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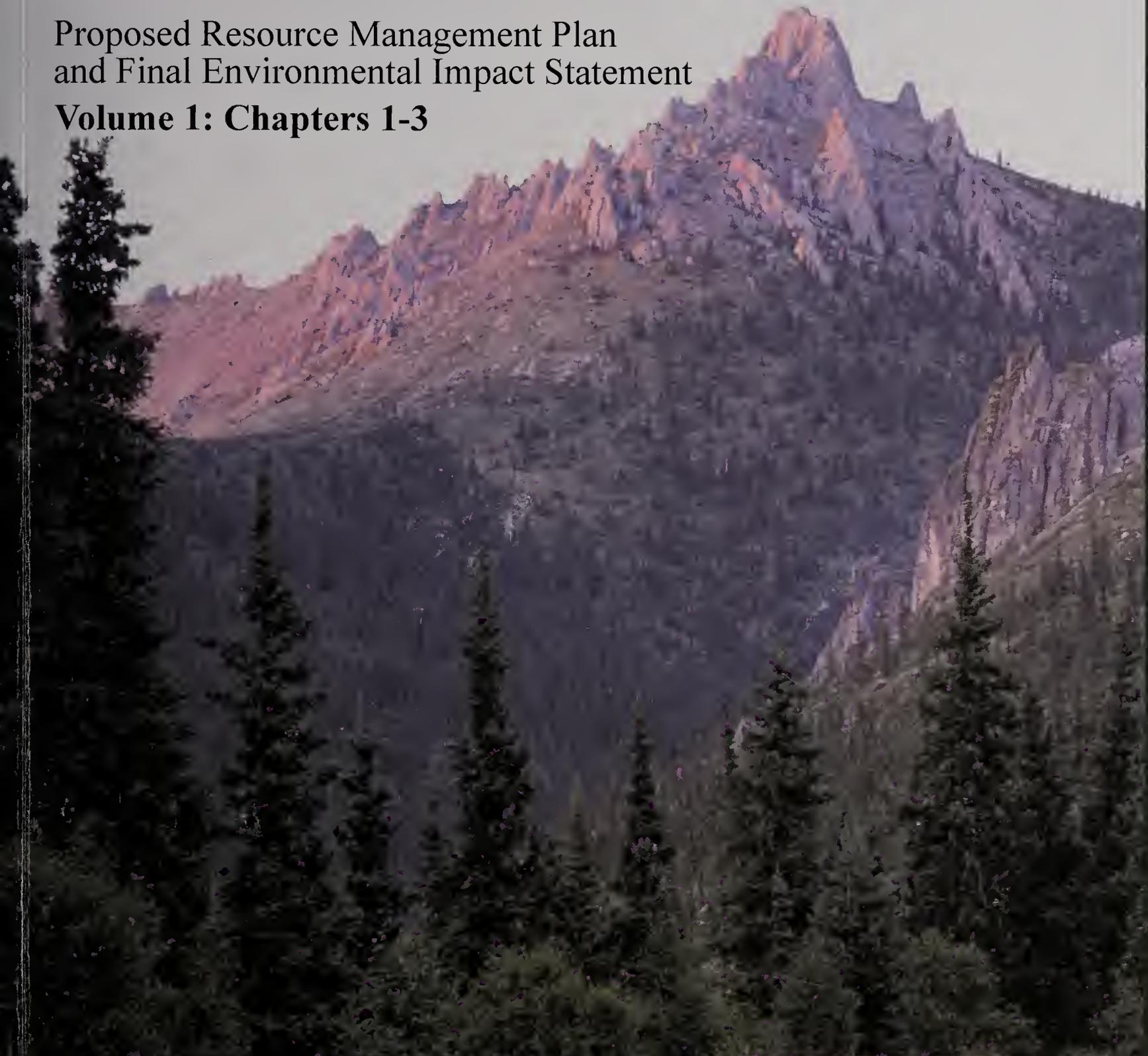
BLM

# Eastern Interior

July 2016

Proposed Resource Management Plan  
and Final Environmental Impact Statement

Volume 1: Chapters 1-3



Eastern Interior Field Office, Alaska



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## **BLM Cover Photos:**

1. Alpenglow on the White Mountains, Beaver Creek Wild and Scenic River, Alaska.
2. Steele Creek Roadhouse, Fortymile Wild and Scenic River, Alaska.
3. Dall Sheep at mineral lick near Lime Peak, White Mountains National Recreation Area, Alaska.
4. Mining operation on Walker Fork in Fortymile mining district, Alaska.

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# Eastern Interior

## Proposed Resource Management Plan and Final Environmental Impact Statement

### Volume 1

Abstract

Executive Summary

Chapter 1: Introduction

Chapter 2: Alternatives

Chapter 3: Affected Environment

Prepared by the

U.S. Department of the Interior  
Bureau of Land Management-Alaska  
Eastern Interior Field Office

July 2016



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# United States Department of the Interior



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222 West Seventh Avenue, #13  
Anchorage, Alaska 99513-7504  
<http://www.blm.gov/ak>

In reply refer to:  
1610 (AK020)

**MAY 23 2016**

Dear Reader:

Enclosed is the Proposed Resource Management Plan (PRMP) and Final Environmental Impact Statement (FEIS) for the Eastern Interior RMP. The Bureau of Land Management (BLM) prepared the PRMP/FEIS in consultation with cooperating agencies, taking into account public comments received during this planning effort. The PRMP provides a framework for the future management direction and appropriate use of the Eastern Interior Planning Area, located in Interior Alaska. The document contains both land use planning decisions and implementation decisions to guide the BLM's management of the four planning subunits in the Eastern Interior Planning Area: Fortymile, Steese, Upper Black River (Draanjik), and White Mountains subunits.

This PRMP and FEIS have been developed in accordance with the National Environmental Policy Act of 1969, as amended, and the Federal Land Policy and Management Act of 1976, as amended. The PRMP (Alternative E) is largely based on alternatives B and C of the Draft Resource Management Plan/Environmental Impact Statement (DRMP/DEIS), which was released on February 24, 2012. The PRMP/FEIS contains the Proposed Plan, a summary of changes made between the DRMP/DEIS and PRMP/FEIS, impacts of the Proposed Plan, a summary of the written and verbal comments received during the public review period for the DRMP/DEIS, and responses to the comments.

Pursuant to BLM's planning regulations at 43 CFR 1610.5-2, any person who participated in the planning process for this PRMP and has an interest which is or may be adversely affected by the planning decisions may protest approval of the planning decisions within 30 days from date the Environmental Protection Agency (EPA) publishes the Notice of Availability in the Federal Register. For further information on filing a protest, please see the accompanying protest regulations in the pages that follow (labeled as Attachment # 1). The regulations specify the required elements of your protest. Take care to document all relevant facts. As much as possible, reference or cite the planning documents or available planning records (e.g., meeting minutes or summaries, correspondence, etc.).

Emailed protests will not be accepted as valid protests unless the protesting party also provides the original letter by either regular mail or overnight delivery postmarked by the close of the protest period. Under these conditions, the BLM will consider the emailed protest as an advance copy and will afford it full consideration. If you wish to provide the BLM with such advance notification, please direct emailed protests to: [protest@blm.gov](mailto:protest@blm.gov).

All protests must be in writing and mailed to one of the following addresses:

Regular Mail:

Director (210)  
Attn: Protest Coordinator  
P.O. Box 71383  
Washington, D.C. 20024-1383

Overnight Delivery:

Director (210)  
Attn: Protest Coordinator  
20 M Street SE, Room 2134LM  
Washington, D.C. 20003

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

The BLM Director will make every attempt to promptly render a decision on each protest. The decision will be in writing and will be sent to the protesting party by certified mail, return receipt requested. The decision of the BLM Director shall be the final decision of the Department of the Interior on each protest. Responses to protest issues will be compiled and formalized in a Director's Protest Resolution Report made available following issuance of the decisions.

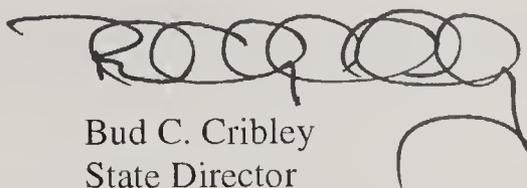
Upon resolution of all land use plan protests, the BLM will issue four Approved RMPs and Records of Decision (RODs), one for each planning subunit. The Approved RMPs and RODs will be mailed or made available electronically to all who participated in the planning process and will be available on the BLM website at [www.blm.gov/ak/eirmp](http://www.blm.gov/ak/eirmp).

Unlike land use planning decisions, implementation decisions included in this PRMP/FEIS are not subject to protest under the BLM planning regulations, but are subject to an administrative review process, through appeals to the Office of Hearings and Appeals (OHA), Interior Board of Land Appeals (IBLA) pursuant to 43 CFR, Part 4 Subpart E. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed.

Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations once the BLM resolves the protests to land use planning decisions and issues an Approved RMP and ROD. The Approved RMPs and RODs will therefore identify the implementation decisions made in the plan that may be appealed to the Office of Hearing and Appeals.

If you would like additional information or clarification, please contact Jeanie Cole, Planning and Environmental Coordinator or Lenore Hepler, Eastern Interior Field Manager at (907) 474-2200.

Sincerely,



Bud C. Cribley  
State Director

Enclosure(s)

Attachment 1: Protest Regulations

*Attachment 1*

**Protest Regulations**

[CITE: 43CFR1610.5-2]

TITLE 43--PUBLIC LANDS: INTERIOR  
CHAPTER II--BUREAU OF LAND MANAGEMENT, DEPARTMENT OF THE INTERIOR  
PART 1600--PLANNING, PROGRAMMING, BUDGETING--Table of Contents  
Subpart 1610--Resource Management Planning  
Sec. 1610.5-2 Protest procedures.

- (a) Any person who participated in the planning process and has an interest which is or may be adversely affected by the approval or amendment of a resource management plan may protest such approval or amendment. A protest may raise only those issues which were submitted for the record during the planning process.
- (1) The protest shall be in writing and shall be filed with the Director. The protest shall be filed within 30 days of the date the Environmental Protection Agency published the notice of receipt of the final environmental impact statement containing the plan or amendment in the Federal Register. For an amendment not requiring the preparation of an environmental impact statement, the protest shall be filed within 30 days of the publication of the notice of its effective date.
- (2) The protest shall contain:
- (i) The name, mailing address, telephone number and interest of the person filing the protest;
  - (ii) A statement of the issue or issues being protested;
  - (iii) A statement of the part or parts of the plan or amendment being protested;
  - (iv) A copy of all documents addressing the issue or issues that were submitted during the planning process by the protesting party or an indication of the date the issue or issues were discussed for the record; and
  - (v) A concise statement explaining why the State Director's decision is believed to be wrong.
- (3) The Director shall promptly render a decision on the protest.
- (b) The decision shall be in writing and shall set forth the reasons for the decision. The decision shall be sent to the protesting party by certified mail, return receipt requested. The decision of the Director shall be the final decision of the Department of the Interior.

# Abstract

**Lead Agency:** U.S. Department of the Interior, Bureau of Land Management-Alaska

**Proposed Action:** Eastern Interior Proposed Resource Management Plan/Final Environmental Impact Statement (Proposed RMP/Final EIS)

**Type of Action:** Administrative Final

**Abstract:** This Proposed RMP/Final EIS is based on information provided by BLM personnel, other agencies and organizations, and the public. This plan describes and analyzes five alternatives. Alternative A is the No Action Alternative; Alternatives B, C, D, and E propose varying levels of resource use and conservation. Alternative E is the BLM's Proposed RMP.

Major issues and management concerns analyzed included: Minerals management, travel management, wilderness characteristics, special designations, subsistence, recreation, and wildlife.

**Protests:** Protests on the Eastern Interior Proposed RMP/Final EIS must be received within 30 days from publication of the Environmental Protection Agency's Notice of Availability in the *Federal Register*. The close of the protest period will be announced in news releases and on the RMP website (below).

## Further Information:

Jeanie Cole, Team Lead  
(907) 474-2340

Lenore Heppler, Field Manager  
(907) 474-2320

Bureau of Land Management  
Fairbanks District Office  
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[EasternInterior@blm.gov](mailto:EasternInterior@blm.gov)

[www.blm.gov/ak/eirmp](http://www.blm.gov/ak/eirmp)

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# Executive Summary

## Introduction

The Bureau of Land Management (BLM) in Alaska is engaged in a planning process to update management direction for lands administered by the Fairbanks District Office, Eastern Interior Field Office. The Eastern Interior Planning Area includes approximately 30 million acres of public, State, and private lands, of which approximately 6.5 million acres are managed by the BLM. Decisions in this RMP apply only to BLM-managed lands. Where the RMP refers to allocation decisions or impacts as percentages, these percentages are based on the 6.5 million acres managed by the BLM. The planning area is divided into four planning subunits (Map 1).

BLM-managed lands include 2.3 million acres of lands selected by the State of Alaska or Alaska Native corporations. The BLM has responsibility to manage these selected lands until they are either conveyed or selections removed. Management measures described in this Proposed RMP apply only to BLM-managed lands in the planning area; no measures have been developed for private, State, or other federally managed lands.

The BLM administers public lands under the Federal Land Policy and Management Act of 1976 (FLPMA), and other applicable laws. The BLM land use planning regulations, 43 Code of Federal Regulations (CFR) 1600, set forth procedures for preparing land use plans and making planning decisions in accordance with FLPMA. These land use plans provide the basis for every on-the-ground action the BLM approves or undertakes. To ensure that management of public lands is consistent with FLPMA and other applicable laws, the BLM prepares and periodically updates its resource management plans (RMPs).

The Eastern Interior Field office is preparing the Eastern Interior Proposed Resource Management Plan and Final Environmental Impact Statement (Proposed RMP/Final EIS) to provide direction for managing public lands within the planning area and to analyze environmental effects that would potentially result from implementing the five alternatives presented in the Proposed RMP/Final EIS. The Eastern Interior RMP will replace current management guidance under existing land use plans implemented from 1980 through 1986.

## Purpose and Need

The purpose of the Eastern Interior Proposed RMP is to provide a comprehensive framework to guide management of public lands and interests within the Eastern Interior Planning Area. The Proposed RMP incorporates new data, addresses land use issues and conflicts, and specifies where and under what circumstances particular activities will be allowed on BLM-managed public lands. The RMP is needed to update existing planning documents, including the Steese RMP (BLM 1986a), the White Mountains RMP (BLM 1986b), and the Fortymile Management Framework Plan (BLM 1980), to address current issues and to meet the requirements of BLM's Land Use Planning Handbook 16021-1. An RMP is also needed for lands in the upper Black River watershed in the northeastern portion of the planning area and scattered parcels east of Fairbanks which are not covered by the existing land use plans.

## Issues

A planning issue is an area of controversy or concern regarding management of resources or uses on BLM-managed lands within the planning area. Issues for the Eastern Interior RMP were initially identified in house and were refined by public scoping, public comment on the Draft RMP/EIS, and resource management concerns of BLM, the State, and other federal agencies. These issues drove the formulation of the plan alternatives, and addressing them has resulted in the range of alternatives presented in the Proposed RMP/Final EIS. Additional discussion on each issue can be found in the Scoping and Issues section in Chapter 1.

Scoping and comments on the Draft RMP/EIS identified the following Issues.

1. How will the Eastern Interior RMP address the impacts of climate change and the development of land management strategies that reduce impacts, incorporate appropriate monitoring, and allow for adaptive management to respond to changes over time?
2. How will the Eastern Interior RMP protect existing water quality if existing mineral withdrawals are removed and improve water quality in areas that are degraded from past or ongoing mining activities?
3. How will the BLM maintain aquatic habitats that support fish populations that are important for subsistence, recreational, and commercial uses, and to fulfill international treaty obligations? If mineral withdrawals are removed, how can placer mining be managed to minimize impacts on fish and aquatic habitats and to provide for the rehabilitation of aquatic habitats in the shortest amount of time possible?
4. How will the BLM manage habitats that support wildlife populations important for subsistence and recreational use?
5. How will the BLM manage public lands to provide continual access to subsistence resources, protect subsistence resources, and support subsistence-based economies in the planning area?
6. Which lands currently withdrawn from mineral entry, location, and leasing should be opened to entry, location, and leasing?
7. How should the BLM manage travel to provide access for recreation, commercial uses, and general enjoyment of public lands while protecting natural and cultural resources?
8. What range of recreational opportunities should be provided to meet the wide variety of public demand?
9. How will the BLM provide for access and effective transportation planning?
10. How will the BLM manage wilderness characteristics in the planning area?

The character of the comments under each of the ten issues listed above varied considerably. Some favored extensive closures to mineral location and entry while others supported making all BLM-managed lands available for mining. Some favored designation of Areas of Critical Environmental Concern (ACEC) or other special designations, while others were opposed to any type of special designation. Some parties favored more liberal access to public lands, including increased access by off-highway vehicles, while others expressed concerns that increasing motorized access threatens sustainable management of biological resources.

## Alternatives

Alternatives must meet the purpose and need; be reasonable; provide a mix of resource protection, use, and development; be responsive to the issues; and meet the established planning criteria. Each alternative constitutes a complete RMP that provides a framework for multiple use management of the full spectrum of resources, resource uses, and programs present in the

planning area. Under all alternatives the BLM would manage their lands in accordance with all applicable laws, regulations, and BLM policies and guidance.

This Proposed RMP/Final EIS describes and analyzes five alternatives. Alternative A (No Action Alternative) represents the continuation of current management practices. Alternatives B, C, D, and E propose changes to current management. These alternatives were developed with input collected from the public during scoping, internal BLM sources, tribal consultation, public comments on the Draft RMP/EIS, and collaboration with the State of Alaska, US Fish and Wildlife Service, Chalkyitsik Village, and Gwichyaa Zhee Gwich'in Tribal government. The alternatives provide a range of choices to meet the BLM's planning and program management requirements and to resolve planning issues. Alternatives B, C, and D were considered in the Draft RMP/EIS. Alternative E was developed after analysis of public comments and is the BLM's Proposed RMP.

All action alternatives recommend changes in which lands are open or closed to mining. All lands within the planning area are currently closed to new mining claims (location) by withdrawals enacted in the early 1970s. Changing the status of these withdrawals can only be done by the Secretary of the Interior and in the case of new withdrawals over 5,000 acres approval by Congress is also needed. More information on withdrawals can be found in section 3.3.8 and Appendix G.

