such as special events along the INHT.
Rec-3	Recreation and visitor services implementation strategies will be evaluated on an individual basis as part of activity and project-level planning. Such evaluations will consider the sensitivity and impacts on recreation and visitor services in the affected area. Stipulations will be attached as appropriate to ensure the compatibility of recreation and non-recreation projects with recreation and visitor services management objectives.

Table K-15: Travel and Transportation Management

SOP / BMP Number	SOP / BMP
TTM-1	When developing travel management plans, minimize impacts through appropriate restrictions on cross-country OHV use. Monitor soils for impacts that may be caused by OHVs.
TTM-2	Roads and trails are engineered, constructed, and maintained in a manner that minimizes the effect on landscape hydrology; concentration of overland water flow, subsurface water flows; minimizes erosion, and minimizes sediment transport.
TTM-3	Avoid new road construction or trail development in floodplains, riparian zones, or wetlands. Establishment of permanent or semi-permanent access routes in or through floodplains, riparian zones, wetlands, or federal public lands is subject to constraints developed through project-specific NEPA analysis and/or application of the provisions of 43 CFR 3802.3-1, 3802.3-2(g), and 3802.42. Permanent or semi-permanent access routes, regardless of purpose, shall be routed and concentrated to minimize habitat fragmentation.
TTM-4	The following provisions apply to the development, construction or use of roads, bridges, and culverts in rivers, streams, and wetlands: 1. Bridge and culvert construction shall comply with shall comply with Forest Service guide to aquatic organism passage and the Federal Highway Administration Publication no. FHWA-HIF-07-033 Design for fish passage at roadway-stream crossings: Synthesis Report 2. Bridge and culvert design and installation shall incorporate established techniques, modified where necessary for implementation in an arctic or sub-arctic environment, such as those found in: a) Stream Crossing Design Procedure for Fish Streams on the North Slope Coastal Plain, by G.N. McDonald & Associates, dated June 1994; b) Forest Practices Technical Note Number 4: Fish Passage Guidelines for New and Replacement Stream Crossing Structures, by the Oregon Department of Forestry, dated May 10, 2002; and other pertinent and appropriate guidance. 3. Bridge and culvert designs and installations shall account for the effects of channel scour and constriction. 4. River, stream and wetland crossings and culvert installations shall be designed and constructed to ensure free passage of fish, maintain natural stream bedload movement and sediment transport, and minimize adverse effects on natural stream flow. 5. No road crossings shall be permitted in crucial spawning habitat, unless no feasible alternative exists and it can be demonstrated to the satisfaction of the AO that no long-term adverse effects will occur. 6. Bridges and culverts will be designed to avoid altering the direction and velocity of stream flow or interfering with migrating, rearing, or spawning activities of fish and wildlife. Bridges and culverts should span the entire non-vegetated stream channel. 7. Roads will cross riparian zones and water courses perpendicular to the main channel.
TTM-5	Utilize existing roads and trails whenever possible. Use of new roads and trails shall require a site-specific exception from the AO.

SOP / BMP Number	SOP / BMP
TTM-6	Follow Federal Aviation Administration Advisory Circular No: 91-36D for voluntary practices in wildlife habitat: a. Avoid noise-sensitive areas, if practical; avoidance is preferable to overflight at relatively low altitudes. b. Pilots operating noise-producing aircraft (fixed-wing, rotary-wing, and hot air balloons) over noise-sensitive areas should make every effort to fly not less than 2,000 feet above ground level (AGL), weather permitting. For the purpose of this RMP, the ground level of noise-sensitive areas is defined to include the highest terrain within 2,000 feet AGL laterally of the route of flight, or the uppermost rim of a canyon or valley. The intent of the 2,000 feet AGL recommendation is to reduce potential interference with wildlife and complaints of noise disturbances caused by low-flying aircraft over noise-sensitive areas. c. Departure from or arrival to an airport, climb after take-off, and descent for landing should be made to avoid prolonged flight at low altitudes near noise-sensitive areas. d. This advisory does not apply where it would conflict with Federal Aviation Regulations, air traffic control clearances or instructions, or where an altitude of less than 2,000 feet AGL is considered necessary by a pilot to operate safely.
TTM-7	Within defined Western Arctic Herd (WAH) insect relief areas, aircraft associated with permitted activities will maintain an altitude of at least 2,000 feet AGL (except for takeoffs and landings) from June 20-August 15, unless doing so would endanger human life or violate safe flying practices.
TTM-8	• Continue coordinating with counties and other agency road entities to promote use of BMPs for road maintenance they perform within planning area boundaries. • Maintain an inventory of existing road and trail systems. • Design roads and trails for minimal disruption of natural drainage patterns. All road-building activity shall use BMPs established by the U.S. Forest Service (Forest Service) (FSH 7709.56 – Road Construction Handbook Chapter 40 – Design) as well as BLM Manual 9113 and BLM Handbook 9113-1 and Handbook 9113-2 to guide maintenance and road construction designs and requirements. Include definitions for functional road classification and maintenance levels for BLM roads. Require all highway rights-of-way and other road authorizations to include noxious and invasive weed stipulations for prevention, inventory, treatment, and revegetation or rehabilitation. Road abandonment would generally include at least 3 years of post-abandonment monitoring and treatment.
TTM-9	• In order to ensure public access and safety, the BLM CCD will continue an active road maintenance program, using redesign, blading, brush removal for sight distance as appropriate, scarification, graveling, water barring, low water crossings, spur ditching, seeding and culvert installation and cleaning. • No new NEPA analysis would be required for road maintenance within the defined maintenance disturbance/easement footprint, which is defined as previously disturbed or maintained. Disturbance outside of the defined maintenance disturbance/easement footprint or road realignment would be subject to additional NEPA compliance.
TTM-10	• Locate roads and landings to reduce total transportation system mileage. Renovate or improve existing roads or landings when it would cause less adverse environmental impact. Where roads traverse land in another ownership, investigate options for using those roads before constructing new roads. • Design roads to the minimum width needed for the intended use as referenced in BLM Manual 9113 – 1 – Roads Design Handbook
TTM-11	Road Closure and Decommissioning • Inspect closed roads to ensure that vegetation stabilization measures are operating as planned, drainage structures are operational, and noxious weeds are not providing erosion control. Conduct vegetation treatments and drainage structure maintenance as needed. • Decommission temporary roads upon completion of use. • Prevent unauthorized use by vehicular traffic using methods such as gates, guard rails, earth/log barricades, to reduce or eliminate degradation resulting from unauthorized use.