## **Alternative A**

Alternative A continues present management practices and present levels of resource use based on the existing Fortymile Management Framework Plan (MFP) (BLM 1980), the Steese RMP (BLM 1986a), the White Mountains RMP (BLM 1986b), the Fortymile River Management Plan (BLM 1983a), the Birch Creek River Management Plan (BLM 1983b), the Beaver Creek River Management Plan (BLM 1983c), and other management decision documents. Other management decision documents include special rules published in the *Federal Register* (for off-highway vehicle and recreational use) and existing public land orders (PLOs), including ANCSA 17(d)(1) withdrawals. The Upper Black River Subunit would continue to be managed without the benefit of a land use plan.

Mineral leasing and new mining claims would be precluded by public land orders (PLOs) issued under Section 17(d)(1) of ANCSA. Land disposal actions would not occur due to the lack of decisions identifying lands for disposal in the existing land use plans.

Four existing Research Natural Areas (RNAs) and three Special Recreation Management Areas would remain in place. No new special designations, such as Areas of Critical Environmental Concern (ACECs) would be considered. There would be no suitability determinations made for wild and scenic rivers. There would be no decisions to manage certain lands to maintain wilderness characteristics, although existing management would preserve these characteristics in many areas.

There would be no off-highway vehicle (OHV) designations in place for the majority of the Fortymile Subunit (outside of the Wild and Scenic River Corridor) or the Upper Black River Subunit. The current Limited OHV designations would remain in place in the White Mountains NRA and Steese National Conservation Area, including seasonal restrictions on summer motorized use in some areas.

## **Alternative B**

Alternative B emphasizes protection of resource values such as wildlife, fish, and vegetation. Production of minerals and services would be more constrained than in Alternatives A, C, D, and E. In many areas, uses are excluded to protect sensitive resources.

Alternative B recommends approximately 87 percent of BLM-managed lands remain closed to mineral leasing and mineral entry, including the Steese National Conservation Area, the White Mountains NRA, the Upper Black River Subunit, the Fortymile ACEC, and the three wild and scenic river corridors. The plan recommends opening the remaining 13 percent to new mining claims and mineral leasing by partial revocation of PLOs. Unlike Alternative A, this alternative identifies lands suitable for acquisition, disposal, or retention. Scattered parcels identified in Appendix G are available for disposal. Wild and scenic rivers and ACECs are identified as right-of-way avoidance areas.

The four existing RNAs in the Steese National Conservation Area and White Mountains NRA are maintained with current management. Alternative B designates four new ACECs and identifies specific measures proposed to protect or enhance wildlife values within these areas. The Steese, White Mountains, and Fortymile ACECs protect caribou range and Dall sheep habitat. The Salmon Fork ACEC protects anadromous fish habitat, bald eagle nesting, and rare plant habitats. Five eligible river segments (109 miles) are recommended suitable for designation under the Wild and Scenic Rivers Act (WSR Act). Lands possessing wilderness characteristics are identified and 78 percent these lands are managed to maintain these wilderness characteristics.

OHV area designations are identified in all planning subunits. Some areas are limited to existing or designated trails. Restrictions on summer motorized use are more extensive than under Alternative A.

Standard Operating Procedures outlined in Appendix A.2 apply to permitted activities.

## **Alternative C**

Alternative C analyzes a moderate level of protection, use, and enhancement of resources and services. Production of minerals and services is less constrained than in Alternatives A, B, and E, but more constrained than in Alternative D. In some areas, uses are excluded to protect sensitive resources. Constraints to protect resources are less restrictive than under Alternative B, but more so than Alternative D.

Alternative C recommends 34 percent of BLM-managed lands remain closed to mineral leasing and 40 percent to mineral entry and location, including the White Mountains NRA, 81 percent of the Steese National Conservation Area, and the three wild and scenic river corridors. Some ACECs are recommended closed to mineral entry and location, and leasing. Partial revocation of PLOs are recommended to open 60 percent of BLM-managed lands to mineral location and 66 percent to mineral leasing. Same as Alternative B, lands are identified as suitable for acquisition, disposal or retention.

Similar to Alternative B, existing RNAs are maintained. Only three ACECs are designated and they are smaller and/or subject to fewer restrictions than in Alternative B. The White Mountains ACEC is not designated under this alternative, although management similar to that prescribed in other ACECs would apply to crucial caribou and Dall sheep habitat in the White Mountains. The

Salmon Fork ACEC protects anadromous fish habitat, bald eagle nesting, and rare plant habitats. The Steese and Fortymile ACECs protect caribou range and Dall sheep habitat. No rivers are recommended as suitable for designation under the WSR Act. Fewer acres (32 percent) are managed to maintain wilderness characteristics.

As is in Alternative B, OHV designations are put in place in all planning subunits. Some areas are limited to existing or designated trails. Summer motorized use is precluded in some areas. Restrictions on summer motorized use are more extensive than under Alternatives A or D, but less than under Alternative B.

Standard Operating Procedures outlined in Appendix A.2 apply to permitted activities.

## **Alternative D as Modified by the Supplement to the Draft RMP**

Alternative D emphasizes management to facilitate resource development. Production of minerals and services are less constrained than in Alternatives B, C and E. In some areas uses are excluded to protect sensitive resources. Constraints to protect resources will be implemented, but are less restrictive than under Alternatives C and E.

Alternative D recommends 20 percent of BLM-managed lands remain closed to mineral leasing (oil, gas, and other leasable minerals) and 27 percent to mineral entry and location (mining claims). Partial revocation of PLOs are recommended to open 73 percent of BLM-managed lands to mineral location and 80 percent to mineral leasing. The White Mountains NRA, the Birch Creek and Beaver Creek WSR corridors, the “wild” and “recreational” segments of the Fortymile WSR, and 46 percent of the Steese National Conservation Area remain closed to new mining claims. Approximately 451,000 acres in the White Mountains are recommended open for leasing of hard rock minerals including gold and rare earth elements (Section 2.10.2.4). The “scenic” segments of the Fortymile WSR Corridor are recommended opened to mineral entry. The Steese ACEC will remain closed to mineral entry and location. In other ACECs the plan recommends opening lands to new mining claims. As in Alternative B, scattered parcels are available for disposal.

Similar to Alternatives B and C, existing RNAs are maintained. Similar to Alternative C, three ACECs are designated. These ACECs are generally smaller or are subject to fewer restrictions than in alternatives B, C, and E. The Steese and Fortymile ACECs protect current caribou range in the Steese National Conservation Area and Fortymile Subunit. The Salmon Fork ACEC protects anadromous fish habitat, bald eagle nesting, and rare plant habitats.

No rivers are recommended as suitable for designation under the WSR Act. The BLM would manage only 11 percent of the acres possessing wilderness characteristics to maintain these characteristics.

OHV designations are put into place in all planning subunits. Generally, travel and trail restrictions are less than Alternatives B and C, but more than Alternative A. Some areas or uses are limited to existing trails. Some areas are limited to no summer motorized use.

Standard Operating Procedures outlined in Appendix A.2 and A.3 apply to permitted activities.

## Alternative E (Proposed RMP)

The Proposed RMP, also referred to as Alternative E, was created based on examination of public and cooperator comments on the Draft RMP/EIS, consultation with tribal governments, and a review of BLM policies. Alternative E represents the mix and variety of actions that the BLM believes best resolves the issues and management concerns in consideration of all values and programs, and is thus considered BLM's Proposed RMP. Alternative E is a minor variation of the alternatives analyzed in the Draft RMP/EIS and is qualitatively within the spectrum of alternatives analyzed in the Draft. Production of minerals and services are slightly less constrained than in Alternative B.

Alternative E recommends 74 percent of BLM-managed lands remain closed to both mineral leasing and mineral location (staking of mining claims). Partial revocation of PLOs are recommended to open 26 percent of BLM-managed lands to mineral location and mineral leasing. The White Mountains NRA remains closed to new mining claims, mineral leasing, and leasing of hardrock minerals. The Steese National Conservation Area and Birch Creek, Beaver Creek, and Fortymile WSR Corridors remain closed to both mineral entry and mineral leasing. All ACECs and RNAs are recommended closed to mineral entry and mineral leasing, as are riparian conservation areas, restoration watersheds, and the Black River watershed. As in Alternatives B, C, and D scattered parcels of unmanageable lands are available for disposal.

The four existing RNAs are maintained. Management within RNAs would be the same as Alternative C, except the OHV area designation changes from Closed to Limited allowing for winter use of snowmobiles.

Three ACECs are designated. The Fortymile ACEC is smaller and Salmon Fork ACEC is slightly larger than in Alternative C. About 37,000 acres in Mosquito Flats is designated as an ACEC. Additionally crucial caribou and Dall sheep habitat is delineated in the White Mountains and Steese subunits (Map 67). Management of these crucial habitat areas and the Fortymile ACECs protect Fortymile Herd caribou range and Dall sheep habitat. The Salmon Fork ACEC protects anadromous fish habitat, bald eagle nesting, and rare plant habitats. The Mosquito Flats ACEC protects wetlands and moose calving habitat. No rivers are recommended suitable for designation under the WSR Act.

Approximately 53 percent of BLM-managed lands are managed to minimize impacts to wilderness characteristics while allowing for other multiple uses. These areas include crucial caribou and Dall sheep habitat, ACECs, RNAs, riparian conservation areas, and Primitive, Semi-Primitive, and some Backcountry recreation management zones. Management proposed to maintain ACEC and RCA values will also indirectly preserve wilderness characteristics of naturalness, opportunities for solitude and opportunities for primitive and unconfined recreation.

A Limited OHV area designation is put into place in all planning subunits. More detailed travel decisions for the Fortymile, Steese, and White Mountain subunits are deferred to travel management plans to be completed within five years of the record of decision. The Travel Management Plan for the Upper Black River Subunit is defined in this RMP. These decisions are implementation decisions subject to appeal. Interim travel management for areas deferred are the same as Alternative A with minor changes affecting the RNAs, and White Mountains, Steese, and Fortymile subunits. These changes include allowing snowmobile use in RNAs and removing prohibitions on the use of hovercraft and airboats.

Standard Operating Procedures outlined in Appendix A.4 apply to permitted activities.

## Summary of Alternatives Table

**Table 1. Summary of Allocation Decisions all Subunits**

Resource or Resource Use	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
Visual Resource Management (VRM) Class I (acres)	138,000	346,000	343,000	317,000	343,000
VRM Class II (acres)	583,000	4,951,000	1,876,000	546,000	3,383,000
VRM Class III (acres)	1,494,000	371,000	267,000	421,000	11,000
VRM Class IV (acres)	0	855,000	4,037,000	5,239,000	2,787,000
VRM Class unassigned (acres)	4,308,000	None			
Personal use of timber allowed (acres)	6,523,000	4,027,000	6,219,000	6,523,000	Same as A
Commercial timber salvage sales allowed (acres)	4,310,000	4,027,000	6,523,000		
Commercial timber sales allowed (acres)	4,310,000	1,667,000	5,499,000	6,120,000	4,556,000
Commercial use forest products allowed (acres)	4,310,000	4,027,000	6,357,000	6,502,000	6,523,000
Open to mineral leasing <sup>a</sup>	0	834,000	3,266,000	5,204,000	1,713,000
Closed to mineral leasing <sup>a</sup>	6,523,000	5,689,000	3,257,000	1,319,000	4,811,000
Open to locatable minerals <sup>a</sup>	0	834,000	3,887,000	4,755,000	1,713,000
Closed to locatable minerals <sup>a</sup>	6,523,000	5,689,000	2,636,000	1,768,000	4,811,000
Open to mineral materials disposal (acres)	6,523,000	3,772,000	6,134,000	6,378,000	6,134,000
Closed to mineral materials disposal (acres)	0	2,751,000	389,000	145,000	389,000
Closed OHV area designation (acres)	16,000				0
Limited OHV area designation (acres)	2,213,000	6,507,000			6,523,000
No OHV area designation established (acres)	4,294,000	0			
Steese National Conservation Area opened to mining <sup>a</sup> (acres)	0	0	241,000	646,000	0
White Mountains NRA opened to leasing of locatable minerals <sup>a</sup> (acres)	0	0	0	160,000	0
Recommend new FLPMA withdrawals from mineral location and entry <sup>a</sup> (acres)	0	3,362,000	541,000	83,000	2,500,000
Research natural areas (acres)	16,000				

Areas of critical environmental concern (acres)	0	2,811,000	1,632,000	1,368,000	1,022,000
Suitable wild and scenic rivers (# river segments)	0	5	0	0	0

<sup>a</sup>Recommendation. Action required by Secretary of the Interior to implement in all alternatives

## Environmental Consequences

Selection of Alternative A, the No Action Alternative, would maintain the current rate of progress in protecting resource values and in resource development. It would allow for use levels to mostly continue at current levels within the same places in the planning area, with adjustments required in order to mitigate resource concerns in compliance with laws and regulations. Mining exploration and development would be limited to valid existing mining claims. Limitations on OHV use would remain the same, resulting in the continued proliferation of user-created trails and resource degradation in certain areas.

Alternative B would have the least potential to impact physical and biological resources from BLM actions. Levels of mineral exploration and development would be slightly higher than Alternative A but many areas would remain closed to protect sensitive resources. OHV use would be more restricted, reducing resource damage and user-created trails. This more restrictive OHV designation would reduce access to BLM-managed lands. Designation of ACECs and wild and scenic rivers, and management of riparian conservation areas would provide additional protection to wildlife, fish, vegetation, and other natural resources, but could also slightly restrict recreation management. Five river segments would be determined suitable for designation as wild under the Wild and Scenic Rivers Act, affording these areas slightly more protection. There would be greater emphasis on managing for a Primitive, Semi-Primitive, or Backcountry recreation setting.

Alternative C would allow for increased use levels while providing for site-specific protection of resources. There would be a higher potential for resource impacts than under Alternatives A, B, and E, but less than under Alternative D. Levels of mineral exploration would be slightly higher than Alternatives B and E but many areas would remain closed to protect sensitive resources. OHV use would be less restricted than in Alternative B but more than Alternative A. Resource damage and proliferation of user-created trails would be reduced compared to Alternative A, but would still occur in some areas. This more restrictive OHV designation would somewhat reduce access to BLM-managed lands. The designation of ACECs and management as riparian conservation areas would provide additional protection to wildlife, fish, vegetation, and other natural resources, but on fewer acres than in Alternative B. Less of the planning area would be managed for a Primitive, Semi-Primitive, or Backcountry recreation setting.

Alternative D would allow for the most resource development with the fewest constraints and would result in greater impacts on the physical and biological environment than would implementation of Alternative C or D. It offers the greatest potential for mineral development and could result in small economic benefits to local economies. OHV use would be less restricted than in Alternatives B and C, but slightly more limited than in Alternative A. Proliferation of user-created trails and resource degradation would continue in certain areas. Access to BLM-managed lands would be similar to Alternative A. Fewer acres would be designated as ACECs or managed as riparian conservation areas, providing slightly less protection to wildlife, fish, vegetation, and other natural resources. Less of the planning area would be managed for a Primitive, Semi-Primitive, or Backcountry recreation setting than in alternatives B and C.

The Proposed RMP, Alternative E is a minor variation of the alternatives analyzed in the Draft RMP/EIS and is qualitatively within the spectrum of alternatives analyzed in the Draft, falling between Alternative B and C. Production of minerals and services are slightly less constrained than in Alternative B. Initially, OHV and motorboat use would be slightly less constrained (White Mountains and Steese subunits) or slightly more constrained (Fortymile Subunit) than Alternative A as detailed decisions are deferred to future travel management plans. Proliferation of user-created trails and resource degradation would continue in certain areas. Access to BLM-managed lands would be similar to Alternatives A and D. Proposed management of crucial caribou and Dall sheep habitats, designated ACECs, and riparian conservation areas, provides protection to wildlife, fish, vegetation, and other natural resources. Acres managed for Primitive, Semi-Primitive, and Backcountry recreation settings would be similar to Alternative C.

## **Public Involvement**

The BLM initiated scoping for the Eastern Interior Draft RMP/EIS by publishing a Notice of Intent in the *Federal Register* on February 29, 2008. Scoping is a process conducted early in the planning effort that seeks input from agencies and the public on planning issues. The opportunity to comment was also publicized through news releases, a newsletter, flyers, advertisements, and other methods. The BLM held eight public scoping meetings. Agencies and the public were encouraged to submit oral and/or written comments regarding management of public lands in the planning area. The BLM received approximately 600 comments during the scoping period. The scoping report is available online at: [www.blm.gov/ak/eirmp](http://www.blm.gov/ak/eirmp).

Early in the process, the BLM invited federally recognized tribes and agencies to be cooperating agencies. The State of Alaska, Chalkyitsik Village, and the Gwichyaa Zhee Gwich'in are cooperating agencies. In recognition of the government-to-government relationship between tribes and the federal government, the BLM contacted 12 federally recognized tribes in 2008 to inform them of planning process and to initiate government-to-government consultation. The BLM notified Alaska Native corporations with lands within the planning area of the planning process and included them in mailings regarding the RMP/EIS. Several corporations participated in the process by submitting comments during public comment periods or consulting with the BLM.

Public comment on the Eastern Interior Draft RMP/EIS was initiated on March 2, 2012, when the Notice of Availability published in the *Federal Register*. The notice announced the availability of the Draft RMP/EIS for public review and comment. The initial public review period was later extended pending release of a supplement to the Draft RMP/EIS. The public comment period on the Draft RMP remained open until April 11, 2013. Upon publication of the Notice of Availability, the BLM made the Draft RMP/EIS available on the Eastern Interior website, on CD, and in printed form. The BLM publicized the opportunity to comment through news releases, a newsletter, flyers, advertisements, and other means. BLM staff also presented information on the Draft RMP/EIS to various groups. The Eastern Interior Field Office hosted 13 public meetings for the Draft RMP/EIS. Agencies and the public were encouraged to submit oral and/or written comments regarding management of public lands in the planning area.