SOP / BMP Number	SOP / BMP
TTM-12	Preconstruction • Use existing roads to the extent possible. Keep additional roads, if needed, to an absolute minimum and have the BLM Administrative Officer approve the location of routes before construction. • Construct and maintain all access roads to BLM road standards, according to the Gold Book (2007) and BLM Manual 9113. • Restrict off-road travel to terrain with less than 30 percent slopes; 20 percent if highly erodible. • Limit proposed surface disturbance and vehicular travel to the approved well location and access route.
TTM-13	Exploration • Install temporary gates for use during the course of operations, unless fence is immediately repaired. On completion of operations, restore fences to at least original condition. • Mitigate or suspend all activities off maintained roads that create excessive surface rutting during adverse conditions affecting soil moisture caused by such climatic factors as thawing, heavy rains, snow, flooding, or drought. • Limit off-road vehicle travel to that necessary to complete the geophysical operations. • Require specialized low surface impact equipment (such as wide- or balloon-tired vehicles and ATVs) or helicopters for any activities in off-road areas to protect fragile soils or other resources. • Require the undersides of all heavy equipment to be washed before being driven onto public lands and discourage driving through or parking on noxious weed infestations.
TTM-14	Airstrips: Casual use of fixed-wing aircraft use would be unrestricted and associated landing strips would be allowed with minimal clearing of rocks, downed logs, and brush. Construction of airstrips requires an authorization.

Table K-16: Renewable Energy

SOP / BMP Number	SOP / BMP
Renew-1	Prior to the development or utilization of renewable energy resources, ensure that qualified individuals conduct and review impact analyses and mitigation plans for any renewable energy development or associated infrastructure.
Renew-2	Prior to the development of renewable energy resources, conduct a thorough assessment of potentially affected resources, including visual, subsistence, wildlife, etc.
Renew-3	Prior to the development and utilization of natural energy resource development, a decommissioning and reclamation plan should be developed.
Renew-4	During the construction, maintenance, and operations, appropriate actions should be taken to minimize the project footprint and associated disturbances to visual, subsistence, wildlife, and other disturbances due to the utilization of renewable energy resources.
Renew-5	For construction, operation, and decommissioning of renewable energy resource development, procedures should be developed to ensure the project site and adjacent lands and areas be kept clean of debris, garbage and other waste generated on-site.

Special Designations

Table K-17: Areas of Critical Environmental Concern

SOP / BMP Number	SOP / BMP
ACEC-1	Applicants proposing to conduct surface-disturbing activities or other intensive activities will, at the determination of the AO, be required to submit an approved plan (Caribou and Dall Sheep Impact Assessment and Mitigation Plan) describing methods to minimize impacts to caribou and Dall sheep and their habitat. This plan must describe the proposed project, the design and mitigation alternatives considered, the amount and quality of habitat to be affected, the mitigation and restoration to be applied, the residual impacts predicted, and the monitoring to be undertaken to confirm mitigation success.
ACEC-2	Permanent roads will generally not be allowed (although long-term temporary roads may be) and roads will generally not be open to the public. Roads will be of the lowest practical profile. Road use may be restricted during caribou calving, postcalving, or Dall sheep lambing. Road construction will not be permitted if other means of access is practical (such as aircraft or winter ice-road). Facilities within ACECs that require year-round access will be located in forested areas where practical. Permitted aircraft will follow a minimum flight level of 1,500 feet AGL, except at landing and takeoff and when it would compromise safety. The AO may allow exceptions to these access requirements where impacts to caribou and Dall sheep are adequately minimized and where other resource considerations are of higher priority.
ACEC-3	To minimize habitat loss, the surface disturbance and the aerial extent of facilities will be minimized. The amount of cumulative vegetation clearing and surface disturbance will be minimized through an integrated review of planned disturbance between all land users.
ACEC-4	Reclamation and revegetation of disturbed areas will be required to meet performance standards set in site-specific reclamation plans, such as a required plant cover (percent) within a certain number of years before a performance bond is released.
ACEC-5	Minimize human interference with the Mulchatna, Northern Alaska Peninsula, or Nushagak caribou herds during the following critical periods: • Calving aggregations (May 15 to June 15) • Post calving aggregations (June 15 to July 15) • Insect relief aggregations (June 15 to August 31) If no feasible alternative exists, qualified personnel will conduct a preliminary site survey within the 2-week period prior to an activity's projected start date to establish caribou presence. No activity will commence prior to May 1 in suspected caribou calving habitat or June 1 in suspected post-calving or insect relief caribou habitat. If caribou are present, temporary activities will be delayed until caribou have left the habitat. Approval of long-term or permanent activities is dependent upon NEPA analysis, the extent and duration of impacts, particularly habitat fragmentation and the propensity to displace the animals, and the ability to devise appropriate mitigation measures.
ACEC-6	Within the WAH caribou calving and insect relief areas, mineral exploration activities will not be authorized from May 20-August 15 unless the AO determines that caribou no longer occupy the specific area of the proposed operations. This seasonal restriction can also be modified based on actual caribou occupancy of area.
ACEC-7	Within defined WAH caribou calving areas, the following uses will not be permitted during peak calving (May 20-June 20): 1) surface-disturbing activities; 2) FLPMA leases or permits that exceed 14 days of activity; and 3) mining exploration. Aircraft associated with permitted activities will maintain an altitude of at least 2,000 feet AGL (except for takeoffs and landings), unless doing so would endanger human life or violate safe flying practices.