The BLM initiated public comment on the Hardrock Mineral Leasing in the White Mountains National Recreation Area, Supplement to the Eastern Interior Draft RMP/EIS (Supplement) with a Notice of Availability published in the *Federal Register* on January 11, 2013. This notice announced the availability of the Supplement for public review and comment. The public comment period on the Supplement closed April 11, 2013. Upon publication of the Notice of Availability, the BLM made the Supplement available on the BLM Eastern Interior RMP

website, on CD and in printed form. The BLM publicized the opportunity to comment through news releases, a newsletter, flyers, advertisements, and other means. BLM staff also presented information on the Supplement to various groups. The Eastern Interior Field Office hosted six additional public meetings for the Supplement. Agencies and the public were encouraged to submit oral and/or written comments regarding management of public lands in the planning area.

Based on public comment on the Draft RMP/EIS, the BLM considered changing the boundary of the proposed Fortymile ACEC and designating a new ACEC on the Mosquito Flats, also in the Fortymile region. These specific proposed ACEC boundaries were not considered in the Draft RMP/EIS. Thus, the BLM published an additional notice in the *Federal Register* on January 2, 2015, to provide a 60-day public comment period for these proposed ACECs. The BLM posted a summary document describing the two ACECs on the project website. The BLM publicized the opportunity to comment through news releases, direct mailings, and other means.

The BLM received more than 540 comment submissions, containing approximately 1,500 individual comments, from organizations, government agencies, tribes, and individuals during the multiple comment periods on the Draft RMP/EIS. Additionally, the BLM received approximately 22,400 form letters submitted by email. Because of the duplicative nature of these form letter submissions, each of the six unique form letters represent only one comment submission.

## **Summary of Changes from Draft to Final**

### **Changes to Agency Preferred Alternative**

A fifth alternative, Alternative E was created based on examination of public comments on the Draft RMP/EIS and a review of BLM policies. Alternative E incorporates many of the decisions in Alternative C, but also adopts some management prescriptions from Alternative B. Additional analysis of Alternative E was added to Chapter 4 and the summary of the impacts tables in Chapter 2. Major differences between the Draft and Proposed RMP are discussed below. Alternative E is the BLM's Proposed RMP and the Agency Preferred Alternative (40 CFR 1502.4(e)).

#### Fish and Aquatic Species

- Three additional restoration watersheds are identified: Sumner Creek-Nome Creek (White Mountains Subunit), Steele Creek-Fortymile River (Fortymile Subunit), and Volcano Creek-Clums Fork (Steese Subunit). The BLM reevaluated its restoration watershed inventory between the Draft RMP and Proposed RMP because errors were found in the original inventory. Three additional watersheds were added to the list and one was removed.
- The number of Riparian Conservation Areas increases from 45 in Alternative C to 73 in Alternative E. Alternative E adopts Riparian Conservation Areas from Alternative B for all subunits (Maps 6, 8, and 11). The BLM made this change in the Upper Black River, Steese, and White Mountain subunits based on comments from tribes, USFWS, and Yukon Flats residents who expressed strong concerns about protecting the Black River watershed, water quality on the Yukon Flats, and important subsistence resources. The BLM made this change in the Fortymile based concern for protecting high value watersheds. We received comments both in support of and against Riparian Conservation Areas. After weighing the comments and resource protection concerns, we adopted Alternative B for all subunits.

#### Visual Resources

The BLM increased the number of acres managed for visual resource management class II from 1.9 million acres in Alternative C to 3.4 million acres in Alternative E. The number of acres managed for visual resource management classes III and IV were reduced from 267,000 and 4 million acres in Alternative C to 11,000 and 2.8 million acres in Alternative E respectively (Table 1). In the Proposed RMP, visual resource management classes are generally linked to management of recreation setting character, lands with wilderness characteristics, and lands available for mining. Because Alternative E has fewer acres overall open to mining compared to Alternative C, the acres of VRM Class II increased and VRM Class IV acres decreased.

### Wilderness Characteristics

The number of acres and areas where impacts to wilderness characteristics from other uses would be mitigated increased from 2.1 million acres in Alternative C to 3.5 million acres in Alternative E. These changes are realized through other management prescriptions such as crucial wildlife habitat, ACECs, RNAs, Riparian Conservation Areas, and Primitive, Semi-Primitive, and Backcountry recreation management zones. In the Proposed RMP, lands with wilderness character are linked to other management decisions described above. Because Alternative E has more acres overall under management consistent with maintaining wilderness characteristics compared to Alternative C, the acres where impacts to wilderness characteristics would be mitigated has increased.

If recommendations to modify existing mineral withdrawals are implemented, locatable mineral exploration or development would be possible on approximately 3.9 million acres in Alternative C compared to 2.4 million acres in Alternative E. However the reasonably foreseeable development scenario does not suggest a high percentage of development during the life of the plan. If all forecasted development is realized wilderness characteristics would be affected on less than one percent of all available acres.

- Fortymile Subunit: Management of the Fortymile and Mosquito Flats ACECs, and Semi-Primitive and Backcountry recreation management zones (556,000 acres) is consistent with maintaining wilderness characteristics (Map 73).
- Steese Subunit: Management of crucial caribou and Dall sheep habitat, Mount Prindle and Big Windy Hot Springs RNAs, select Riparian Conservation Areas, and Primitive, Semi-Primitive and Backcountry recreation management zones (1 million acres) is consistent with maintaining wilderness characteristics (Map 77).
- Upper Black River Subunit: Management of the Salmon Fork ACEC and Riparian Conservation Areas (1.1 million acres) is consistent with maintaining wilderness characteristics (Map 81).
- White Mountains Subunit: Management of crucial caribou and Dall sheep habitat, three RNAs, select Riparian Conservation Areas, and Primitive, Semi-Primitive and Backcountry recreation management zones (777,000 acres) is consistent with maintaining wilderness characteristics (Map 77).

### Forest and Woodland Products

Personal use of timber would be considered on all BLM-managed lands in the planning area, an increase of approximately 300,000 acres compared to Alternative C. The BLM made this change based on comments from the State of Alaska and tribes, and to ensure consistency with ANILCA Title VIII which allows for subsistence use of timber. Less land (1.2 million acres) would be available for commercial, non-salvage timber sales in all subunits due to the exclusion of this activity in ACECs and crucial caribou and Dall sheep habitat under Alternative E. The BLM made this change to protect ACEC values and wildlife values. We received comments both

in support of and in opposition to commercial timber sales in these areas. After weighing the comments and resource protection concerns, we adopted a prohibition on non-salvage timber sales in these areas. Allowance for salvage sales would provide opportunities for harvest after wildfire or permitted surface disturbing activities.

### Locatable Minerals

The RMP recommends changes in which lands are open or closed to mining. Most lands within the planning area are currently closed to new mining claims (location) by withdrawals (PLOs) established in the early 1970s. A change the status of these withdrawals can only be executed by the Secretary of the Interior or the Assistant Secretary for Land and Minerals Management, and in the case of new withdrawals of more than 5,000 acres, Congressional approval is also required. Additionally, State- and Native-selected lands are segregated (or closed) to staking of new mining claims. These segregations remain in place until the lands are conveyed or the selections removed. Additional action by the Secretary of the Interior is needed to implement recommendations thus these recommendations will not be effectuated immediately upon approval of the Record of Decision and Approved RMP.

The number of acres recommended closed to locatable minerals (such as gold) increased from 2.6 million acres in Alternative C to 4.8 million acres in Alternative E as described below. The BLM made these changes based on public and internal comment, government-to-government consultation with tribal governments, and policy. We made changes in the Upper Black River subunit after extensive consultation with tribal governments. We received many comments both in support of and in opposition to opening lands to new mineral entry. After weighing comments and resource protection concerns, we recommended the following.

- Fortymile Subunit: Alternative E recommends keeping the Fortymile ACEC closed, but the size of the ACEC is decreased compared to Alternative C. The Mosquito Flats ACEC and Riparian Conservation Areas are added to the list of areas recommended closed. This increases the area recommended closed by approximately 122,000 acres compared to Alternative C (Map 31).
- Steese Subunit: Alternative E recommends keeping 100 percent of the Steese National Conservation Area closed, while Alternative C recommended only 80 percent closed. The area within one-half mile of Birch Creek WSR is closed by Congress. Retaining existing ANILCA closures in the Steese National Conservation Area and closing Riparian Conservation Areas increases the area recommended closed by approximately 244,000 acres compared to Alternative C (Map 38).
- Upper Black River Subunit: Alternative E recommends closure of the Salmon Fork ACEC, Riparian Conservation Areas, and the Black River watershed an increase of 2.2 million acres compared to Alternative C (Map 43).

The BLM analyzed leasing for hardrock minerals in the White Mountains in a Supplement to the Draft RMP/EIS that modified Alternative D. Hardrock mineral leasing in the White Mountains is not permitted in Alternative E. Section 1312 of ANILCA (16 U.S.C. 460mm-4) allows the Secretary to “permit the removal of the non-leasable minerals” from these lands, provided the Secretary makes a finding that such disposition would not have significant adverse effects on the administration of the national recreation area. The BLM based this decision on findings in the Supplemental EIS that leasing would result in cumulative adverse effects on the administration of the national recreation area.

For the planning area, the number of acres recommended to be opened to locatable minerals decreased from 3.9 million acres in Alternative C to 1.7 million acres in Alternative E (Table 1).

## Leasable Minerals

Alternative E increases the number of acres closed to leasable minerals (both fluid and solid) to 4.8 million acres compared to 3.3 million acres in Alternative C. In Alternative E, all areas discussed above under Locatable Minerals would also be closed to mineral leasing. As discussed above, the Secretary of the Interior or Assistant Secretary of Lands and Minerals would need to take action to partially revoke the existing withdrawals from mineral leasing before the recommendations in the RMP could take effect. The BLM made these changes based on public and internal comment, government-to-government consultation with tribal governments, and policy. We received many comments both in support of and in opposition to opening lands to mineral leasing. After weighing comments and resource protection concerns we recommend keeping ACECs, Riparian Conservation Areas, the Black River watershed, Steese NCA and White Mountains NRA closed to mineral leasing.

## Recreation

Alternatives C and E designate three Special Recreation Management Areas (SRMAs), but in Alternative E recreation management zones and recreation setting prescriptions change in the Steese and Fortymile subunits compared to Alternative C:

- Alternative E combines several recreation management zones in the Fortymile SRMA, reducing the total number of zones from seven to five: Logging Cabin Creek and O'Brien Creek zones are combined; Wade Creek and Chicken zones are combined; Fortymile and West Fork zones are combined; and Middle Fork and Mosquito Fork zones are combined. The setting prescriptions for these combined zones remain the same as Alternate C ( Map 47). The BLM combined zones with the same recreation setting character and objectives. This change simplifies the management of the recreation management area and reduces confusion.
- Alternative E combines the Rocky Mountain, Rock Creek, and Preacher Creek zones in the North Steese SRMA into one zone called Preacher Creek with a Backcountry setting prescription. A new zone, Bachelor Creek, with a Middlecountry setting prescription is added. The Wolf Creek zone in the South Steese with a Semi-Primitive setting increases in size by 80,000 acres. These actions decrease Middlecountry from 452,000 in Alternative C to 120,000 acres in Alternative E and increase Backcountry acreage from 154,000 to 488,000 acres (Map 52). The BLM made these changes based on public comments concerning reduction in the amount of Semi-primitive management zones compared to the No Action Alternative. The Bachelor Creek Middlecountry zone recognizes the proximity of this area to the Steese Highway and road access. The change from Middlecountry to Backcountry in the North Steese Unit is more appropriate giving the distance of these lands from the highway, the limited road access, and is more consistent with management of the adjacent Yukon Flats National Wildlife Refuge.

## Travel Management

Alternative E designates RNAs in the Steese and White Mountains subunits as Limited. These RNAs are designated as Closed to off-highway vehicles in Alternatives B, C, and D. The remainder of the planning area would be designated as Limited, as proposed in Alternative C. The Closed area designation is reduced from 16,000 acres in Alternative C to 0 acres in Alternative E, allowing for snowmobile use in RNAs. The BLM made these changes in response to comments from the State of Alaska regarding ANILCA protections for use of snowmobiles for subsistence use.

The comprehensive travel management plan proposed in the Draft RMP/EIS for the White Mountains would be deferred until implementation of the Approved RMP. Alternatives B–D state that a comprehensive travel management plan would be developed for the Fortymile and Steese subunits, but in the interim travel would be limited to existing trails. These travel management plans would be completed within five years of the ROD for the RMP. The BLM made these changes in response to multiple commenters expressing concern about the need for additional data and more public input on travel management decisions. Additionally recent changes in BLM policy recommend developing travel management plans through a process separate from the RMP.

The travel management plan for the Upper Black River Subunit will be concurrent with the signing of the ROD as proposed in the Draft RMP/EIS. The BLM made this decision based on the lack of both trails and travel management issues in the Upper Black River Subunit and internal workload concerns. We determined that including the travel management plan as part of the RMP is appropriate. We will implement the travel management plan through the Supplemental Rule process, which includes additional public outreach.

In the Proposed RMP the interim management in place until travel management plans can be completed is the current management described in Alternative A, with the addition of the changes described below. These implementation level decisions will be accomplished through the Supplemental Rule process with additional hearings to meet the requirements of ANILCA titles VIII and XI. The BLM made these changes based on comments from the State and to ensure consistency with ANILCA while still addressing immediate resource concerns in the interim between the RMP and travel management plans.

#### **Fortymile Subunit Interim Management – Alternative E**

- Implement a 1,000 pound curb weight and 50 inch width limitation for snowmobiles to replace 1,500 pound GVWR limitation within the Fortymile Wild and Scenic River Corridor and the 6,000 pound GVWR on remaining lands.
- Implement 1,500 pound curb weight and 64 inch width limitation for summer OHVs to replace 1,500 pound GVWR limitation within the Fortymile Wild and Scenic River Corridor.
- Implement a 1,500 pound curb weight limitation for summer OHVs to replace the 6,000 pound GVWR limitation on remaining lands.
- Implement a seasonal restriction on summer use of OHVs in the Mosquito Flats ACEC.
- Remove prohibition on motorboat use on the non-navigable, “wild” segments of the Fortymile WSR: North Fork above the Kink, Champion Creek, Middle Fork, Joseph Creek, and Mosquito Fork above Ingle Creek.

#### **Steese and White Mountains Subunits Interim Management – Alternative E**

- Implement a 1,000 pound curb weight and 50 inch width limitation for snowmobiles to replace 1,500 pound GVWR limitation.
- Implement a 1,000 pound curb weight and 50 inch width limitation for summer OHVs to replace 1,500 pound GVWR limitation.
- Set weight and width limitations for utility terrain vehicles (UTVs) in the White Mountains: 64 inch width and less, and 1,500 pounds curb weight or less.

- Designate 27 miles of trail and the Nome Creek tailings area in the White Mountains for UTV use.
- Remove prohibition on the use of airboats and hovercraft within the Steese National Conservation Area and White Mountains NRA.
- Remove prohibition on snowmobile use in RNAs.

Alternative E interim management differs substantially from Alternative C. The area seasonally limited (no summer OHV use) would be reduced from 1.2 million acres to 758,000 acres. The area where OHV use would be limited to either designated or existing trails would be reduced from 2.7 million acres in the Fortymile, Steese, and White Mountains Subunits to the 248,000 acres identified in Alternative A in the Fortymile WSR. The BLM will consider these types of limitations during travel management planning and decisions implemented through travel management planning will likely vary substantially from interim management. We will conduct additional NEPA analysis on travel management plans.

### Areas of Critical Environmental Concern

The boundary of the Fortymile ACEC was adjusted to encompass only core caribou calving/postcalving habitat. The proposed Fortymile ACEC decreased from 554,000 acres in Alternative C to 362,000 acres in Alternative E. The ACEC is recommended closed to both locatable and leasable minerals. This change was in response to input from the State of Alaska and the Alaska Congressional Delegation that BLM could protect caribou habitat through other means (Map 63).

A proposed Mosquito Flats ACEC (37,000 acres) is added to Alternative E. The ACEC would be recommended closed to both locatable and leasable minerals. The ACEC would be designated to protect unique wetlands and high-density moose calving habitat. This ACEC was recommended based on resource concerns and strong support from the general public for designation.

The Salmon Fork ACEC (623,000 acres) would be recommended closed to both locatable and leasable minerals (Map 69). In Alternative C the ACEC was closed to leasable minerals, but recommended open to locatable minerals. The BLM made this change based on comments from the USFWS, Yukon Flats residents, and tribes who expressed strong concerns about protecting the Black River watershed and important subsistence resources.

Alternative E does not designate the Steese ACEC as proposed in Alternative C. This change was based on input from the State of Alaska. The current designation of the Steese National Conservation Area is sufficient to protect caribou and Dall sheep habitat. Duplicative designations are not needed.

## **Other Changes Requiring Addition of Supplementary Information**

Summary of Alternatives tables 2.10, 2.17, 2.18, and 2.25 were edited to add Alternative A (No Action) and Alternative E (Proposed RMP). The BLM made this change in response to public comments requesting more clarity in differences between alternatives.

The standard operating procedures in Appendix A were reviewed and revised. Section A.2 lists the SOPs considered in the Draft RMP/EIS. Section A.3 lists additional SOPs considered

in the Supplement to the Draft RMP, and section A.4 lists the SOPs considered in the Proposed RMP/Final EIS. The BLM made this change in response to numerous public, internal, and cooperator comments recommending changes to SOPs, expressing concern about effects of SOPs, or proposing additional SOPs.

The Supplement to the Draft RMP for leasing of hardrock minerals in the White Mountains was added as Appendix M. Additionally the proposed management decisions in the Supplement were added to Alternative D in Chapter 2 of this document. The BLM added this information to merge the findings of the Supplemental EIS with the Final EIS.

Section 2.4 was added describing BLM's responsibilities in complying with Title VIII and XI of ANILCA. The BLM made this change in response to comments from the State and the public requesting more clarity on how we will comply with these sections of ANILCA when implementing decisions in the Approved RMP.

Appendix G was updated to describe withdrawals and the process to modify, revoke, or replace withdrawals. The BLM made this change in response to comments from the State and the public requesting more clarity on withdrawal recommendations and the process for changing withdrawals.