Table K-18: National Trails

SOP/ BMP Number	SOP / BMP
INHT-1	To eliminate, minimize, or limit the spread of noxious and nonnative invasive plants, only feed and mulch (hay cubes, hay pellets, or straw, for example) certified as weed-free through the Alaska Weed-Free Forage certification program (or other programs with approval of the AO) will be authorized on BLM lands. Where Alaska certified sources are not available, locally produced forage and mulch may be used with approval from the AO. If no certified weed-free or local sources are available, other products may be used with the approval of the AO. Additionally, certified weed-free feed will be required to be fed to the animal 24 hours prior to coming onto public lands to prevent the spread of invasive plants through the animal's excrement. Through educational materials and permit stipulations, develop a land ethic leading to the use of certified weed-free products (hay, straw, bedding, feed) on and before visiting BLM lands. Persons using products other than certified weed free will place a temporary barrier between the ground and the product to prevent the spread of noxious weeds. All product remnants must be removed and discarded away from public lands.

Table K-19: Wild and Scenic Rivers

SOP / BMP Number	SOP / BMP
WSR-1	For commercial timber sales and personal use timber permits, the requirement for a buffer will be considered to prevent disturbance of priority fish species habitat, sedimentation into streams, impairment of visual resource qualities, or to protect outstandingly remarkable values of wild and scenic rivers. Buffer widths will be determined on a case-by-case basis.

Social and Economic Conditions

Table K-20: Support for BSWI Communities

SOP / BMP Number	SOP / BMP
Socioecon-1	**Public Participation** • Resolve problems and implement decisions in collaboration with other agencies, State, municipalities, Native corporations, and the public. • Ensure the BLM land users and stakeholders have a meaningful voice in establishing policy and managing BLM land in Alaska. • Provide the general public with culturally appropriate, meaningful opportunities to participate in and influence the process of decision making affecting BLM-managed land in Alaska. • To the extent practical and warranted by local conditions, hold public meetings in the Alaskan community or communities most impacted by proposed decisions affecting BLM land. • When setting deadlines for public participation, recognize and provide for the extra time it takes mail to reach people in rural Alaska. The seasonality of subsistence dependent communities and the land users will also be considered.

SOP / BMP Number	SOP / BMP
Socioecon-2	**Government, Organization, and Community Participation** • Provide local governments, State and federal agencies, Native corporations, and other private landowners and interest groups with meaningful opportunities to participate in and influence the process of decision making affecting BLM-managed land in Alaska. • Consistent with the national policy regarding government-to-government consultation and relationships with tribes, consult as early in the agency's decision-making process as possible, to the greatest extent practicable and to the maximum extent permitted by law, with Federally Recognized Tribes in Alaska prior to taking action or undertaking activities that affect Federally Recognized Tribes, their assets, rights, services, or programs. The BLM actions shall favor maximum participation of Federally Recognized Tribes in Alaska with a goal of informed decision making through consultation and collaboration. • To the extent practicable, ensure that any actions likely to affect any land or water use or natural resource of the coastal zone be consistent with the enforceable policies of the Alaska Coastal Management Program. • Notify the manager of the appropriate federal conservation system unit of any proposed activity or use that may affect the unit. An opportunity for comment will also be offered. • Work collaboratively to monitor effectiveness of participation and other actions contained in the "Support for Communities" theme as needed.
Socioecon-3	Coordinate, cooperate, and consult with federal, tribal, State, and local agencies, private landowners, and stakeholder organizations in order to foster a unified, science-based adaptive management approach to wetland-floodplain and all land management in a watershed/ecosystem context.
Socioecon-4	Promote stewardship, conservation, and appreciation of wetland-floodplains and all lands through educational and outreach programs.

Table K-21: Subsistence

SOP / BMP Number	SOP / BMP
Sub-1	For externally generated actions, BLM will consider using the following actions to eliminate, minimize, or limit the effects of permitted activities on subsistence use: 1. BLM may recommend modifications to a proposed activity. 2. Permittees may be required to provide information to potentially affected subsistence communities regarding the timing, siting, and scope of the proposed activity. 3. Permittees may be required to consult with potentially affected subsistence communities regarding ways to minimize impacts to subsistence. (The Alaska National Interest Lands Conservation Act 810 Analysis can only be conducted by the federal agency, not by the project proponent.)
Sub-2	BLM will consider using the following actions to eliminate, minimize, or limit the effects of permitted activities on subsistence use: 1) BLM may recommend modifications to proposed activity to further its policy of effective subsistence management, 2) Permittees will be required to provide information to potentially affected subsistence communities regarding the timing, siting, and scope of the proposed activity, and 3) Permittees will be required to consult with potentially affected subsistence communities to receive input regarding how to minimize impacts to subsistence, and the permittee will be required to provide documentation of their consultation efforts to the BLM. If BLM allows an activity to impact subsistence resources, a justification must be made as to why the impacts where allowed, and not mitigated or avoided.

Table K-22: Hazardous Materials and Health and Human Safety

SOP / BMP Number	SOP / BMP
Solid Waste	
Hazmat-1	Areas of activities will be left clean of all debris to minimize environmental contamination from solid waste.
Hazmat-2	All solid wastes, including incinerated ash, will be removed by the permittee from public lands and disposed of within an Alaska Department of Environmental Conservation (ADEC) approved facility, unless otherwise specified. Solid waste combustibles may be incinerated in a contained and controlled manner; however, burn restrictions may apply during high-risk wildland fire seasons. Burial of solid waste is not authorized on public lands. Burning of trash, litter, trees, brush or other vegetative material must be approved by the AO.
Wastewater/Sanitation	
Hazmat-3	Wastewater should be managed in accordance with 8 AAC 72, Wastewater disposal. Wastewater can be defined as human wastes (sewage) and gray water (wastewater from a laundry, kitchen, sink, shower, bath or other domestic sources). Pit privies are authorized in accordance with 18 AAC 72.020(b)(c)(i), 72.030 and all applicable updates and must be at least 100 feet away from any waterbody. If these standards cannot be met, then special authorization may be given by the AO. Gray water may not be released in any waterbody, without authorization under the APDES. Gray water may be filtered and released to the surface so as not to cause erosion, and the gray water released must maintain compliance with the ADEC's guidance.
Hazmat-4	Sanitation efforts including the disposal of gray water and kitchen wastes will be approved by the AO in accordance with the ADEC General Mine Permit or plan specifically developed in consultation with that agency.
Spill Prevention and Response	
Hazmat-5	All hazardous materials and petroleum, oil, and lubricants (POLs) will be stored in containers that are compatible to the material being stored. Containers will be labeled with the responsible party's name, contents of the container, the date the product was purchased, and the date the container was filled.
Hazmat-6	Storage of POLs at any site will require secondary containment. The containment area must be constructed to hold at least 110 percent of the largest container, lined with an impermeable liner that is free of cracks or gaps, compatible with the contents stored, and sufficiently impervious to contain leaks, or spills. The containment area must be covered to eliminate the collection of rainwater within the containment area. The AO may also require a Spill Prevention and Contingency Plan. Liner material will be compatible with the stored product and capable of remaining impermeable during typical weather extremes expected throughout the storage period.
Hazmat-7	All hazardous materials/toxic substances must be disposed of in accordance with U.S. Environmental Protection Agency and ADEC regulations at the time of disposal.
Hazmat-8	Equipment maintenance by the responsible party may be allowed if it is necessary to operate equipment as described in the authorization. Equipment maintenance that has the potential to release fluids should be completed over an impermeable liner to ensure fluid migration to the environment does not occur.
Hazmat-9	A Spill Prevention Plan will be written and implemented for all sites which have the potential to store 1,320 gallons or more of POLs in 55-gallon drums and larger containers. SPCCs will follow the requirements in 40 CFR 112 and State regulations.
Hazmat-10	All spills will be contained and cleaned up in accordance with ADEC guidance as soon as the release has been identified, unless health and safety of personnel is at risk. ADEC discharge notifications and reporting requirements are outlined in AS 46.03.755 and 18 AAC 75 Article 3. The release of POLs to any waterbody must be immediately reported to ADEC, as soon as the person has knowledge of the release. The responsible party will contact the AO within 48 hours of a spill on public lands. Notifying the U.S. Environmental Protection Agency may be required for discharges of oil, as required by 40 CFR 112.4.
Hazmat-11	Application of pesticides and other toxicants will occur in a manner that does not prevent or retard attainment of desired conditions or adversely impacts priority aquatic species.

SOP / BMP Number	SOP / BMP
Hazmat-12	The storage of fuel drums, the establishment of stationary fuel storage facilities, and the storage of hazardous material will not occur within riparian zones (from the ordinary high water mark to the outer edge of riparian vegetation), within 100 feet of a waterbody, within 500 feet of the active floodplain of any fish-bearing waterbody, or on frozen bodies of water.
Hazmat-13	With the exception of watercraft or aircraft, no fueling operations, servicing, or repair of vehicles will occur in riparian zones (from the ordinary high water mark to the outer edge of riparian vegetation), within 100 feet of a waterbody, or within 500 feet of the active floodplain of any fish-bearing waterbody.
Hazmat-14	Transfer of POLs to equipment will be completed in a secure manner to minimize the possibility of contamination to the surrounding environment. At a minimum, POL-type absorbent pads will be placed under the transfer location to catch overflow or assist the operator in containing a spill. If refueling cannot be avoided within riparian habitat, within 500 feet of fish-bearing waterbodies, or within 100 feet of non-fish-bearing waterbodies, the responsible party must exercise caution while refueling to ensure no release of POLs into any waterbody. Equipment that has been identified as having a fluid leak must have a drip basin placed under the leak area to ensure no release to the surrounding environment. Any drip basin must be protected from the collection of rain water to ensure no release to the surrounding environment occurs. When maintenance to equipment has the potential to release fluids, an impermeable liner must be utilized to ensure that spills are contained. If refueling cannot be avoided within the riparian zone or within 100 feet of a waterbody, a catch basin and POL-type absorbent pads will be utilized to collect any overflow. The storage area for any POLs must be approved by the AO.
Hazmat-15	With the exception of watercraft or aircraft, no vehicles or motorized equipment shall be left unattended within the floodplain or below the ordinary high water mark of any river, lake, or stream.
Hazmat-16	Human use will be managed to achieve and maintain water quality standards and to avoid management problems and water quality impacts. Specific management practices will include public education and construction of toilet facilities where appropriate.
Hazmat-17	No fuel barrels, waste oil, garbage, or equipment are to be abandoned along any trails or on federal public lands.
Hazmat-18	Hazardous and other regulated wastes shall be properly managed by the generator as required by all applicable federal and State laws and regulations.
Hazmat-19	Precautions shall be taken to avoid attracting wildlife to food and garbage.
Hazmat-20	Transportation of POLs will be handled in a safe manner to avoid impacts to the environment and human health.
Hazmat-21	The authorized user, claimant, or permittee will provide BLM with a disclosure of the components in any hydraulic fracturing materials to be used, the volume and depths at which such materials are expected to be used, and the volume capacity of the vessels to be used to store such materials.
Hazmat-22	The responsible party shall immediately clean-up all oil or hazardous substance spills, taking precedence over all other matters, except the health and safety of personnel.
Hazmat-23	Use of pesticides will comply with applicable federal and State laws. Pesticides will be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, the authorized user or permittee will obtain from the AO written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the AO. The plan should be submitted no later than December 1st of any calendar year to cover the proposed activities for the next fiscal year. Emergency use of pesticides will be approved in writing by the AO prior to such use. Pesticide use is subject to case specific NEPA analysis.
Hazmat-24	Hazardous substances used for exploration or mining will be contained and backhauled for disposal at a proper facility for that material. Used petroleum products may be converted onsite or contained and backhauled for proper disposal. The storage of fuels and petroleum products will be in a location approved by the AO in accordance with ADEC permit requirements.
Hazmat-25	Before using biological controls, ensure that they are tested on a variety of species, including taxonomically close relatives. Disclose impacts from use of biological controls and develop appropriate mitigation measures to reduce adverse effects.