A summary of estimated GHG emissions for communities within the planning area as well as a summary analysis of seasonal GHG emissions associated with placer-mining operations was added to section 3.2.1. Placer-mining is the single largest BLM-authorized industrial activity in the planning area. The BLM made this change in response to public and internal comments, and policy.

The BLM Greenhouse Gas & Climate Change NEPA (GHGCC-NEPA) toolkit spreadsheets were used to quantitatively estimate GHG emissions associated with projected placer mine activities by alternative for each subunit in the planning area (section 4.3.1.1.1.2.1). The BLM made this change in response to public and internal comments, and policy.

The Section 810 Analysis in Appendix J was reviewed and updated based on public comments and tribal consultation. An analysis of Alternative E was added. The BLM made this change in response to public and tribal comments, and internal policy on how to comply with Section 810 of ANILCA. As discussed in section J.4, the Proposed RMP (Alternative E) was found through the ANILCA Sec. 810(a) process to have no significant restriction on subsistence uses nor with the cumulative case. Therefore the determination process as described in ANILCA Sec. 810(a)(3)(A), (B), and (C) was not required.

## **Minor Changes**

The BLM made the following changes based on a variety of public and internal comments.

- Required operating procedures (ROPs) from Appendix A of the Draft RMP/EIS were renamed as standard operating procedures (SOPs) and are referred to as such throughout the Proposed RMP/Final EIS.
- Numerous editorial changes were made to the text and maps.
- Legends on maps were clarified and made more consistent.

- Land status data used for maps and acreage calculations was updated to 2015.
- Additional subsistence use areas were added to maps based on public comments and more recent data.
- Maps were consolidated where possible and renumbered to incorporate Alternative E maps.
- Additional analysis was added to all alternatives.
- Activities considered in the cumulative impact analysis were reviewed and updated.
- On April 30, 2014 the U.S. Board on Geographic Names officially changed the name of the Black River to Draanjik River. Draanjik is the traditional Gwich'in name for the river and translates as "caches along the river." The local Gwich'in people are called the Draanjik Gwich'in. In order to avoid confusion, this Proposed RMP/Final EIS continues to use the name "Black River". In the Approved RMP and Record of Decision, the BLM will change the name of the "Upper Black River Subunit" to the "Draanjik Subunit", change all references to the mainstem Black River to Draanjik River, and update maps to show the new name.

## **Summary of Additional Maps, Tables, and Figures**

The BLM made the following changes based on a variety of public and internal comments.

- Maps for Alternative E were added.
- A summary of alternatives table for the entire planning area was added to section 2.2.6 and in the Executive Summary.
- Additional tables summarizing climate and GHG emissions for the planning area were added to section 3.2.1.1.

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**Chapter 1**  
**Introduction**



## 1.1. How to Read This Chapter

This chapter describes the purpose and need for the Eastern Interior Resource Management Plan (RMP) (section 1.3) and provides a general description of the planning area (section 1.4). It describes how the RMP addresses the issues raised during scoping (section 1.5). Additionally, the chapter outlines the planning criteria (section 1.6) and the relationship between the RMP and other BLM plans (section 1.7).

## 1.2. Background

On February 29, 2008, the *Federal Register* published the Bureau of Land Management (BLM) Notice of Intent to prepare a resource management plan and associated environmental impact statement (RMP/EIS) for the Eastern Interior Planning Area (planning area). The publication on March 2, 2012, of the Notice of Availability for the Draft RMP/EIS in the *Federal Register* initiated the public comment period. The BLM also published Hardrock Mineral Leasing in the White Mountains National Recreation Area, Supplement to the Eastern Interior Draft RMP/EIS (Supplement) during the Draft RMP/EIS public comment period. The Notice of Availability published in the *Federal Register* on January 11, 2013, and initiated the public comment period on the Supplement. The public comment periods on both the Draft RMP/EIS and Supplement remained open until April 11, 2013.

The BLM reviewed and considered all public comments when preparing the Proposed RMP/Final EIS. Appendix L summarizes and responds to public comments on both the Draft RMP/EIS and the Supplement.

When approved, the RMP will provide direction for managing public lands under the jurisdiction of the BLM Eastern Interior Field Office and Central Yukon Field Office in Interior Alaska. The Final EIS analyzes the environmental effects that could result from implementing the alternatives addressed in the Proposed RMP. The affected lands are currently managed in accordance with the Fortymile Management Framework Plan (MFP), Record of Decision (ROD) and RMP for the Steese National Conservation Area, and ROD and RMP for the White Mountains National Recreation Area; or are managed without the benefit of a land use plan.

The Proposed RMP incorporates new information and regulatory guidance that have come about since developing the MFP and original RMPs. The Proposed RMP focuses on providing management direction where it may be lacking, or requires clarification, to resolve land use issues or conflicts.

The Proposed RMP/Final EIS was prepared using BLM's planning regulations and guidance issued under the authority of the Federal Land Policy and Management Act (FLPMA) of 1976 (43 USC 1701 et seq.) and BLM's Land Use Planning Handbook, H-1601-1 (BLM 2005a). An EIS is incorporated into this document to meet the requirements of the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR 1500-1508) (CEQ 1978), the U.S. Department of the Interior NEPA regulations (43 CFR 46), and requirements of BLM's NEPA Handbook, H-1790-1 (BLM 2008g).

### 1.3. Purpose and Need for the Plan

The purpose of the Eastern Interior Proposed RMP is to provide a comprehensive framework to guide management of public lands and interests within the Eastern Interior Planning Area. The Proposed RMP incorporates new data, addresses land use issues and conflicts, and specifies where and under what circumstances particular activities will be allowed on BLM-managed public lands. The objectives, land use allocations, and management decisions on these public lands will be based on multiple use and sustained yield, except where a tract of such public land has been dedicated to specific uses according to any other provisions of law, it will be managed in accordance with such law, in accordance with Section 103 of FLPMA.

Evaluations of the Steese and White Mountains RMPs and the Fortymile MFP showed that the current plans are not responsive to issues in the planning area; major programs that need updating to respond to current issues include fisheries, wildlife, travel management, recreation, withdrawals, and minerals. The evaluations also found that current plans do not reflect the entire suite of decisions to include in land use plans per BLM's Land Use Planning Handbook (H-1601-1); decisions missing include air quality, non-native invasive plants, and wilderness characteristics.

Additionally, an RMP is needed to cover lands in the upper Black River watershed in the northeastern portion of the planning area and also scattered parcels east of Fairbanks, which are not covered by an existing land use plan.

To respond to current issues, the Proposed RMP addresses major resources and resource use needs:

- Fisheries: Additional protections for fish populations and habitats to: comply with international treaties and sustain subsistence resources.
- Mineral Withdrawals: Withdrawal review to identify which lands should be opened to mineral entry and leasing.
- Recreation management: An outcome-based approach to address recreation changes resulting from increased populations, increased recreation use, and changes in type of recreation.
- Travel management: Address resource impacts from off-highway vehicles and ensure travel management decisions are consistent with recreation management decisions.
- Wildlife: Additional protections for wildlife populations and habitats to sustain subsistence resources (primarily caribou).

In addition to responding to current issues, the Proposed RMP makes the required decisions as outlined in BLM's Land Use Planning Handbook (H-1601-1).

### 1.4. Planning Area Description

The planning area includes some land within the northeastern portion of the Fairbanks North Star Borough, but otherwise, the lands are unincorporated. Twelve communities are wholly within the planning area: Birch Creek, Circle, Central, Chalkyitsik, Chicken, Dot Lake, Healy Lake, Eagle Village, Eagle, Northway, Tetlin, and Tanacross. Several other communities are adjacent or partially within the planning area, including: Beaver, Big Delta, Delta Junction, Ester, Fairbanks, Fort Yukon, Fox, Livengood, North Pole, Tok, and Stevens Village, are adjacent to or partially within the planning area.

The majority of the planning area is roadless, although the Elliott and Dalton highways bound the planning area on the west, the Alaska Highway on the south, and the Steese and Taylor Highways are within its boundaries.

The planning area includes four distinct geographic and management subunits (See Map 1 and section 1.4). The Proposed RMP and associated EIS evaluate and propose land use decisions for each subunit. The BLM will develop four RODs, one for each subunit.

These subunits are described in more detail in the following sections. Of the approximately 31 million acres within the planning area, decisions in the RMP/EIS will apply to approximately 6.5 million acres, as described below and shown in Table 1.1 *Surface Management Responsibilities and Status*. Where the RMP refers to allocation decisions or impacts as percentages, these percentages are based on the 6.5 million acres managed by the BLM. The decision space in the RMP is the BLM-managed lands.

Land conveyances to the State of Alaska and Native corporations are ongoing. The figures in Table 1.1 are based on land status data as of January 2014 and may have changed for state, Native corporation, and unencumbered BLM lands. The Fort Wainwright Yukon Maneuver Area and the Gerstle Training Area (Map 1) are excluded from the planning area. In some cases, the BLM may have an interest in non BLM-managed lands within the planning area, such as rights-of-way, leases, or easements. Examples could be: trail rights-of-way across State land to the White Mountains and a Fire Facility lease on state lands on Fort Yukon Airport. The impact analysis in the Final EIS addresses these additional BLM interests for the purpose of NEPA compliance.

**BLM (unencumbered):** These are lands that will be retained in long-term federal ownership. These lands, which constitute approximately 13 percent of the planning area, are not selected by the State of Alaska or by Native corporations.

**State-selected:** These are public lands that are selected by the State of Alaska as part of the Alaska Statehood Act of 1958 and Alaska National Interest Lands Conservation Act (ANILCA) of 1980. Until conveyance, State-selected lands outside of National Park system lands or National Wildlife Refuges are managed by the BLM. ANILCA (Section 906 (f)) allows for overselection by the State up to 25 percent of the entitlement. Some State-selected lands will eventually be retained in long-term federal ownership. State-selected lands constitute approximately 5 percent of the planning area. Until these lands are either conveyed to the State or the selections removed, the lands are segregated from mineral entry (closed to staking of new federal mining claims).

**Native-selected:** The Alaska Native Claims Settlement Act (ANCSA) of 1971 gave Alaska Natives an entitlement of 44 million acres to be selected from public lands defined and withdrawn by ANCSA. Some ANCSA corporations filed selections in excess of their entitlement and some of the Native-selected lands will be retained in federal ownership. Native-selected lands constitute approximately 4 percent of the planning area. Until these lands are either conveyed to the Native corporation or the selections removed, the lands are segregated from mineral entry (closed to staking of new federal mining claims).

**Mineral split-estate:** Federal split-estate lands are those on which the surface of the land has been patented, that is, transferred to private ownership, while the mineral interests are retained by the United States. The rights of a surface owner generally do not include ownership of mineral resources such as oil, natural gas, or coal. Under the appropriate provisions and authorities of the Mineral Leasing Act of 1920, individuals and companies can prospect for and develop coal, petroleum, natural gas and other minerals reserved by the federal government. All subsurface

mineral estate lying beneath BLM lands is managed by the BLM. State and Native selections segregate the land and keep it closed to mineral entry, except for pre-existing, valid federal mining claims (locatable minerals) and issuance of mineral material permits with the concurrence of the selecting entity (salable minerals). Conveyances made under ANCSA and the Statehood Act include the mineral estate. Conveyances made under other land disposal laws, such as the Recreation and Public Purpose Act, do not include the mineral estate. Within the planning area, the BLM manages an estimated 27,000 acres of subsurface mineral estate beneath private surface.

There are lands within the planning area that will not be covered by the RMP/EIS. These lands are described below:

**State of Alaska lands:** State lands constitute approximately 37 percent of the planning area. This includes approximately 15,000 acres of inholdings within the Steese National Conservation Area and state-owned lands under navigable waters.

**National Park Service lands:** Lands within the Yukon-Charley Rivers National Preserve constitute approximately 8 percent of the planning area.

**U.S. Fish and Wildlife Service lands:** Lands within the Yukon Flats, Arctic, and Tetlin National Wildlife Refuges constitute approximately 24 percent of the planning area.

**Military and other federal lands:** These lands have been withdrawn and set aside for use by the military or other purposes. These lands are unlikely to be returned to the public domain or be managed by the U.S. Department of the Interior. These lands constitute less than 1 percent of the planning area.

**Private lands:** These lands include Native corporation lands and other private lands. Private lands constitute approximately 10 percent of the planning area.

**Table 1.1. Surface Management Responsibilities and Status**

Surface Management Responsibility/Status <sup>a</sup>	Acres	Percent of Planning Area
BLM-managed public lands (unencumbered)	4,181,000	14
State-selected lands (BLM) <sup>b</sup>	1,558,000	5
ANCSA-selected lands (BLM)	783,000	3
<b>Total BLM-Managed Surface Estate</b>	<b>6,523,000</b>	<b>21</b>
BLM subsurface mineral estate (under private surface) <sup>c</sup>	27,000	<1
<b>Total BLM-Managed Surface Estate and Split-Estate</b>	<b>6,550,000</b>	<b>21</b>
National Park Service lands	2,518,000	8
Military lands	22,000	<1
U.S. Fish and Wildlife Service lands	7,374,000	24
Other federal lands	19,000	<1
State of Alaska lands	11,362,000	37
Private (including Native lands)	3,121,000	9
Water	12,000	<1
<b>Total Lands Within Planning Area</b>	<b>30,951,000</b>	

<sup>a</sup>Land Status as of April 2015

<sup>b</sup>Total State-selected lands, regardless of priority

<sup>c</sup>Estimated based on acres of Native allotments and subsurface notations on Master Title Plats

### **1.4.1. Fortymile Subunit**

The Fortymile Subunit is bounded on the north by the Upper Black River Subunit, on the east by the U.S.-Canadian border, on the south by BLM Glennallen Field Office boundary and the Alaska (Richardson) Highway, and on the west by the Alaska and Elliott highways (Map 2). Within the subunit, BLM-managed lands consist of the Fortymile Wild and Scenic River (WSR), relatively large blocks of BLM-managed land within the Fortymile watershed, and scattered parcels along the Alaska Highway. Other federally managed lands within the subunit include the Yukon-Charley Rivers National Preserve and Tetlin National Wildlife Refuge (NWR). Much of the subunit is State of Alaska lands. Private lands are located around several communities including Fairbanks, Fox, Delta Junction, Dot Lake, Tanacross, Tok, Tetlin, Northway, Chicken, and Eagle. Doyon, Limited, a regional Native corporation, also owns large blocks of land within the subunit. The Alaska, Taylor, and Top of the World highways cross the planning area. Other than some sections of the Fortymile River, there is little BLM-managed land near the highways.

The entire subunit encompasses 15.8 million acres, with approximately 1.8 million acres currently managed by the BLM. Approximately 1.4 million acres within the subunit are either State- or Native-selected lands. Of the 1.4 million acres, approximately 261,000 acres are under a decision for interim conveyance to Doyon, Limited, meaning these acres will be conveyed in the near future. Doyon, Limited, has identified 214,000 acres as high-priority selections. State-selected lands in the subunit encompass 698,000 acres. Until these lands are either conveyed or the selections removed, these lands are closed to staking of new federal mining claims.

### **1.4.2. Steese Subunit**

The Steese Subunit (Map 3) is bounded on the north and east by the Yukon River, on the south by the Yukon-Charley Rivers National Preserve and the Fairbanks North Star Borough, and on the west by the Fairbanks North Star Borough, the White Mountains NRA, and Beaver Creek. Within the subunit, BLM-managed lands consist of the Steese National Conservation Area, Birch Creek WSR, federal mining claims along the Steese Highway, and scattered townships around the Village of Circle. The Pinnell Mountain National Recreation Trail is within the subunit. Other federal lands include part of the Yukon Flats NWR. A large block of State land is located along the Steese Highway, between the north and south units of the Steese National Conservation Area. Private lands are found around Central, Circle, Beaver, and Birch Creek, the four communities within the subunit. Roads are limited to the Steese Highway, Circle Hot Springs Road, local village roads, and several mining roads.

The Steese Subunit encompasses 4.2 million acres, with approximately 1.3 million acres currently managed by the BLM. Approximately 43,000 acres within the subunit are either State- or Native-selected lands. Of the selected acreage, approximately 8,000 acres are selected by the Danzhit Hanlaih Corporation (Native corporation for Circle) and 35,000 are State-selected. Until these lands are either conveyed or the selections removed, the lands are closed to staking of new federal mining claims.

### **1.4.3. Upper Black River Subunit**

The Upper Black River Subunit is bounded on the north by the Porcupine River, on the east by the U.S.-Canadian border, on the south an arbitrary line through the Yukon-Charley Rivers National Preserve, and on the west by the Yukon River (Map 4). Within the subunit, BLM-managed lands

consist of a large block of land bounded by the Yukon Flats and Arctic NWRs, Yukon-Charley Rivers National Preserve, State lands, and Native corporation (private) lands. BLM lands are relatively contiguous except around the village of Circle, where land ownership is scattered. There are no BLM special designations within the subunit and no federal mining claims on BLM-managed lands. The villages of Fort Yukon and Chalkyitsik are located within the subunit, but are within the Yukon Flats NWR. Other than roads within the villages, the subunit is roadless.

This subunit encompasses 7.8 million acres with approximately 2.4 million acres currently managed by the BLM. There are 812,000 acres of State-selected land within the subunit. Due to its low selection priority, however, it is anticipated that the BLM will retain most, if not all, of these lands. Approximately 20,000 acres is selected by Doyon, Limited, or is Village-selected. Approximately 1,400 acres of the Doyon, Limited, land selections are high-priority. Danzhit Hanlaih Corporation has approximately 7,400 acres of selected lands. Most of these lands will likely remain under BLM management because the corporation has received most of their entitlement. Until these lands are either conveyed or the selections removed, the lands are closed to staking of new federal mining claims.

On April 30, 2014 the U.S. Board on Geographic Names officially changed the name of the Black River to Draanjik River. The proposed name change was submitted by the Second Chief and Gwich'in Language Coordinator of the Fort Yukon Native Village. Draanjik is the traditional Gwich'in name for the river and translates as "caches along the river." The local Gwich'in people are called the Draanjik Gwich'in. The Board did not change the name of the Little Black River. In order to avoid confusion, this Proposed RMP/Final EIS continues to use the name "Black River". In the Approved RMP and Record of Decision, the BLM will change the name of the "Upper Black River Subunit" to the "Draanjik Subunit", change all references to the mainstem Black River to Draanjik River, and update maps to show the new name.