SOP / BMP Number	SOP / BMP
Hazmat-26	During any exploration activities, locate powder magazines at least a mile from traveled roads, unless otherwise authorized after analysis or review. Require loaded shot holes and charges to be attended at all times. Require all trash, flagging, and lath to be removed and hauled to an authorized disposal site. Do not allow oil or lubricants to be drained onto the ground surface. Require the undersides of all heavy equipment to be washed before being driven onto public lands and discourage driving through or parking on noxious weed infestations.

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Appendix L: Recreation Management Areas

Appendix L. Recreation Management Areas

Iditarod National Historic Trail Special Recreation Management Area (SRMA)

SUPPORTING INFORMATION

The Iditarod National Historic Trail (INHT) SRMA would improve management of the unique and distinctive use of the INHT. The INHT is the only national trail within the Bering Sea–Western Interior (BSWI) planning area, composed of 2,400 miles of trail segments and sites associated with a Gold Rush-era trail network that connected Seward to Nome via the Iditarod gold mining district.

Historically, INHT travel occurred during winter and relied on roadhouses and cabins for shelter. Trail segments are still used as primary winter overland routes between communities. Approximately 1,600 miles of the INHT are on public lands and right-of-way identified for modern-day use. Over 700 miles of actively used trail segments are in the planning area, approximately 77 miles of which are on Bureau of Land Management (BLM)-managed lands. The INHT's diverse climate, terrain, scenery, wildlife, and resources are largely unchanged since the Gold Rush, providing an opportunity to experience the natural primitive settings and challenges historically encountered. Contemporary use includes snowmobile travel between villages, trapping, firewood gathering, subsistence, and race events.

Most wintertime trail use takes place from February to April, although winter use begins when sufficiently cold weather and snow coverage enable overland travel. Winter overland travel is mostly via snowmobile and dogsled. Alaska residents and those visiting from outside the state and country use the trail for competitive events, such as the Iditarod Sled Dog Race, the Iron Dog snowmobile race, and various human-powered (foot, bicycle, and ski) endurance races.

SRMA OBJECTIVES

Objective Statement: BLM Manual 6280 requires the establishment of a National Trails Management Corridor (NTMC) that provides for land management measures that safeguard the nature and character of the corridor to meet the legislative goals of the special designation.[1] BLM Manual 6280 also requires inventorying national trail resources, qualities, values, and associated settings and the primary use or uses of the trail, as well as identifying management goals, objectives, and actions for each national trail. Designation and management of this area as a SRMA would ensure that desired experiences and benefits of the INHT could be sustained for generations to come.

Activities: Manage for the primary activities of dog mushing and snowmobile riding and secondary activities of trapping and hunting.

Experiences:

- Gain recognition from others for using the trail.
- Tell others about the trip.
- Enjoy exploring on one's own.
- Enjoy participation in group outdoor events.
- Enjoy strenuous exercise.
- Escape everyday responsibilities.
- Experience and feel good about solitude, isolation, and independence.
- Experience and enjoy adventure.
- Experience and enjoy the sights, sounds, and smells of nature.
- Test one's endurance (secondary experience).

[1] BLM Manual 6280 – Management of National Scenic and Historic Trails and Trails under Study or Recommended as Suitable for Congressional Designation (Public). September 14, 2012. Available at https://www.blm.gov/sites/blm.gov/files/uploads/mediacenter_blmpolicymanual6280.pdf.

SRMA OBJECTIVES

Benefits:

Personal

- Greater self-reliance
- Improved outdoor recreation skills
- Enhanced awareness and understanding of nature
- Enhanced sense of personal freedom
- Enhanced sense of competence
- Greater sense of adventure

Community/Social

- Heightened awareness of natural world
- Improved community closeness and bonding
- Greater family bonding
- Enlarge sense of community dependency on public lands
- Increased independence/autonomy
- Greater interaction with visitors from different cultures

Environmental

- Greater retention of distinctive natural landscape features
- Reduced negative impacts such as litter, vegetative trampling, and unplanned trail construction

RECREATION SETTING CHARACTERISTIC DESCRIPTIONS

Physical Components (e.g., remoteness, naturalness, visitor facilities):

The INHT SRMA is more than 0.5 mile from paved roads. The existing natural landscape has been retained, and modifications to the landscape are not evident. Visitor facilities consist of simple/basic recreation developments such as shelter cabins and trail signs.

Social Components (e.g., contacts, group size, evidence of use):

There are two seasons of use on the INHT SRMA; the high season occurs from February to March, and visitors can expect to see an average of 15-29 people on the trail per day, in group sizes of 4-6. The low season occurs April to January, and visitors can expect to see fewer than 3 other people each day. Evidence of use is limited to small localized areas with vegetation impacts. Wood lathe with reflective tape from permitted events is occasionally seen along the trail.

Operational Components (e.g., access [types of travel], visitor services/information, management controls):

Public access is predominantly by snowmobile, with a lesser use by dog sleds, winter mountain bikes, and cross-country skiing. No full-size vehicles will be in use. Visitor information will consist of maps available at BLM offices and shelter cabins, websites, and minimal signage along the trail. Signs will be directional in nature. Signs identifying the INHT would be visible at access points and cabins and periodically along the trail. BLM staff will be present occasionally, most frequently during permitted events. Partnerships will be explored and utilized to maintain a minimal management presence. Management controls would include, but not be limited to, limits to group size, limits to duration of stay, waste management (human and litter), and permitted activities and commercial filming. Dispersed recreation uses would be lightly managed, with little to no cost to the public.

MANAGEMENT ACTIONS AND ALLOWABLE USE DECISIONS

Recreation and Visitor Services Program (e.g., planning-area wide camping limits, restrictions on shooting sports. Note that many recreation management actions fall under implementation decisions described below).

- Off-highway vehicle (OHV) area designation is established as Limited (details on limitations by alternative are provided in Section 2.8.18 and Table 2-20 of the Draft RMP/EIS).
- Apply administrative actions to create and maintain semi-primitive motorized recreation opportunities, experiences and outcomes.
- Define stay limits for non-permitted dispersed camping and BLM Public Shelter Cabin casual use.