#### **1.4.4. White Mountains Subunit**

The White Mountains Subunit is bounded on the north by the Yukon River, on the east by Beaver Creek and the Steese National Conservation Area, on the south by the Chatanika River, and on the west by the Elliott and Dalton highways (Map 5). Within the subunit, BLM-managed lands consist of the one-million-acre White Mountains NRA and associated lands (Wickersham Dome and three recreation withdrawals), Beaver Creek WSR, and federal mining claims around Livengood. The remainder of the subunit consists of part of the Yukon Flats NWR, large blocks of State land, and small parcels of private land. The Steese Highway crosses the southern part of the subunit and the Elliott and Dalton highways bound the subunit. Other roads include the Livengood, U.S. Creek, and Nome Creek roads. The communities of Livengood and Stevens Village are within or immediately adjacent to the subunit.

The BLM currently manages approximately one million acres of the 3.1 million acres in the subunit. Approximately 13,000 acres are high-priority State-selections and there are no Native-selected lands. Approximately 4,000 acres of federal mining claims are within the subunit. Until these lands are either conveyed or the selections removed, the lands are closed to staking of new federal mining claims.

## 1.5. Scoping Issues

Scoping describes the early and open process for determining the extent or “scope” of issues to address during the planning process. Public scoping is required by NEPA (40 CFR 1501.7) and BLM planning regulations (43 CFR 1610.2 and 43 CFR 1610.4–1). Scoping’s purpose is to identify important issues for the future management of public lands and resources. These issues guide development of alternatives that will be evaluated in the EIS. The BLM conducted scoping for the Eastern Interior RMP from February 29 to August 15 in 2008. A scoping report summarizes this process (BLM 2008b) and is available online at <http://www.blm.gov/ak/eirmp>.

### 1.5.1. Issues Addressed

Scoping identified the following issues addressed in the Draft RMP/EIS.

#### 1.5.1.1. Climate Change

The Council on Environmental Quality (CEQ) released draft guidance on December 18, 2014 that describes how federal departments and agencies should consider the effects of greenhouse gas (GHG) emissions and climate change in their NEPA reviews. This guidance explains that agencies should consider 2 issues, both (1) the potential effects of a proposed action on climate change, as indicated by its estimated greenhouse gas emissions, and (2) the environmental effects of climate change on their proposed actions. Based on the CEQ guidance climate change will be addressed and discussed throughout this document within the CEQ two issue framework.

**Issue Statement:** (1) How will current and future BLM-authorized actions potentially affect climate change, as indicated by GHG emissions, and where a proposed action is anticipated to emit GHG to the atmosphere in quantities that BLM finds meaningful, how will BLM quantify and disclose its estimate of the expected GHG emissions in the environmental documentation for the proposed action.

The BLM Greenhouse Gas and Climate Change 2015 NEPA Toolkit (<http://ghgtoolkit.blm.gov/>) is the primary tool used in analyzing current and projected GHG emissions from BLM-authorized actions in the planning area where a proposed action is anticipated to emit GHGs to the atmosphere in quantities that BLM finds meaningful. The toolkit is a comprehensive tool and resource designed for use by BLM resource specialists to estimate total annual greenhouse gas emissions and output summary reports for documentation of reference data and computations. The estimate level of GHG emissions serve as a reasonable proxy for assessing potential climate change impacts, and provide decision makers and the public with useful information for a reasoned choice among alternatives.

**Issue Statement:** (2) How will current and future projected climate change due to regional and global conditions impact current and future BLM-authorized actions in the context of the reasonably foreseeable future condition of the affected environment.

The BLM contracted with the University of Alaska, Scenarios Network for Alaska Planning to develop a climate change scenario for the planning area (Rupp and Springsteen, 2009b). The results of this work are summarized in a report available online at <http://www.snap.uaf.edu/>. The outcomes from this report were used during the development of the Draft EIS, to help describe the existing environment and to analyze impacts of the alternatives. These predictions were also used

to help develop Standard Operating Procedures (SOPs) and Fluid Mineral Leasing Stipulations that would be adaptable over time (Appendix A).

### 1.5.1.2. Soil Resources

**Issue Statement:** (1) How will the Eastern Interior RMP protect existing soil resources in newly disturbed areas and areas that are degraded from past or other ongoing activities?

The RMP includes goals and decisions relative to soil resources in Alternatives B, C, D, and E. Additionally, Appendix A Standard Operating Procedures and Fluid Mineral Leasing Stipulations includes SOPs that help protect soil resources, directly and indirectly by protection of water and vegetative resources.

**Issue Statement:** (2) How will the Eastern Interior RMP minimize soil erosion and sedimentation associated with storm water discharge from disturbed sites, particularly where soils and overburden are stripped and stockpiled for an extended period.

The RMP includes decisions to mitigate erosion and sedimentation (non-point source pollution) through the Alaska Pollutant Discharge Elimination System (APDES) permit for Storm Water discharge and implementing Best Management Practices included in the required Storm Water Pollution Prevention Plan prior to undertaking surface disturbing activities equal to or greater than one acre.

### 1.5.1.3. Water Quality

**Issue Statement:** How will the Eastern Interior RMP protect existing water quality if existing mineral withdrawals are removed and improve water quality in areas that are degraded from past or ongoing mining activities?

The RMP includes goals and decisions relative to water quality in Alternatives B, C, D, and E, consistent with State of Alaska Water Quality Standards. Additionally, Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations* includes SOPs that protect water quality, directly and indirectly by protection of soil and vegetative resources.

Under the Antidegradation Policy of the Alaska Water Quality Standards (18 AAC 70.015) those segments of Birch Creek, Beaver Creek, and the Fortymile River Wild and Scenic Rivers, congressionally designated as “wild” or “scenic”, are nominated as Tier 3 waters. The highest level of protection is reserved for tier 3 waters, which are also referred to as Outstanding National Resource Waters (ONRW). See 18 AAC 70.015(a)(3).

The RMP includes decisions to ensure permittees obtain a State of Alaska permit for storm water discharge prior to undertaking surface disturbing activities of one acre or more. The Alaska Pollution Discharge Elimination System (APDES) storm water permits require operators of permitted activities or systems to use best management practices designed to effectively protect water quality for their particular site conditions and activity.

### 1.5.1.4. Fisheries Management

**Issue Statement:** How will the BLM maintain aquatic habitats that support fish populations (both salmonid and non-salmonid) that are important for subsistence, recreational, and commercial

uses, and to fulfill international treaty obligations? If mineral withdrawals are removed, how can placer mining be managed to minimize impacts on fish and aquatic habitats and to provide for the rehabilitation of aquatic habitats in the shortest amount of time possible?

Within the planning area, watersheds were evaluated and prioritized based on ten factors considering fisheries science and BLM policy (Appendix I *Fisheries and Aquatic Resources*).

The RMP provides a range of alternatives identifying high-priority Conservation and Restoration Watersheds. Decisions under section 2.6.2.3 Fish and Aquatic Species describe how these areas will be managed. Additionally, the Salmon Fork of the Black River was proposed for designation as an Area of Critical Environmental Concern (ACEC) in all action alternatives.

### 1.5.1.5. Wildlife Management

**Issue Statement:** How will the BLM manage habitats that support wildlife populations which are important for subsistence and recreational use?

The RMP proposes management for priority wildlife species and habitat. Some alternatives designate ACECs for Dall sheep and caribou calving/postcalving habitats, others prescribe management for priority habitats. Priority species include those species important for subsistence and recreational use. Additionally, Standard Operating Procedures (Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) were developed to protect certain habitats and priority species (e.g., caribou calving and postcalving habitat, raptor nesting areas, Dall sheep habitat).

### 1.5.1.6. Subsistence

**Issue Statement:** How will the BLM manage public lands to provide continued access to subsistence resources, protect subsistence resources, and support subsistence-based economies in local communities?

The RMP includes specific goals and decisions to ensure that public lands continue to provide access to subsistence resources. The RMP highlights protection of significant subsistence resources, including Fortymile caribou and salmon. Additionally, the RMP identifies high-priority Conservation Watersheds, which would be managed to protect the riparian and aquatic habitats. Species important for subsistence are designated as priority fish and wildlife species. Standard Operating Procedures (Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) provide protection for habitats supporting subsistence species.

### 1.5.1.7. Minerals Management

**Issue Statement:** Which lands currently withdrawn from mineral entry, location, and leasing should be opened to entry, location, and leasing?

The RMP makes recommendations for the location and number of acres available for mineral leasing, locatable mineral entry, use of salable minerals, and provides Standard Operating Procedures, Fluid Mineral Leasing Stipulations, and guidelines for these activities (Chapter 2 and Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*). The RMP provides a wide range of alternatives for the number of acres recommended open to mineral entry and/or leasing. Decisions to open or close lands to mineral entry would not take effect on

approval of the RMP. Instead, follow-up action by the Secretary of the Interior or the Assistant Secretary of Lands and Minerals is required to implement these recommendations.

### **1.5.1.8. Travel Management**

**Issue Statement:** How should the BLM manage travel to provide access for recreation, commercial uses, and general enjoyment of public lands while protecting natural and cultural resources?

The RMP includes a range of alternatives that propose various off-highway vehicle designations and Travel Management Areas (Chapter 2). Acceptable modes of access and travel are identified for each Travel Management Area.

### **1.5.1.9. Recreation and Visitor Services**

**Issue Statement:** What range of recreational opportunities should be provided to meet the wide variety of public demand?

The RMP describes and assigns Recreation Opportunity Spectrum (ROS) classes (Table 2.5, “Recreation Setting Character Matrix for the Eastern Interior Planning Area”). Special Recreation Management Areas are identified to further define specific recreation characteristics and actions for some areas of high recreation use (Appendix H, *Recreation Management Zones*). The RMP provides a wide range of alternatives for recreation management (Chapter 2).

### **1.5.1.10. Rights-of-Way Management**

**Issue Statement:** How will the BLM provide for access and effective transportation planning?

The RMP provides a range of alternatives on how rights-of-way would be managed (Chapter 2). Alternative B designates right-of-way avoidance areas. Some alternatives designate transportation corridors in the White Mountains NRA and Steese National Conservation Area. The RMP addresses access requirements under ANILCA.

### **1.5.1.11. Wilderness Characteristics**

**Issue Statement:** How will the BLM manage wilderness characteristics in the planning area?

As part of this planning process, the BLM conducted an inventory to determine which lands have wilderness characteristics (Appendix F, *Wilderness Characteristics Inventory*). The RMP proposes a range of alternatives for maintaining wilderness characteristics.

## **1.5.2. Issues Considered, But Not Analyzed Further**

During scoping, the BLM received many comments addressing issues outside of the scope of the RMP (e.g., reservation of 17(b) easements, State of Alaska hunting regulations, law enforcement, and predator control). These issues are beyond the scope of the RMP either because they involve decisions the BLM does not have authority to make, or the issues are not a required land use planning decision. These issues are discussed in more detail in the Scoping Report (BLM 2008b).

Regarding predator control, BLM's guiding legislation and policies recognize the primary authority of the States in wildlife management and say that predator control activities by the State of Alaska may take place on BLM lands, as long as they do not conflict with ongoing or anticipated BLM-authorized actions. Appendix C of BLM Land Use Planning Handbook does not list predator control as a required land use planning decision. Because the RMP is not addressing predator control, the ANILCA section 810 evaluation (Appendix J) does not address the effects of predator control on subsistence.

**Issue Statement:** How would access issues involving a Victoria Creek road and/or pipeline be managed?

The BLM received many comments on the proposed Yukon Flats National Wildlife Refuge Land Exchange and a possible right-of-way through Victoria Creek. In April 2010, the USFWS issued a Record of Decision to adopt the "No Land Exchange Alternative" (USFWS 2010b). In January 2012, the BLM held a pre-application meeting with Birch Creek and Stevens Village regarding a possible road right-of-way through Victoria Creek, however, the proponents never submitted an application. Since the land exchange will not occur and no applications for rights-of-way have been submitted, the BLM does not anticipate the construction of a road or pipeline through Victoria Creek and this was not considered as a reasonably foreseeable future action during impact analysis.

## 1.6. Planning Criteria

Planning criteria are standards, rules, and guidelines that help guide data collection, alternative formulation, and alternative selection during the planning process. In conjunction with planning issues, criteria assure that the planning process is focused. The criteria also help guide the final plan selection and provide a basis for judging the responsiveness of the planning options. The following planning criteria were developed by the BLM, reviewed by the public as part of scoping, and revised by the BLM in response to scoping comments.

1. Opportunities for public participation by interested groups and individuals will be encouraged throughout the RMP/EIS process.
2. Valid existing rights will be recognized and protected.
3. Subsistence uses will be considered and adverse impacts minimized in accordance with Section 810 of ANILCA.
4. The BLM will work cooperatively with state and federal agencies, Native corporations, federally recognized tribes, and Municipal governments.
5. Wildlife habitat management will be consistent with Alaska Department of Fish and Game (ADF&G) objectives and the Federal Subsistence Board requirements and mandates.
6. RMPs prepared by the BLM will conform to the BLM H-1601-1 Land Use Planning Handbook, Appendix C, and supplemental program guidance and manuals.
7. The RMP will be consistent with the standards and guidance set forth in the FLPMA, NEPA, National Historic Preservation Act, Wild and Scenic Rivers Act, Migratory Bird Treaty Act, ANILCA, and other relevant federal laws, regulations, and policies as required.
8. The RMP will be consistent with BLM Alaska Land Health Standards.
9. Designations for off-highway vehicles for all public lands within the planning area will be completed according to the regulations found in 43 CFR 8342.
10. Areas of proposed ACEC designation will meet the criteria found in 43 CFR 1610.7-2.
11. The RMP will address all of the lands within the planning area which are managed by the BLM.

12. Review and classification of waterways as eligible for inclusion in the National Wild and Scenic River System will follow the guidance found in BLM's 6400 Manual.
13. The Economic Profile System (EPS) developed for the BLM by the Sonoran Institute, or equivalent, will be used to characterize baseline social and economic conditions.
14. The BLM will incorporate Environmental Justice considerations in land use planning alternatives to respond to issues facing minority populations, low-income communities, and federally recognized tribes living near public lands and using public land resources.
15. The analysis will employ guidance provided in H-1601-1, Appendix D, Social Science Considerations in Land Use Planning Decisions.
16. All BLM lands in the planning area, including selected lands, will be assessed for wilderness characteristics using criteria established by BLM Instruction Memorandum 2011-154.
17. Recommendations to Congress for Wilderness designation will not be considered in this plan.
18. The management intent for high-priority State-selected lands will be as consistent as possible with State management intent.
19. Title XI of ANILCA requires that rights-of-way for Transportation or Utility Systems will be considered throughout the Conservation Systems Units (Birch Creek, Beaver Creek, and Fortymile WSRs), Steese National Conservation Area and White Mountains NRA. Any approval or disapproval of these rights-of-way will be consistent with the provisions of ANILCA. Regardless of other decisions in the RMP, ANILCA would take priority.

## 1.7. Relationship to BLM Policies, Plans, and Programs

The BLM plans and special rules listed below relate to or otherwise govern current management of BLM lands in the planning area.

The Eastern Interior RMP and associated Records of Decision will supersede the following land use plans.

- Fortymile Management Framework Plan (BLM 1980)
- Record of Decision and RMP for the Steese National Conservation Area (BLM 1986a)
- Record of Decision and RMP for the White Mountains NRA (BLM 1986b)

The Eastern Interior RMP and associated RODs will amend the following river management plans.

- Beaver Creek River Management Plan (BLM 1983b)
- Birch Creek River Management Plan (BLM 1983c)
- Fortymile River Management Plan (BLM 1983a)

The Eastern Interior RMP and associated Records of Decision will require development of new rules to modify or supersede these existing supplemental and special rules. These rules will be developed following the process outlined in section 2.5.

- Designation of Off Road Vehicle Use Areas for the Steese National Conservation Area (FR 1988b)
- Designation of Off Road Vehicle Use Areas for the White Mountains NRA and Associated Lands (FR 1988c)
- Designation of Off Road Vehicle Use Areas in the White Mountains National Recreation Area (FR 1998)
- Modification of Designated Off Road Vehicle Use Areas for the White Mountains National Recreation Area and Associated Lands (FR 1992)
- Notice of Special Rules and Regulations for the White Mountains NRA and Associated Facilities (FR 1997)

- Special Rules for the Fortymile Wild and Scenic River.

## 1.8. Collaboration

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 the Proposed RMP/Final EIS. These strategies are described more fully in Chapter 5, Consultation and Coordination. The BLM has sought involvement in the planning process by a variety of stakeholders outside of government and agency groups. The BLM received scoping comments from several individuals and organizations representing a range of interests, including environmental concerns, mineral exploration and development, subsistence harvest, wildlife management, fisheries, and commercial ventures. The BLM kept stakeholders informed of progress on the RMP through a semi-annual newsletter, the Eastern Interior RMP/EIS website, and opportunistically at meetings held by various groups such as the Eastern Interior Subsistence Resource Advisory Council, Fortymile Miners Association, and the Citizens Advisory Committee on Federal Areas.

Initial coordination with the State occurred under an Interagency Agreement. In March 2014 the agencies developed a memorandum of understanding, identifying the State as a cooperating agency. The Alaska Department of Natural Resources (ADNR) acts as a state clearinghouse for the BLM by soliciting and coordinating planning input from 15 state agencies. In addition, the ADNR provides technical and consistency reviews of draft documents.

The BLM initially invited all federally recognized tribes in the planning area to become cooperating agencies when initiating government-to-government consultation early in the planning process. The Gwichyaa Zhee Gwich'in and Chalkyitsik Village Tribal governments followed up to develop memorandums of understanding with the BLM to be cooperating agencies. The BLM continues to consult with other villages within the planning area.

## 1.9. Related Plans

Plans formulated by federal, state, local, and tribal governments that relate to the management of lands and resources were reviewed and considered during development of the Proposed RMP/Final EIS. BLM planning regulations require that BLM plans be consistent with officially adopted and approved resource related plans of other federal, state, local, and tribal governments to the extent that those plans are consistent with federal laws and regulations applicable to public lands (43 CFR 1610.3-1). During the formulation of alternative management scenarios and land use allocations, the RMP considered management of federal and state lands immediately adjacent to BLM-managed public lands and consistent management decisions to the extent possible.