Other Programs:

- Visual Resource Management Decisions
- Travel Management Decisions

(Note that the SRMA does not cross areas of medium to high locatable mineral potential. Leasable mineral potential is considered low throughout the planning area.)

IMPLEMENTATION DECISIONS (analyzed in LUP) or IMPLEMENTATION GUIDANCE (additional NEPA required)

Management:

- Road and trails will be managed in partnership with local communities to provide access for subsistence activities with minimal change to the current physical setting.
- The BLM will manage public shelter cabins in a manner that supports casual use of these facilities.
- The BLM will manage public shelter cabins to promote casual use by the public as a priority over use by commercial guide outfitters.
- The BLM would apply stay limits in public shelter cabins to achieve social recreation setting characteristics (RSCs).
- The BLM will limit special recreation permits (SRPs) as necessary to avoid use conflicts.

Administration:

- Limits to SRPs will be applied as needed to minimize use conflicts (casual, commercial, subsistence) and achieve desired benefits and outcomes.
- Issuance of SRPs would include appropriate stipulations for the protection and management of natural, cultural, and paleontological resources and would minimize potential impacts to those resources to the extent practicable.
- SRPs for competitive evets may be limited in number, timing (e.g., between February 1 and April 1) and trail segment to prevent overlap and minimize potential for conflicting use.
- Exclusive use of public shelter cabins may not be permitted to ensure health and safety of casual and subsistence users.
- An adaptive management monitoring program with baseline conditions, impact thresholds, and triggers for actions would be established for the purposes of resource protection, visitor safety, and/or enhancing targeted outcomes and setting character.
- Develop new restrictions and/or facilities, as needed, for the purposes of site protection, visitor safety, and/or enhancing targeted outcomes and setting character.
- New restrictions and/or facilities may be developed for the purposes of site protection, visitor safety, and/or enhancement of targeted outcomes and setting character.

IMPLEMENTATION DECISIONS (analyzed in LUP) or IMPLEMENTATION GUIDANCE (additional NEPA required)

Information and Education:

- Maps available at BLM offices, shelter cabins, and websites
- Minimal signage will exist along the trail. Signs will be directional in nature.
- BLM staff will be present occasionally, most frequently during permitted events.
- Partnerships will be explored and utilized to maintain a minimal management presence.

Monitoring:

- Visitor use monitoring may occur during permitted event and non-event time periods to assess demand, user conflict, evidence of use (litter, waste), etc.

Rohn Site Recreation Management Area

SUPPORTING INFORMATION

The BLM manages the Rohn Air Navigation Site within the INHT. For the past century, Rohn has been the site of the only habitable public shelter between Rainy Pass Lodge, 25 air miles to the east, and Nikolai, 60 air miles to the north. The site consists of 400 acres of upland forest at the confluence of the South Fork Kuskokwim River and the Tatina River. Built facilities include a 1,200-foot unmaintained gravel airstrip, the Primary Trail of the INHT and a segment of Connecting Trail, and the historic Rohn Public Shelter Cabin. The public shelter cabin is the oldest historically intact structure open for public use and managed by the BLM on the entire trail.

The first roadhouse was established at Rohn in 1910. It was used throughout the Iditarod gold rush until it burned down in 1924. Subsequently, a new cabin was built and survived until it was washed away by the Tatina River in 1984. In the late 1930s, the 400-acre site was withdrawn for public use by the U.S. Department of Interior for the development of an emergency airstrip and shelter cabin by the Civil Aeronautical Administration. At that time, the Civilian Conservation Corps built what is today known as the Rohn Public Shelter Cabin.

ROHN MANAGEMENT ZONE (RMZ) OBJECTIVE(S)

Objective Statement:

Today, the Rohn Public Shelter Cabin is one of the most well-known cabins on the INHT, having been used for over 40 years as the first checkpoint for Iditarod Sled Dog Racers north of the Alaska Range. The shelter cabin and airstrip are also used as a checkpoint on the Irondog Race and frequently as a base camp in late summer for sheep hunters. The 400-acre site also houses a set of automatic, Internet-based weather monitoring cameras, installed and maintained by the Federal Aviation Administration, which provide real-time images of weather conditions over the adjacent Alaska Range. Due to the historic significance of Rohn, the site is eligible for and managed (per BLM policy) as if it were listed on the National Register of Historic Places, to protect its historic values.

ROHN MANAGEMENT ZONE (RMZ) OBJECTIVE(S)

Activities: Within the Rohn Recreation Management Zone (RMZ) of the INHT SRMA, manage for the primary activities of group use, camping and hunting, and for the secondary activities of snowmobile riding and sightseeing. Monitoring by staff to ensure this objective is being met will be performed on an annual basis, with an emphasis on winter months.

Experiences:

- Testing one's endurance
- Enjoying a risk-taking adventure
- Togetherness with similar people
- Participating in group outdoor activities
- Being in control of things that happen
- Enjoying the sights, sounds, and smell of nature
- Enjoying an escape from crowds of people
- Gaining recognition from others for completing a trip to Rohn RMZ
- Feeling good about solitude, isolation, and independence

Benefits:

Personal:

- Greater self-reliance
- Improved skills for outdoor enjoyment, both by one's self and in group settings
- Improved outdoor knowledge and self-confidence
- Increased adaptability
- Stronger ties with family and friends
- Become a more well-informed and responsible visitor
- Increase one's personal relationship with the natural world
- Gain a greater sense of adventure

Community/Social:

- Increased awareness of nearby communities
- Increased revenue to nearby communities
- Greater protection of area historic structures

Environmental:

- Heightened awareness of the natural world
- Greater management of fish, wildlife, and plant resources

RECREATION SETTING CHARACTERISTIC DESCRIPTIONS

Physical Components (e.g., remoteness, naturalness, visitor facilities):

Rohn is within 0.5 mile of a trail and airstrip.