## 1.10. Policy and Legislation

The following policies, regulations, and legislation may influence decisions, constrain alternatives, or affect implementation of the Approved RMP.

The Federal Land Policy and Management Act of 1976 (FLPMA) is the primary authority for the BLM's management of public lands. It provides overarching policy by which public lands will be managed and establishes provisions for land use planning, land acquisition and disposition, administration, rights-of-way, and designated management areas. NEPA requires

the consideration and public disclosure of the environmental impacts of major federal actions that significantly affect the quality of the human environment.

In Alaska, public land management is further directed by ANILCA, ANCSA, and the Alaska Statehood Act, particularly in regard to land and realty issues, as well as access and subsistence.

Under the Alaska Statehood Act, the State of Alaska was allowed to select 104 million acres of federal land. Approximately 24 percent of BLM-managed land in the planning area is State-selected. ANCSA requires the transfer of 44 million acres of public land to Alaska Native corporations. Approximately 12 percent of BLM-managed land in the planning area is Native-selected. Conveyance of State- and Native-selected lands are ongoing. The BLM makes land use decisions on State-selected lands with section 906k concurrence and is required to consult with corporations and consider their comments on Native-selected lands.

Section 17(b) of ANCSA provides for the reservation of easements across village and regional Native corporation lands to provide access to publicly owned lands (including waters) for the purpose of recreation, hunting, transportation, utilities, docks, and other similar uses. The BLM is responsible for identifying and reserving these easements during the conveyance process. Terms of each specific easement identifies allowable uses of the easement by the public. Travel management planning may be constrained by existing or future easements.

Title XI of ANILCA requires that rights-of-way for Transportation or Utility Systems will be considered throughout the wild and scenic rivers, the Steese National Conservation Area and the White Mountains NRA. Any approval or disapproval of these rights-of-way will be consistent with the provisions of ANILCA. Regardless of other decisions in the RMP, ANILCA would take priority. This could result in the need for future amendment of the RMP if the BLM-authorized a right-of-way application meeting the Title XI criteria.

Additionally Section 1323(b) of ANILCA protects access to non-federal land surrounded by federally managed public lands. As with Title XI, approval or disapproval of rights-of-way will be consistent with this provision of ANILCA and subject to reasonable terms and conditions to protect resources.

ANILCA protects access for subsistence (Title VIII); and access for traditional activities, travel to and from villages and homesites and a right of access to inholdings within conservation system units, national conservation areas, and national recreation areas (Title XI). Because of these special access provisions in ANILCA, some alternatives in the RMP include an allowance for the use of motorized vehicles for ANILCA-protected uses by permit in areas that are otherwise closed to off-highway vehicle use. If the ROD results in closures to aircraft, snowmachines, motorboats, or nonmotorized surface transportation, the closure procedures described in 43 CFR 36.11(h) would be followed (see section 2.5 of this document).

The Steese National Conservation Area was established by Congress by ANILCA, which provides for a program of multiple use and sustained yield and for the maintenance of environmental quality within the Conservation Area. Pursuant to ANILCA, special values to be considered in planning and management of the National Conservation Area are Birch Creek and the caribou range.

Specific authorization for the White Mountain NRA also comes from ANILCA. The Act directs that the NRA shall be administered to provide for public outdoor recreational use and for the conservation of scenic, historic, scientific, fish and wildlife, and other values contributing to the public enjoyment of the area, and for other uses if they are compatible with, or do not

significantly impair, the values. Section 1312(b) of ANILCA withdraws the White Mountains NRA from location, entry, and patent under the mining laws. Opening the White Mountains to mineral location and entry is outside of the scope of this RMP.

ANILCA established Beaver Creek, Birch Creek, and the Fortymile River as components of the National Wild and Scenic Rivers System (WSR). The Wild and Scenic Rivers Act (P.L. 90-542) declared it a policy of the United States that "selected rivers... shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations". Specifically, Section 10(a) of the Wild and Scenic Rivers Act states that: Each component of the National Wild and Scenic Rivers System shall be administered in such a manner as to protect and enhance the values which caused it to be included in said system without, insofar as it is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values (16 USC 1281).

Additionally, Section 606(a) of ANILCA amended the Wild and Scenic Rivers Act to withdraw lands within one-half mile of the bank of designated "wild" rivers from mineral location and entry. Opening "wild" segments of designated rivers to mineral location and entry is beyond the scope of this RMP.

The U.S. Department of the Interior's Fish and Wildlife Policy clarifies the Department's relationship with state fish and wildlife management agencies (43 CFR 24). Additionally, the BLM has a Master Memorandum of Understanding with Alaska Department of Fish and Game which recognizes the Department as the primary agency responsible for management of use and conservation of fish and wildlife resources on BLM-managed lands.

Under the Submerged Lands Act of 1953 and the Alaska Statehood Act, the State of Alaska received title to unreserved beds of navigable waters at the time of statehood. Navigable waters are those waters used, or susceptible to use, for travel, trade, and commerce at the time of statehood (1959). Ordinarily, the courts decide disputes over the navigability of waterbodies; however, the BLM may make administrative determinations in order to identify public lands. Until such time a determination is made, the BLM presumes federal ownership of submerged lands.

Under Revised Statute (R.S.) 2477, Congress granted a right-of-way for the construction of highways over unreserved public land. Under Alaska law, the grant could be accepted by either a positive act by the appropriate public authorities or by public use. "Highways" under Alaska law include roads, trails, paths, and other common routes open to the public. Although R.S. 2477 was repealed in 1976, a savings clause preserved any existing R.S. 2477 rights-of-way. The State of Alaska claims numerous rights-of-way across federal land under R.S. 2477, including those identified in AS 19.30.400. The validity of State-identified R.S. 2477 rights-of-way will be determined on a case-by-case basis and outside of this planning process.

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**Chapter 2**

**Alternatives**



## 2.1. How to Read This Chapter

This chapter presents the management alternatives considered and analyzed in this Resource Management Plan/Environmental Impact Statement. Section 2.2 provides a brief summary of the basic “theme” of each alternative and a summary table for the entire planning area. Section 2.3 provides a description of alternatives considered but not analyzed in detail. Section 2.6 provides the detailed description of management common to all planning subunits and action alternatives (Alternatives B – E). Alternative E is the Proposed RMP. Sections 2.7 through 2.10 provide a detailed description of management specific to each planning subunit and management decisions that vary by alternative. Consistent with the rest of the document, these sections are organized by program area. Section 2.11 provides a comparison table of the impacts for each alternative. All acres are approximate and have been rounded to the nearest 1,000 acres. Conveyance of lands to Native corporations and the State of Alaska are ongoing as are corrections to the GIS database. Acres and figures in this document reflect best known land status as of 2015.

## 2.2. General Description of Alternatives

The following sections provide a brief summary of each alternative. The alternatives are summarized in a comparative table format in section 2.2.6.

### 2.2.1. Alternative A - No Action Alternative

Alternative A continues present management practices and present levels of resource use based on the existing Fortymile Management Framework Plan (MFP) (BLM 1980), the Steese RMP (BLM 1986a), the White Mountains RMP (BLM 1986b), the Fortymile River Management Plan (BLM 1983a), the Birch Creek River Management Plan (BLM 1983b), the Beaver Creek River Management Plan (BLM 1983c), and other management decision documents. Other management decision documents include special rules published in the *Federal Register* (for off-highway vehicle and recreational use) and existing public land orders (PLOs), including ANCSA 17(d)(1) withdrawals. Wildland fire is managed consistent with the Alaska Land Use Plan Amendment for Wildland Fire and Fuels Management (BLM 2004b, 2005c), which is incorporated by reference.

Mineral leasing and new mining claims are precluded by public land orders (PLOs) issued under Section 17(d)(1) of ANCSA. Land disposal actions cannot occur due to current segregations for selection and the lack of decisions identifying lands for disposal in the existing land use plans. Six transportation corridors are designated: two in the White Mountains NRA and four in the Steese National Conservation Area. Two existing special recreation management areas (SRMAs), the White Mountains NRA and Steese National Conservation Area will continue under current management with recreation settings of Primitive, Semi-Primitive motorized, Research Natural Area, and Wild and Scenic River. The Fortymile WSR corridor will continue to be managed similar to a SRMA, but is not designated as such and there are no recreation settings prescribed.

Four existing Research Natural Areas (RNAs) and three Special Recreation Management Areas will remain in place. No new special designations, such as Areas of Critical Environmental Concern (ACECs) are considered. There will no suitability determinations made for wild and scenic rivers. There will be no decisions made to manage certain lands to maintain wilderness characteristics, although existing management would preserve these characteristics in many areas. There will be no off-highway vehicle (OHV) designations for the majority of the Fortymile Subunit (outside of the Wild and Scenic River Corridor) or the Upper Black River Subunit.

The current Limited OHV designations will remain in place in the White Mountains NRA and Steese National Conservation Area, including seasonal restrictions on summer motorized use in some areas.

Direction contained in existing laws, regulation, and policy will continue to be implemented, sometimes superseding provisions in the existing land use plans. The current levels, methods, and mix of multiple-use management of public land in the planning area will continue, and resource values will receive attention at present levels. In general, most activities will be analyzed on a case-by-case basis when applications are received. Few uses, other than new mining claims and mineral leasing, are limited or excluded as long as they were consistent with state and federal laws, and existing land use plans.

The existing plans do not identify a set of standard operating procedures or fluid mineral leasing stipulations. These are developed on a case-by-case basis as applications for permits are received.

### **2.2.2. Alternative B**

Alternative B emphasizes protection of resource values such as wildlife, fish, and vegetation. Production of minerals and services are more constrained than in Alternatives A, C, D, and E. In many areas, uses are excluded to protect sensitive resources.

Alternative B recommends approximately 87 percent of the planning area remain closed to mineral leasing and mineral entry, including the Steese National Conservation Area, the White Mountains NRA, the Upper Black River Subunit, the Fortymile ACEC, and the three wild and scenic river corridors. The plan recommends opening the remaining 13 percent to new mining claims and mineral leasing through partial revocation of PLOs. All ACECs are recommended closed to new mineral entry and location, and mineral leasing. Unlike Alternative A, this alternative identifies lands suitable for acquisition, disposal, or retention. Scattered parcels identified in Appendix G are available for disposal. Wild and scenic rivers and areas of critical environmental concern are identified as right-of-way avoidance areas. Four transportation corridors are retained from Alternative A; two in the White Mountains NRA and two in the Steese National Conservation Area.

Special Recreation Area (SRMA) boundaries and management are adjusted from Alternative A. Terminology is updated to match current policy. Three SRMAs are designated: White Mountains, Steese, and Fortymile. Recreation setting prescriptions are assigned to each SRMA. These settings include Primitive, Semi-Primitive, Backcountry, Middlecountry, Frontcountry, and Rural settings as defined in Table 2.5, "Recreation Setting Character Matrix for the Eastern Interior Planning Area". There are more acres assigned to the Primitive, Semi-Primitive, and Backcountry settings under Alternative B than under Alternatives A, C, D, or E. These three settings are similar to the Primitive setting under Alternative A.

The four existing RNAs in the Steese National Conservation Area and White Mountains NRA are maintained with current management. Alternative B designates four new ACECs and identifies specific measures proposed to protect or enhance wildlife values within these areas. The Steese, White Mountains, and Fortymile ACECs protect caribou range and Dall sheep habitat. The Salmon Fork ACEC protects anadromous fish habitat, bald eagle nesting, and rare plant habitats. Five eligible river segments (109 miles) are recommended suitable for designation under the Wild and Scenic Rivers Act (WSR Act). Lands possessing wilderness characteristics are identified and 78 percent these lands are managed to maintain these wilderness characteristics.

OHV area designations are identified in all subunits. In Alternative A, OHV designations do not exist for more than half of the planning area. Some areas are limited to existing or designated trails. Restrictions on summer motorized use are more extensive than under Alternative A.

Standard Operating Procedures outlined in section A.2 of Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations* apply.

### **2.2.3. Alternative C**

Alternative C analyzes a moderate level of protection, use, and enhancement of resources and services. Production of minerals and services is less constrained than in Alternatives A, B, and E, but more constrained than in Alternative D. In some areas, uses are excluded to protect sensitive resources. Constraints to protect resources are less restrictive than under Alternative B, but more so than Alternatives D and E.

Alternative C recommends 34 percent of the planning area remain closed to mineral leasing and 40 percent to mineral entry and location, including the White Mountains NRA, 81 percent of the Steese National Conservation Area, and the three wild and scenic river corridors. Some ACECs are recommended closed to mineral entry and location, and leasing. Partial revocation of PLOs are recommended to open 60 percent of the planning area to mineral location and 66 percent to mineral leasing. Same as Alternative B, lands are identified as suitable for acquisition, disposal or retention. Alternative B retains two transportation corridors in the Steese National Conservation Area. The other transportation corridors from Alternative A are dropped.

Setting prescriptions for SRMAs include fewer acres in Primitive, Semi-Primitive and Backcountry settings and more acres in Middlecountry and Frontcountry prescriptions than in Alternative B. There is a greater emphasis on developed recreational facilities compared to Alternative B.

Similar to Alternative B, existing RNAs are maintained and three SRMAs are identified. The Fortymile SRMA is smaller than in Alternative B, limited to the WSR Corridor, Eagle area, and Davis Dome. Only three ACECs are designated and they are smaller and/or subject to fewer restrictions than in Alternative B. The White Mountains ACEC is not designated under this alternative, although management similar to that prescribed in other ACECs would apply to caribou and Dall sheep habitat in the White Mountains. The Salmon Fork ACEC protects anadromous fish habitat, bald eagle nesting, and rare plant habitats. The Steese and Fortymile ACECs protect caribou range both inside and outside of the Steese National Conservation Area.

No rivers are recommended as suitable for designation under the WSR Act. Fewer acres (32 percent) are managed to maintain wilderness characteristics. Although, wilderness characteristics will likely remain on a much larger acreage.

As is in Alternative B, OHV designations are put in place in all planning subunits. Some areas are limited to existing or designated trails. Summer motorized use is precluded in some areas. Restrictions on summer motorized use are more extensive than under Alternatives A or D, but less than under Alternative B.

Standard Operating Procedures outlined in section A.2 Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations* apply.

## 2.2.4. Alternative D

Alternative D emphasizes management to facilitate resource development. Production of minerals and services are less constrained than in Alternatives B, C and E. In some areas uses are excluded to protect sensitive resources. Constraints to protect resources will be implemented, but are less restrictive than under Alternatives C and E.

Alternative D recommends 20 percent of the planning area remain closed to mineral leasing (oil, gas, and other leasable minerals) and 27 percent to mineral entry and location (mining claims). Partial revocation of PLOs are recommended to open 80 percent to mineral leasing and 73 percent of the planning area to mineral location. The White Mountains NRA, the Birch Creek and Beaver Creek WSR corridors, the “wild” and “recreational” segments of the Fortymile WSR, and 46 percent of the Steese National Conservation Area remain closed to new mining claims. Approximately 451,000 acres in the White Mountains are recommended open for leasing of hard rock minerals including gold and rare earth elements (Section 2.10.2.4). The “scenic” segments of the Fortymile WSR Corridor are recommended opened to mineral entry. The Steese ACEC will remain closed to mineral entry and location. The other ACECs are recommended open to new mining claims. As in Alternative B, scattered parcels are available for disposal. None of the existing transportation corridors are retained and no new transportation corridors are designated.

Setting prescriptions for SRMAs would include fewer acres in Semi-Primitive and Backcountry settings and more acres in Middlecountry and Frontcountry prescriptions than in Alternatives B, C, and E. There is a greater emphasis on developed recreational facilities than under Alternatives A, B, C, and E.

Similar to Alternatives B and C, existing RNAs are maintained and three SRMAs are designated. Similar to Alternative C, three ACECs are designated. These are generally smaller or are subject to fewer restrictions than in alternatives B, C, and E. The Steese and Fortymile ACECs protect current caribou range in the Steese National Conservation Area and Fortymile Subunit. The Salmon Fork ACEC protects anadromous fish habitat, bald eagle nesting, and rare plant habitats.

No rivers are recommended as suitable for designation under the WSR Act. Only 11 percent of the acres possessing wilderness characteristics are managed to maintain these characteristics. Wilderness characteristics will likely remain on a much larger acreage.

OHV designations are put into place in all planning subunits. Generally, travel and trail restrictions are less than Alternatives B and C, but more than Alternative A. Some areas or uses are limited to existing trails. Some areas are limited to no summer motorized use.

Standard Operating Procedures outlined in sections A.2 and A.3 of Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations* would apply.

## 2.2.5. Alternative E (Proposed RMP)

Alternative E represents the mix and variety of actions that the BLM believes best resolves the issues and management concerns in consideration of all values and programs, and is the BLM's Proposed RMP and Preferred Alternative. Alternative E a minor variation of the alternatives analyzed in the Draft RMP/EIS and is qualitatively within the spectrum of alternatives analyzed in the Draft. Production of minerals and services are slightly less constrained than in Alternative B.

Alternative E recommends 74 percent of the planning area remain closed to both mineral leasing and mineral location (staking of mining claims). Partial revocation of PLOs are recommended to open 26 percent of the planning area to mineral location and mineral leasing. The White Mountains NRA remains closed to new mining claims, mineral leasing, and leasing of hardrock minerals. The Steese National Conservation Area and Birch Creek, Beaver Creek, and Fortymile WSR corridors remain closed to both mineral entry and mineral leasing. All ACECs, riparian conservation areas, restoration watersheds, and the Black River watershed are recommended closed to mineral entry and mineral leasing to protect fish and aquatic resources, subsistence resources and other values raised in government-to-government consultation. As in Alternatives B, C, and D scattered parcels of unmanageable lands are available for disposal. None of the existing transportation corridors designated under Alternative A are retained and no new corridors are designated.

Three SRMAs are designated: the Fortymile, Steese, and White Mountains SRMAs. Recreation setting prescriptions in the Fortymile and White Mountains SRMAs are the same as Alternative C. In the Steese, some areas identified as Middlecountry in Alternative C change to Backcountry and Semi-Primitive.

The four existing RNAs are maintained. Management within RNAs would be the same as Alternative C, except the OHV area designation changes from Closed to Limited allowing for winter use of snowmobiles.

Three ACECs are designated. The Fortymile ACEC is smaller and Salmon Fork ACEC is slightly larger than in Alternative C. About 37,000 acres in Mosquito Flats is designated as an ACEC. Additionally crucial caribou and Dall sheep habitat is identified in the White Mountains, Steese, and Fortymile subunits (Maps 67 and 103). Management of these crucial habitat areas and the Fortymile ACEC protect Fortymile Herd caribou range and Dall sheep habitat. The Salmon Fork ACEC protects anadromous fish habitat, bald eagle nesting, and rare plant habitats. The Mosquito Flats ACEC protects wetlands and moose calving habitat. No rivers are recommended suitable for designation under the WSR Act.

Approximately 53 percent of the planning area is managed to minimize impacts to wilderness characteristics while emphasizing other multiple uses and resources. These areas include crucial caribou and Dall sheep habitat, ACECs, RNAs, riparian conservation areas, and Primitive, Semi-Primitive, and some Backcountry recreation management zones. Management proposed to maintain ACEC and RCA values will also indirectly preserve wilderness characteristics of naturalness, opportunities for solitude and opportunities for primitive and unconfined recreation.

A Limited OHV area designation is put into place in all planning subunits. More detailed travel decisions for the Fortymile, Steese, and White Mountain subunits are deferred to travel management plans to be completed within five years of the record of decision. The Travel Management Plan for the Upper Black River Subunit is defined in this RMP. These decisions are implementation decisions subject to appeal. Interim travel management for areas deferred are the same as Alternative A with minor changes affecting the RNAs, and White Mountains, Steese, and Fortymile subunits. These changes include allowing snowmobile use in RNAs and removing prohibitions on the use of hovercraft and airboats.

Standard Operating Procedures for the Proposed RMP outlined in section A.4 of Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations* apply.

## 2.2.6. Summary of Alternatives Table

The table below provides a summary comparison of all alternatives based on the entire planning area. Similar tables are provided for each subunit in sections 2.7.3, 2.8.3, 2.9.3, and 2.10.3. Actions that are applicable to all alternatives are shown in one cell across a row. These actions would be implemented regardless of which alternative is ultimately selected. Actions that are applicable to more than one, but not all alternatives are indicated by either combining cells or by denoting as “same as Alternative B” for example.

**Table 2.1. Summary of Alternatives – All Subunits Combined**

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Fish and Aquatic Species</b>	Riparian Conservation Areas (RCAs) not addressed.	Manage 73 watersheds as RCAs.	Manage 45 watersheds as RCAs.	Manage 24 watersheds as RCAs.	Same as Alternative B.
	High priority restoration watersheds not addressed.	Manage 5 watersheds as high priority for restoration.			Manage 7 watersheds as high priority for restoration.
<b>Visual Resources</b>	Assign all BLM-managed lands to VRM Classes. Manage according to the VRM class objectives described in section 2.6.2.9				
	VRM Class I: 138,000 acres	VRM Class I: 346,000 acres	VRM Class I: 343,000 acres	VRM Class I: 317,000 acres	VRM Class I: 343,000 acres
	VRM Class II: 583,000 acres	VRM Class II: 4,951,000 acres	VRM Class II: 1,876,000 acres	VRM Class II: 546,000 acres	VRM Class II: 3,383,000 acres
	VRM Class III: 1,494,000 acres	VRM Class III: 371,000 acres	VRM Class III: 267,000 acres Class	VRM Class III: 421,000 acres	VRM Class III: 11,000 acres
	VRM Class IV: 0 acres	VRM Class IV: 855,000 acres	VRM Class IV: 4,037,000 acres	VRM Class IV: 5,239,000 acres	VRM Class IV: 2,787,000 acres
	VRM classes not assigned: 4,308,000 acres	VRM classes not assigned: 0 acres			
<b>Wilderness Characteristics</b>	<b>Areas managed to protect wilderness characteristics as a priority over other resource values and multiple uses</b>				
	Wilderness characteristics not addressed.	None	None	None	None
	<b>Acres and Areas managed to emphasize other resource values and multiple uses while applying management restrictions to reduce impacts to wilderness characteristics</b>				
	Wilderness characteristics not addressed.	5,017,000 acres (76%)	2,076,000 acres (31%)	741,000 acres (11%)	3,456,000 acres (53%)
	<b>Acres managed to emphasize other resource values and multiple uses as a priority over protecting wilderness characteristics</b>				
Wilderness characteristics not addressed.	1,506,000 acres (23%)	4,447,000 acres (68%)	5,782,000 acres (88%)	3,068,000 acres (47%)	
<b>Wildlife</b>	No limits on types of pack animals for either casual or permitted use.	The use of domestic goats, alpacas, llamas, and other similar species would not be allowed in conjunction with BLM-authorized activities in Dall sheep habitat.			Same as Alternative B
		Domestic sheep, goats, and camelids (including alpaca and llama) are not allowed in Dall sheep habitat.	No prohibitions on casual use of Domestic sheep, goats, and camelids (including alpaca and llama).		

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Forest and Woodland Products</b>	Personal use of timber: allowed on 6,523,000 acres	Personal use of timber: allowed on 4,027,000 acres	Personal use of timber: allowed on 6,219,000 acres	Personal use of timber: allowed on 6,522,000 acres	Personal use of timber: allowed on 6,523,000 acres
	No commercial timber harvest is allowed on 2,213,000 acres within the Steese National Conservation Area and White Mountains NRA. Use considered elsewhere.	Commercial timber salvage sales: considered on 4,027,000 acres.	Commercial timber salvage sales: considered on all BLM-managed lands (6,523,000 acres)		
		Commercial timber sales: considered on 1,667,000 acres	Commercial timber sales: considered on 5,499,000 acres	Commercial timber sales: considered on 6,120,000 acres	Commercial timber sales: considered on 4,556,000 acres
	Forest products are reserved for local use on 2,213,000 acres within the Steese National Conservation Area and White Mountains NRA. Use allowed elsewhere.	Allow harvest of forest products for personal use on all BLM-managed lands in the planning area, 6,523,000 acres			
Commercial use of forest products not allowed on 2,213,000 acres in the Steese National Conservation Area and White Mountains NRA. Use allowed elsewhere.	Commercial use of forest products: allowed on 4,027,000 acres	Commercial use of forest products: allowed on 6,357,000 acres	Commercial use of forest products: allowed on 6,502,000 acres	Commercial use of forest products: allowed on 6,523,000 acres, all BLM-managed lands in the planning area.	
<b>Land Tenure</b>	Consider land exchange to acquire approximately 15,000 acres of State lands within the Steese National Conservation Area. Consider acquisition of private inholdings in the White Mountains NRA, Steese National Conservation Area, and the Fortymile, Birch Creek, and Beaver Creek WSR corridors on a willing seller basis.				
	No lands identified for disposal or exchange	Make Zone 3 lands (approximately 45,000 acres of scattered, unmanageable parcels) available for disposal (Appendix G). Validly selected lands would not be considered for disposal unless the selection is relinquished. If federal mining claims outside of the White Mountains NRA, Steese National Conservation Area, and Fortymile WSR become null and void, and are not conveyed to the State, consider these lands for disposal or exchange.			

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Land Use Authorizations</b>	Designated transportation corridors: Four in the Steese National Conservation Area and two in the White Mountains NRA (Map 19).	Retain two transportation corridors in the Steese National Conservation Area and one in the White Mountains NRA (Maps 49 and 53).	Retain two transportation corridors in the Steese National Conservation Area (Map 50).	None of the existing transportation corridors would be retained and no new corridors would be designated.	
	No ROW avoidance areas are identified.	ROW avoidance areas: Steese ACEC, RNAs and Birch Creek WSR; White Mountains ACEC and Beaver Creek WSR; Fortymile ACEC and Fortymile WSR; and Salmon Fork ACEC (3,058,000 acres)	There would be no ROW avoidance areas.		
<b>Fluid Leasable Minerals</b> (e.g., oil and gas)	Closed to mineral leasing by public land orders: Upper Black, Fortymile, Steese, and White Mountains subunits. (6,523,000 acres)	31,000 acres open with no surface occupancy; 803,000 acres open with standard stipulations; 5,689,000 acres closed.	462,000 acres open with minor constraints; 2,804,000 acres open with standard stipulations; 3,257,000 acres closed.	2,113,000 acres open with minor constraints; 3,091,000 acres open with standard stipulations; 1,319,000 acres closed.	201,000 acres open with minor constraints; 1,513,000 acres open with standard stipulations; 4,811,000 acres closed.
<b>Solid Leasable Minerals</b>	Closed to mineral leasing by public land orders: Upper Black, Fortymile, Steese, and White Mountains subunits. (6,523,000 acres)	31,000 acres open with no surface occupancy; 803,000 acres open with standard stipulations; 5,689,000 acres closed.	462,000 acres open with minor constraints; 2,804,000 acres open with standard stipulations; 3,257,000 acres closed.	2,113,000 acres open with minor constraints; 3,091,000 acres open with standard stipulations; 1,319,000 acres closed.	201,000 acres open with minor constraints; 1,513,000 acres open with standard stipulations; 4,811,000 acres closed.
		Coal leasing is deferred because the coal screening process (43 CFR 3420.1-4) has not been completed. A RMP amendment would be needed before coal leasing could occur.			
<b>Locatable Minerals</b> (e.g., gold)	6,523,000 acres withdrawn from mineral entry and location by of public land orders or legislation.	Recommend 834,000 acres open <sup>a</sup> ; 5,689,000 acres closed.	Recommend 3,887,000 acres open <sup>a</sup> ; 2,636,000 acres closed.	Recommend 4,755,000 acres open <sup>a</sup> ; 1,768,000 acres closed.	Recommend 1,713,000 acres open <sup>a</sup> ; 4,811,000 acres closed.
<b>Salable Minerals</b> (e.g., gravel)	6,523,000 acres open to disposal of sand, gravel, rock, and other saleable minerals.	3,772,000 acres open; 2,751,000 acres closed.	6,134,000 acres open; 389,000 acres closed.	6,378,000 acres open; 145,000 acres closed.	6,134,000 acres open; 389,000 acres closed.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Recreation</b>	Existing plans do not designate SRMAs, but the Steese National Conservation Area, White Mountains NRA, and Fortymile WSR are managed as such.	Designate 3,045,000 acres in Fortymile, Steese, and White Mountains areas as SRMAs. Establish desired recreation setting character classes.	Designate 2,495,000 acres in Fortymile, Steese, and White Mountains areas as SRMAs. Establish desired recreation setting character classes. In these alternatives, the Fortymile SRMA is limited to the WSR corridor.		
<b>Travel Management</b>	OHV area designations: 16,000 acres Closed; 2,213,000 acres Limited; 4,294,000 acres undesignated	OHV area designations: 16,000 acres Closed; 6,507,000 acres Limited; 0 acres undesignated.	OHV area designations: 6,523,000 acres Limited; 0 acres Closed; 0 acres undesignated.		
<b>Withdrawals</b>	Steese National Conservation Area and White Mountains NRA withdrawn from mining and mineral leasing by ANILCA and additional public land orders under ANCSA. Provisions in ANILCA allow Secretary of the Interior to modify the withdrawal to allow for mining.	Retain the ANILCA withdrawal on 100% of the Steese National Conservation Area. Recommend revoking ANCSA withdrawals. National Conservation Area would remain closed to mining by ANILCA.	Retain the ANILCA withdrawal on 80% of the Steese National Conservation Area; recommend revoking ANCSA withdrawals and issuing an opening order for 241,000 acres (20% of the National Conservation Area).	Retain the ANILCA withdrawal on 46% of the Steese National Conservation Area; recommend revoking ANCSA withdrawals and issuing an opening order for 646,000 acres (54% of the National Conservation Area).	Same as Alternative B.
		Retain the ANILCA withdrawal on 100% White Mountains NRA.	Same as Alternative B.	Recommend modifying ANILCA and ANCSA withdrawal on 160,000 acres in the White Mountains to allow for leasing of hardrock minerals.	Same as Alternative B.
	Modification of ANCSA withdrawals not addressed	Recommend partial revocation of ANCSA withdrawals to open 849,000 acres to mining; recommend retaining ANCSA withdrawals for 3.3 million acres until a new FLPMA withdrawal is approved.	Recommend partial revocation of ANCSA withdrawals to open 1,308,000 acres to mining; recommend retaining ANCSA withdrawals for 541,000 acres until a new FLPMA withdrawal is approved.	Recommend partial revocation of ANCSA withdrawals to open 1.8 million acres to mining; recommend retaining ANCSA withdrawals for 82,000 acres until a new FLPMA withdrawal is approved.	Recommend partial revocation of ANCSA withdrawals to open 1.7 million acres to mining; recommend retaining ANCSA withdrawals for 2.5 million acres until a new FLPMA withdrawal is approved.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Withdrawals</b>	Modification of public land orders not addressed.	Modify public land orders as needed to allow for disposal of parcels identified in Appendix G and to implement recommended mining decisions (above).			
	Retain all recreation site withdrawals in the Fortymile and White Mountains subunits.			Modify recreation site withdrawals to allow conveyance of Eagle and Perhaps Creek to the State.	Modify recreation site withdrawals to allow conveyance of Perhaps Creek to the State.
<b>Areas of Critical Environmental Concern</b>	No ACECs are designated.	Designate the Fortymile ACEC, Salmon Fork ACEC, Steese ACEC, and White Mountains ACEC (2,811,000 acres)	Designate the Fortymile ACEC, Salmon Fork ACEC, and Steese ACEC (1,632,000 acres)	Designate the Fortymile ACEC, Salmon Fork ACEC, and Steese ACEC (1,368,000 acres)	Designate the Fortymile ACEC, Mosquito Flats ACEC, and Salmon Fork ACEC (1,022,000 acres)
<b>Research Natural Areas</b>	16,100 acres are designated as Research Natural Areas (RNAs) in the Steese National Conservation Area and White Mountains NRA: Big Windy Hot Springs, Mount Prindle, Limestone Jags, and Serpentine Slide.				
	RNAs are closed to all OHV use including snowmobiles.	RNAs are closed to all OHV use including snowmobiles, except by federally qualified subsistence users.			Snowmobile use would be allowed in RNAs.
<b>Wild and Scenic Rivers</b>	Outstandingly Remarkable Values (ORVs) are not identified.	ORVs for Birch Creek WSR are scenic, recreation, and fisheries. ORVs for Beaver Creek WSR are scenic, recreation, geologic, fisheries, and wildlife. ORVs for Fortymile WSR are scenic, recreation, geologic, historic, and wildlife. Specific ORVs by river segment are listed in Appendix E.			
	Other rivers in planning area have not been studied for eligibility or suitability.	35 rivers studied for eligibility and suitability. Five rivers found to be eligible. Rivers found suitable for designation (109 miles): Gold Run, Dome Creek, Big Windy Creek, Fossil Creek, and Salmon Fork Black River.			
			No rivers found suitable for designation.		

<sup>a</sup>RMP recommends open or closed. To implement this recommendation requires action by the Secretary of the Interior

## **2.3. Alternatives Considered but Not Analyzed in Detail**

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

### **2.3.1. Livestock Grazing**

The Fortymile MFP (BLM 1982) allowed for the authorization of livestock grazing permits. However, there are currently no permitted livestock operations within the planning area and there have been no applications for grazing permits since 1978. The grazing regulations for Alaska (43 CFR 4200) were removed in 1998 due to the lack of demand for permits and the lack of land suitable for grazing (FR 1998).

The BLM does not anticipate any applications for livestock grazing in the future, unless it is grazing associated with Special Recreation Permits, such as hunting guides using horses. Grazing associated with recreation is permitted through the Recreation Program. There are no identified areas with high grazing potential in the planning area. Livestock grazing on remote BLM lands is not practical due to potential conflicts with wildlife (disease and competition), potential introduction of wood bison, lack of suitable grazing lands, the potential for predation on livestock by bears and wolves, and the lack of access for livestock operators. Areas close to communities where grazing would be more practical are state or private lands.

In summary, BLM lands are generally not suitable for grazing, there is no demand for permits, and there are potential conflicts with wildlife. Thus a grazing alternative was not analyzed in detail and grazing is discussed no further in this RMP.

### **2.3.2. Recommending Wilderness Designation by Congress**

The BLM has determined not to analyze in detail an alternative that would recommend Wilderness designation within the planning area because it is beyond the scope of this planning effort. The BLM has conducted an inventory of the planning area to document lands with wilderness characteristics and has considered in this plan a full range of reasonable alternatives addressing how BLM will manage certain lands with wilderness characteristics for naturalness, solitude, and outstanding opportunities for primitive and unconfined recreation, where practical.

## **2.4. Alternative Considered in Supplemental EIS**

When preparing the Draft RMP/EIS, the BLM understood the provisions under the Alaska National Interest Lands Conservation Act (ANILCA) for hardrock leasing (authorizing removal of locatable minerals under a lease instead of a mining claim) in the White Mountains NRA (implemented by 43 CFR 3585) to apply only to removal of hardrock minerals from mining claims that existed before November 16, 1978. Since there are no longer any mining claims of record within the NRA, it was thought that no one could meet the requirements to lease hardrock minerals. This interpretation was incorrect, as the BLM, through its regulations at 43 CFR part 3580, has interpreted Section 1312 of ANILCA as allowing for disposal of hardrock minerals by lease in the White Mountain NRA even in the absence of an underlying unperfected mining claim, subject to certain findings by the Secretary.

To analyze an adequate range of alternatives and obtain public comment on hardrock mineral leasing in the White Mountains NRA, the BLM issued a Supplemental EIS considering the leasing of hardrock minerals in the White Mountains NRA on January 11, 2013. This Supplement amended Alternative D of the Draft RMP/EIS to include a hardrock mineral leasing scenario. This alternative recommended making approximately 160,000 acres in the White Mountains NRA available for hardrock mineral leasing. The Supplement described the additions to Alternative D and environmental effects associated with the hardrock mineral leasing scenario.