The site consists of an existing unmaintained gravel airstrip, cabin, and toilet which have partially modified the existing natural landscape but are not visible from the entire zone.

Simple/basic recreation developments such as the Rohn shelter cabin and primitive toilet, hazardous materials storage locker, portal sign, and site maintenance tools are found on site.

Social Components (e.g., contacts, group size, evidence of use):

- There are two seasons of use at the Rohn RMZ; the high season occurs from February to March, and visitors can expect to see an average of 15-29 people on the trail per day, in group sizes of 3 or fewer. The low season occurs April to January, and visitors can expect to see fewer than 3 other people each day, which often consist of passengers of small airplanes landing at the site.
- Evidence of use is limited to small localized areas of vegetation alteration and compacted/bare soils at the shelter cabin and adjacent to the airstrip. Surface vegetation will continue to be managed to allow minimal wear and bare soils along the trail.

Operational Components (e.g., access [types of travel], visitor services/information, management controls):

- Winter access is predominantly by aircraft, with some dog mushing, winter mountain biking, and snow machine riding. Summer access is possible by aircraft only.
- Visitor information will consist of maps available at BLM offices and shelter cabins, websites, and minimal signage at the cabin and along the trail. Signs will be directional in nature. BLM staff will be present occasionally, most frequently during permitted events. Partnerships will be explored and utilized to maintain a minimal management presence. Management controls would include, but not be limited to, limits to group size, limits to duration of stay, waste management (human and litter), and permitted activities and commercial filming. Dispersed recreation uses would be lightly managed and little to no cost to the public.
- Shelter cabin rules will be posted in plain sight at the cabin. Permitted use such as organized group activities includes restrictions, limitations, and stipulations on such acts as group size, camping ethics, human waste, and litter disposal.

MANAGEMENT ACTIONS AND ALLOWABLE USE DECISIONS

Recreation and Visitor Services Program

- The Rohn Site RMZ would be established (363 acres) within the INHT SRMA
- Licensed non-government contracted private transporters (with exception of guide-outfitters) would not be required to obtain an SRP to access the Rohn Site. The BLM would continue to monitor the situation and evaluate implementing an SRP requirement for transporters should use increase or conflict arise.
- Only the use of dead and down trees for the wood stove in the BLM Public Shelter Cabin would be allowed. Cutting of live trees would be prohibited.
- Non-permitted use would be limited to 7 consecutive days, and to no more than 14 days in total in a calendar year.

Other Programs:

- Travel Management Decisions
- Visual Resource Management Decisions

IMPLEMENTATION GUIDANCE

Management: (e.g., roads, trails, facilities, use restrictions, services, concessions.)

- Continue to manage the Rohn Site in a manner that supports group use and minimizes conflict between commercial, casual, and subsistence use.

Administration: (e.g., permits, fees, allocation systems, partnerships)

- Consider limits requiring SRPs for non-government contracted private transporters accessing the Rohn Site (e.g., air taxis, boat operators, horseback).
- Consider limits on commercial use of the BLM Public Shelter Cabin to minimize conflict.

Information and Education:

- Maps available at BLM offices, shelter cabins, and websites.
- Minimal signage will exist along the trail. Signs will be directional in nature.
- BLM staff will be present occasionally, most frequently during permitted events.
- Partnerships will be explored and utilized to maintain a minimal management presence.

Monitoring:

- Visitor use monitoring may occur during permitted event and non-event time periods to assess demand, user conflict, evidence of use (litter, waste).

BSWI Extensive Recreation Management Area

ERMA OBJECTIVE(S)

Objective Statement:

The remainder of the BSWI planning area—consisting of the North and South Nulato Hills, the Yukon River Lowlands, the Kuskokwim Mountains, the Tanana-Kuskokwim Lowlands, the Lime Hills, and the Ahklun Mountains—will be managed annually as an Extensive Recreation Management Area (ERMA).

Within the BSWI ERMA, dispersed recreation would be lightly managed and without cost to the public. The ERMA will be managed annually for the primary activities of hunting and dispersed camping and for the secondary activities of snowmobile riding and fishing.

Community Focus Zones (CFZs) would be applied within the ERMA, managed to reduce competition for subsistence fish and wildlife resources within an established radius around remote Alaskan villages. The CFZ will provide opportunities for BSWI communities to conduct subsistence harvest activities free from the impacts of permitted sport and commercial harvest on BLM-managed lands adjacent to BSWI communities. Throughout the life of the plan, and within the CFZ of the BSWI ERMA, desired experiences and benefits will focus on traditional subsistence use.

ERMA OBJECTIVE(S)

Activities: Within the BSWI ERMA, provide a setting in which the following experiences and benefits could be achieved:

Experiences:

ERMA-wide:

- Escaping crowds
- Experiencing solitude
- Enjoying the sights, sounds, and smells of nature
- Testing one's abilities (secondary experience)

CFZs:

- Engaging in traditional use in traditional areas
- Engaging on traditional practices alone or with others
- Connecting to nature through reliance on natural resources
- Enjoying the sights, sounds, and smells of nature

Benefits:

Personal (ERMA-wide):

- Enhanced sense of personal freedom
- Enhanced sense of competence
- Greater sense of adventure

Personal (CFZs):

- Satisfaction in carrying out traditional uses
- Pride in providing for family and community
- Enhanced sense of personal freedom
- Enhanced sense of competence
- Enhanced sense of self-reliance

Environmental (ERMA-wide):

- Heightened awareness of the natural world
- Greater management of fish, wildlife, and plant resources

Environmental (CFZs):

- Heightened awareness of the natural world
- Participation in stewardship of subsistence resources
- Reduced pressure for fish, wildlife, and plant resources

RECREATION SETTING CHARACTERISTIC DESCRIPTIONS

Physical Components (e.g., remoteness, naturalness, visitor facilities):

ERMA-wide:

- Most of the ERMA is more than 0.5 mile from mechanized or motorized trails/routes and navigable waterways.
- The natural landscape is undisturbed.
- There are no structures, visitor facilities, or trailheads. Few existing trails were developed by traditional subsistence activities and village-to-village transportation and will be managed as such.

CFZs:

- No visitor facilities or trailheads will be development by the BLM.
- BLM will coordinate with communities to support cultural tourism if desired by community.
- Existing trails resulting from traditional subsistence activities and village-to-village transportation will remain for the life of the plan.

Social Components (e.g., contacts, group size, evidence of use):

ERMA-wide:

- Fewer than three encounters per day at dispersed/primitive campsites, primarily passengers of small fixed wing air craft; groups most often consist of three or fewer people.
- There are no alterations to the natural terrain, and sounds of people are mostly absent, with the exception of the sounds of the occasional fixed-wing aircraft.

CFZs:

- Encounters would be limited to individuals or groups engaged in subsistence use or cross-country travel.
- Encounters will commercial outfitter groups would be minimized.

Operational Components (e.g., access (types of travel), visitor services/information, management controls):

ERMA-wide:

- Public recreational access in the winter is rare to non-existent away from the INHT SRMA, which bisects the ERMA. Summer access is by fixed-wing aircraft with tundra tires and by jet boats along major rivers (e.g., Yukon, Anvik, Unalakleet, and Kuskokwim Rivers). The entire ERMA is roadless.
- Visitor information will consist of maps available at BLM offices and shelter cabins, websites, and minimal signage along the trail. Signs will be directional in nature. BLM staff will be present occasionally, most frequently during permitted events. Partnerships will be explored and utilized to maintain a minimal management presence. Management controls would include, but not be limited to, limits to group size, limits to duration of stay, waste management (human and litter), and permitted activities and commercial filming. Dispersed recreation uses would be lightly managed and without cost to the public.

CFZs:

- Access by existing trails resulting from traditional subsistence use would continue
- Information will consist of maps available at BLM offices and shelter cabins.
- Signs will indicate outer boundary of CFZ.
- BLM staff will have minimal presence; however, monitoring may occur during hunting season.
- Dispersed non-commercial recreation uses would be lightly managed and without cost to the public.

MANAGEMENT ACTIONS AND ALLOWABLE USE DECISIONS

Recreation and Visitor Services Program:

ERMA-wide:

- Stay limits for non-permitted dispersed camping would be limited to 14 consecutive days within a 28-day period. After a camp has been occupied for 14 days, the camp must be moved at least 2 miles to start a new 14-day period.
- The BSWI ERMA would follow travel and transportation management decisions for "All BSWI lands not managed as TMAs, Conservation System Units, or Sensitive Resource Areas" under Alternative B as described in Section 2.7.18, Table 2-17 of the BSWI Draft RMP/EIS.

CFZs:

- Community Focus Zones will be established around BSWI communities as described in Table 2-19c of the BSWI Draft RMP/EIS.
- BLM-issued SRPs for outfitter-guide activity will be limited to lands outside the CFZ. Specifically, BLM will not authorize the guiding of paying clients conducting sport hunting and sport fishing within the CFZs.

Other Programs:

- Travel Management
- Visual Resource Management
- Fisheries
- Wildlife
- Locatable Minerals
- Commercial Woodland Harvest
- Lands and Realty

IMPLEMENTATION GUIDANCE

Management:

ERMA-wide:

- Manage use of public shelter cabins by guide-outfitters in a manner that minimizes conflict with other casual, subsistence, or commercial use.

CFZs:

- Identification of specific limitations within the "Limited" designation (e.g., vehicle weight, vehicle width) are implementation-level planning decisions and would be developed as part of a travel and transportation plan that will be completed by the BLM subsequent to this RMP in coordination with BSWI communities.
- Road and trails will be managed in partnership with local communities to provide access for subsistence activities with minimal change to the current physical setting.
- The BLM would continue to work cooperatively with rural communities to mark winter travel routes between communities. Site-specific marking locations and methods would be determined at the implementation level through this cooperative effort.
- If summer use routes are identified during implementation-level travel management planning, these designations would be based on the following criteria:
    - Prioritize a route system on lands of high resilience to repeated passage of summer OHVs.
    - Include existing routes (see Appendix E of the BSWI Draft RMP/EIS, Map 2-41) accessing subsistence resources in the designated route network.
    - Reduce redundant or social trails accessing the same areas and resources unless multiple routes are found necessary for multiple recreation experiences that are supported by the RMP.
    - Meet connectivity and destination goals for rural communities.
    - During implementation-level planning, consider resource impacts, other resource decisions, and resource use needs when developing a route system.

IMPLEMENTATION GUIDANCE

Administration:

ERMA-wide

- Within 1 year of the approved plan, establish an SRP Allocation Plan/Process for guide outfitters that defines the following:
  - Allocation limits for big game guide-outfitters operating within each Guide Use Area (GUA) of the ERMA outside of Community Focus Zones (CFZs).
  - The maximum number of GUAs a guide-outfitter may operate in.
  - The maximum number of assistant guides and employees, clients, operating days, and camp distances.
  - Guide-outfitter evaluation methods, such as demonstrated experience, operation strategies used to conserve and minimize impacts to natural resources, business plans, and practices that that demonstrate cooperation with local communities.
  - Penalties for violations, including citations, convictions and default history (including felony or misdemeanor game and non-game related convictions or violation of guide licensing requirements).

CFZs:

- Partnerships with local communities will be developed as needed to provide or maintain access, facilities, or information.
- Limits to SRPs will be applied as needed to minimize conflicts with subsistence use and achieve desired benefits and outcomes.

Information and Education:

- Educate guide-outfitters on the goals and objectives of the BSWI ERMA
- Provide information to guide-outfitters to use for client education of the goals and objectives for the BSWI ERMA

Monitoring:

ERMA-wide:

- Reassess guide-outfitter guidelines every year (at a minimum) to determine if established management objectives for the BSWI ERMA are not being met.

CFZs:

- Conduct community focus groups every 5 years to assess achievement of objectives and effectiveness of management.
- Monitor harvest and camp locations on post-use reports to ensure that permitted activities are occurring outside of RFZs.