In the Supplement and this Proposed RMP/Final EIS, a hardrock mineral leasing program refers to issuing exploration licenses and mineral leases for the exploration and development of known deposits of placer gold and rare earth elements. Both gold and rare earth elements are locatable minerals normally only available through mining claims. As discussed above, however, ANILCA allows for leasing of these types of minerals in the White Mountains, but not for the location of new mining claims. Mineral leasing is done through a lease sale at the discretion of the BLM. Leases are for a defined term, a royalty is charged, and the lease may contain leasing stipulations at the time of the lease sale.

Pursuant to Section 810 of ANILCA, the BLM evaluated the effects of the revised Alternative D presented in the Supplement on subsistence activities and determined that there may be a significant restriction on subsistence uses. These findings were presented in Appendix B of the Supplement and are incorporated into the Section 810 analysis in Appendix J of this Proposed RMP/Final EIS.

The Supplement is included in this Proposed RMP/Final EIS as Appendix M. Additionally, decisions from the Supplement are incorporated into Chapter 2, White Mountains Alternative D of this document, including in the Summary of Alternatives and Summary of Impacts tables (Tables 2.1 and 2.25). Standard operating procedures specific to the supplement are incorporated in to Appendix A, section A.3.

## **2.5. ANILCA Access – Implementing Sections 811 and 1110(a) of ANILCA**

This section applies to all subunits and alternatives.

ANILCA provides specific guidance on access for:

- the use of snowmobiles, motorboats and other means of surface transportation traditionally used for subsistence purposes by local residents on all federal public lands (Section 811). See ANILCA Section 102 (3) for the definition of “public lands”; and
- the use of snowmachines, 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 those 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 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<sup>1</sup> (e.g. Wild and Scenic River, 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 snowmachines, motorboats, aircraft, and non-motorized surface transportation methods (e.g. domestic dogs, horses, and other pack or saddle animals, etc.) for traditional activities only if the Authorized Officer makes a finding, pursuant to 43 CFR 36.11(h), that such use would be detrimental to the resource values of the area.

To meet the requirements of ANILCA, decisions in this 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 *Federal Register* 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 *Federal Register*.
- 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.

If the decision in the ROD is to develop a step-down transportation and travel management plan, 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. This rule process will be completed after the decision record on the transportation and travel management plan.

<sup>1</sup>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).

## 2.6. Management Common to All Subunits and All Action Alternatives

The following sections describe management common to all planning subunits and all action alternatives (B – E), broken down by program area. The Standard Operating Procedures and Fluid Mineral Leasing Stipulations in Appendix A apply to all action alternatives and all subunits.

### 2.6.1. Mitigation

The BLM will apply mitigation measures to BLM-authorized activities within the Eastern Interior Planning Area in order 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 by Presidential Memorandum: Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment (November 3, 2015) and Department of the Interior Manual 600 DM 6 (October 23, 2015). The BLM is currently developing a mitigation manual and handbook.

The sequence of mitigation action will be the mitigation hierarchy identified by the White House Council on Environmental Quality (CEQ) (40 CFR 1508.20). This hierarchy prioritizes mitigating impacts at the time and location of the implementation level activities (e.g. land-use authorizations) which must be in conformance with the land use plan goals and objectives. Mitigation would be achieved through impact avoidance, minimization, rectification, and reduction over time of the impact, including those measures described in laws, regulations, policies, and the Eastern Interior RMP. When these types of mitigation measures are not sufficient to meet the RMP goals and objectives, additional measures to compensate for residual impacts may be required.

The mitigation approach will incorporate the following general principles:

1. **Avoid, minimize, rectify, reduce or eliminate the impact over time, and compensate.** The sequence of mitigation action will be the mitigation hierarchy (avoid, minimize, rectify, reduce or eliminate over time, compensate), as identified by the White House Council on Environmental Quality (CEQ) (40 CFR 1508.20). Compensatory mitigation requirements may apply to implementation level activities whose impacts the agency cannot adequately avoid, minimize, rectify, reduce or eliminate over time (i.e. residual impacts) in order to meet land use plan goals.
2. **Regional Mitigation Approach.** A regional approach to mitigation would include preparing a prioritized assessment of degraded areas in need of restoration and areas important for preservation across the relevant landscape. This prioritized list would provide the basis for mitigation required for implementation level activities and focuses on attaining the maximum mitigation benefit on a landscape basis.
3. **Monitor mitigation projects and measures and make adaptive changes.** The BLM land use authorization decision documents that require compensatory mitigation as a condition of the permit approval should identify project level monitoring and adaptive management requirements. This will ensure the mitigation and adaptive management requirements are implemented as designed, remain effective during the life of the project's impact, and management is adjusted as necessary based on lessons learned and/or new science.

4. **Use the best available science.** The best available scientific principles, standards and practices for mitigation shall be used when determining implementation level mitigation requirements.
5. **Be consistent and fair.** The mitigation program should apply consistently across activities that result in direct, indirect, or cumulative impacts within the planning area.
6. **Durability.** The BLM should ensure that mitigation conducted outside the area of impact, will at a minimum, be effective for as long as the land-use authorization affects the resources and values.
7. **Additionality.** A compensatory mitigation measure that improves the baseline conditions of the impacted resource, and is demonstrably new and would not have occurred without the compensatory mitigation measure.

## 2.6.2. Resources

### 2.6.2.1. Air and Atmospheric Values

The BLM's role in air resource management includes ensuring that BLM activities, programs, and projects comply with applicable air quality standards and that BLM-authorized activities comply with conditions and stipulations in leases and permits. This work is accomplished through interagency coordination, participation in state implementation plan development and processes, collecting and acquiring data, modeling air quality impacts, monitoring changes in air resource conditions, performing environmental impact analyses as required by NEPA, and implementing adaptive management practices as outlined in BLM Handbook H-1601-1. The State agencies typically issue air quality permits or otherwise implement and enforce the regulations in the Clean Air Act, unless the EPA does so directly. Air quality is determined by atmospheric emissions and pollutants, and includes noise, smoke management, and visibility.

#### GOALS:

All direct or authorized emission-generating activities, such as placer mining or BLM facilities development, occurring on BLM-managed lands within the planning area will comply with federal and State air quality laws and regulations.

Protect and maintain air quality of BLM-administered lands consistent with federal and State attainment, nonattainment, or maintenance classification status for atmospheric emissions and pollutants, including noise, smoke management, and visibility.

Coordinate, cooperate, and consult with federal, Tribal, State, and local regulatory agencies, and with other appropriate land management agencies, to resolve air resource issues that may impact BLM-administered lands.

Collaborate with other federal, State and local regulatory agencies, Tribal governments, user groups, and BLM offices to support a coordinated Air Resource Management Program consistent with a science-based adaptive management approach to air resource management.

#### DECISIONS:

Implement interagency wildland fire smoke effects mitigation measures adopted by the Alaska Wildland Fire Coordinating Group. Consider smoke effects on human health, communities, recreation, and tourism in all wildland and prescribed fire management activities.

Ensure BLM activities, programs, and projects comply with all applicable federal, State, Tribal, and local air quality laws, statutes, regulations, standards, and state implementation plans, including applicable general and transportation conformity regulations within EPA designated nonattainment or maintenance areas, consistent with the Clean Air Act and FLPMA.

Inventory, model, analyze, and monitor air resources on an annual, biannual, or quarterly schedule, or as directed by resource managers, to evaluate conditions and trends and their potential impacts on and from BLM-authorized activities, consistent with science-based adaptive management.

Where BLM activities, programs, and projects or BLM-authorized activities have the potential to impact visibility, BLM will evaluate the extent of the potential impact and consider mitigation. Areas where BLM may analyze potential visibility impacts include mandatory Federal Prevention of Significant Deterioration Class I and adjacent areas, wildland/urban interface areas, National Landscape Conservation System units, and in or near areas that contain special natural resources.

When BLM programs, projects, and/or use authorizations have the potential to affect existing resources that may be sensitive to noise such as public health and safety, wildlife, heritage resources, wilderness, wildland/urban interface areas, and other special value areas (such as Areas of Critical Environmental Concern and National Landscape Conservation Areas), BLM will consider noise and its potential impacts on the public and the environment, as well as any appropriate mitigation measures, during the planning and authorization review process.

Where applicable, BLM will utilize guidance in the June 23, 2011 MOU *Air Quality Analyses and Mitigation for Federal Oil and Gas Decisions through the National Environmental Policy Act Process*, among the USDA, DOI, and the EPA and will incorporate updates or revisions as available.

Ensure BLM activities, programs, and projects utilize CEQ issued guidance (December 2014), providing direction for federal agencies on when and how to consider the effects of GHG emissions and climate change in their evaluation of all proposed federal actions in accordance with the National Environmental Policy Act (NEPA) and the CEQ regulations implementing the procedural provisions of NEPA (CEQ Regulations 42 U.S.C. § 4321 et seq.; 40 CFR Parts 1500-1508). Updates or revisions to the CEQ guidance will be incorporated as available.

### **2.6.2.2. Cultural Resources**

#### **GOALS:**

Identify, preserve and protect significant cultural resources by a variety of means; including site avoidance or conservation, site stabilization, monitoring, public awareness programs, and/or data recovery to ensure that these resources are available for appropriate uses by present and future generations.

Identify and manage cultural resources for a variety of present and future uses, including scientific use, conservation for future use, public use, traditional use, and experimental use, or else discharge from further management.

Seek to reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflict with other resources by ensuring that all authorizations for land and resource use comply with “Section 106” National Historic Preservation Act (NHPA) [54 USC 306108].

#### DECISIONS:

Provide permits for archaeological investigation (following 43 CFR 7), along with any other authorizations for individuals or institutions conducting archaeological investigations on public lands, and ensure that artifacts remain in federal custody.

Avoid impacts to cultural resources by project redesign, project abandonment, and/or mitigation of adverse impacts through scientific recovery and analysis. When impacts to cultural resources cannot be avoided, complete a Determination of Eligibility to the State Historic Preservation Office to determine a site’s significance and eligibility to the National Register of Historic Places, and follow prescribed NHPA "Section 106" [54 USC 306108] consultation for all sites determined eligible. If a site is determined eligible, develop a memorandum of agreement (MOA) to mitigate the action.

Prioritization of NHPA "Section 110" field surveys and inventories [54 USC 306102(b)(1)] would be based on (1) a reasonable combination of expected development activities on the public land, as well as (2) “values” related to the resource itself, such as rareness, uniqueness, density on the landscape, and other characteristics inherent in the resource itself.

Prioritization of cultural sites for rehabilitation, stabilization, and restoration would be based upon the “value” of the resource (i.e., NRHP eligible; uniqueness; rarity), along with other recreational or public uses, and other BLM land or resource use considerations.

Systematically monitor threatened sites on an established schedule, and monitor other sites as opportunities or funds become available.

Allow for both destructive and non-destructive cultural resource data recovery by qualified BLM personnel for both "Section 106" mitigative projects as well as non-"Section 106", research oriented projects, where “destructive” refers to archaeological excavation and extensive sub-surface testing and non-destructive refers to mapping, photography, and other means of non-disturbance site recordation.

Maintain an inventory of archaeological sites and localities for the planning area. The locations of these sites and localities are protected by federal law from disclosure to the public, certain exceptions aside, so as to better protect them.

### **2.6.2.3. Fish and Aquatic Species**

#### GOALS:

The following goals are consistent with the National Fish Habitat Action Plan (NFHAP 2006) and BLM Instruction Memorandum 2009-141:

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.

Manage 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 intact 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.

Manage habitat to support populations of well-distributed native plant, vertebrate, and invertebrate populations that contribute to the viability of riparian-dependent communities.

## DECISIONS:

### Priority Species

Where priority species are present, manage and monitor habitats to promote self-sustaining populations. Priority aquatic species are those species utilized for subsistence, designated as BLM sensitive, federally listed under the Endangered Species Act, and/or recreationally important species. Table 2.2, "Priority Fish Species in the Eastern Interior Planning Area" lists the current priority aquatic species that occur with the planning area. These species all occur in the White Mountains, Steese, and Upper Black River subunits. The Fortymile Subunit is not known to support anadromous fish.

Cooperate and coordinate with state agencies, federal agencies, Native organizations, and other groups to ensure efficient and effective program implementation toward conservation of native and desired, non-native aquatic species.

**Table 2.2. Priority Fish Species in the Eastern Interior Planning Area**

Common Name	Scientific Name	Priority Status
Chinook salmon (King) <sup>A</sup>	<i>Oncorhynchus tshawytscha</i>	Subsistence, recreation
Chum salmon <sup>A</sup>	<i>Oncorhynchus keta</i>	Subsistence, recreation
Coho salmon <sup>A</sup>	<i>Oncorhynchus kisutch</i>	Subsistence, recreation
Arctic grayling	<i>Thymallus arcticus</i>	Subsistence, recreation
Broad whitefish <sup>AR</sup>	<i>Coregonus nasus</i>	Subsistence
Humpback whitefish <sup>AR</sup>	<i>Coregonus pidschian</i>	Subsistence
Round whitefish <sup>AR</sup>	<i>Prosopium cylindraceum</i>	Subsistence
Whitefish (unidentified) <sup>AR</sup>	<i>Coregoninae</i>	Subsistence
Least cisco <sup>AR</sup>	<i>Coregonus sardinella</i>	Subsistence
Sheefish <sup>AR</sup>	<i>Stenodus leucichthys</i>	Subsistence, recreation
Northern pike	<i>Esox lucius</i>	Subsistence, recreation

Common Name	Scientific Name	Priority Status
Burbot	<i>Lota lota</i>	Subsistence, recreation
Alaska brook lamprey	<i>Lampetra alaskense</i>	BLM sensitive

<sup>A</sup>Anadromous fish species

<sup>AR</sup>Species that may be anadromous or resident species

### Desired Future Conditions for Aquatic Species

Develop and implement appropriate management practices to maintain the following desired future conditions for aquatic species:

- Maintain habitats historically occupied by native aquatic species (fish, invertebrates, plants and other aquatic-associated species) to promote continued occupation.
- Develop and implement habitat management plans and strategies for special status fish and aquatic species that include specific habitat and population management objectives designed for conservation, as well as management strategies necessary to meet those objectives.
- Monitor spatial extents of habitat disturbances to ensure disturbances are less than the area occupied by priority species, in order to preserve population structure and life history strategies.
- Cooperate to ensure aquatic habitats are managed consistently with federal, state and Native fish population goals.

### Priority Habitats

Identify and manage for priority habitats. Priority habitats are those habitats that support any life stages of priority aquatic species, which includes both resident and anadromous fish species. Due to the extensive amounts of aquatic habitat in the planning area considered priority habitats, the BLM identified the highest priority areas for aquatic species.

Approximately 363 watersheds in the planning area contain BLM-managed fisheries habitat (71 in the Steese Subunit, 136 in the Fortymile Subunit, 116 in the Upper Black River Subunit, and 40 in the White Mountains Subunit). An analytical approach was developed to categorize and evaluate watershed resource values. This process is described in Appendix I *Fisheries and Aquatic Resources*. In summary, the process categorized all watersheds containing BLM land as either Conservation or Restoration Watersheds based on watershed integrity and historic land use. Conservation Watersheds were those that have processes and functions that occur in a relatively undisturbed and natural landscape setting. Restoration Watersheds were those where biological and physical processes and functions do not reflect natural conditions because of past and long-term human-caused land disturbances. Within these categories, the watersheds were further evaluated to identify those with the highest aquatic habitat resource values using a ten factor rating system (Appendix I *Fisheries and Aquatic Resources*). The Conservation and Restoration Watersheds with the highest values were further categorized as Riparian Conservation Areas and High Priority Restoration Watersheds, respectively.

Identify high priority conservation watersheds as Riparian Conservation Areas (RCAs) and monitor these areas. These watersheds 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 requirements described below under Watershed Management.

Develop and implement active restoration practices for High Priority Restoration Watersheds. High Priority Restoration Watersheds are identified as those watersheds with the highest resource values. High Priority Restoration Watersheds would generally require active restoration practices

to restore physical and biological integrity (High Condition Rating). It is assumed that Restoration Watersheds currently exhibit a Low to Moderate Condition Rating.

The RCAs and High Priority Restoration Watersheds are displayed on Maps 6, 7, 8, 9, 10, 11, 12, and 13, and described under the subunit specific decisions.

#### Desired Future Conditions for Aquatic Habitats

Identify desired future habitat conditions for fish and aquatic resources. The desired future conditions for aquatic habitats and species must consider an integrated suite of aquatic (including both abiotic and biotic components), riparian (including riparian-associated terrestrial species), and hydrologic (including uplands) conditions. It is desirable that most watersheds, generally should be in or making progress toward a High Condition Rating as described in Section I.3.1, “Watershed Condition Matrix” of Appendix I.

Utilize habitat metrics to help design appropriate management actions or mitigate proposed activities at the site-specific project level, in attempt to move watersheds toward a High Condition Rating. If certain metrics highlight a concern in a watershed, then analysis should disclose how proposed management actions would be designed to take into account the concerns, and/or when the proposed action would lead to achieving objectives. Metric criteria values are not absolute criteria, and are rated in regards to a functional condition or ecological/biological condition.

#### Desired Future Condition Metrics for Aquatic Habitats

Within all watersheds the desired condition is to provide aquatic habitat to support native vertebrate and invertebrate populations at natural levels. Stream channel conditions are stable and consistent with the surrounding landform and watershed.

Desired stream and riparian habitat conditions are listed below. Many of these values are interim goals based on professional judgment; however, future monitoring of reference aquatic systems would be integrated to refine desired condition targets based on the Adaptive Management and Implementation and Effectiveness Monitoring Processes (Section I.2.1, “Monitoring and Evaluation of the RMP”). The refined targets would be established based upon the upper percentile of values, and stratified by channel type and other factors; such as aspect and elevation.

1. Habitat Connectivity: Native fish species have access to historically occupied habitats.
2. Water Temperature: Cold Water Biota: Habitat complexity provides daily, seasonally, annually and spatially variable water temperatures within expected normal ranges. Consistent with Alaska Water Quality Standards (18 AAC 70) temperatures may not exceed 20 degrees C. at any time. The following maximum temperatures are not exceeded:
  - Migration routes 15 degrees C.
  - Spawning areas 13 degrees C.
  - Rearing areas 15 degrees C.
  - Egg and fry incubation 13 degrees C.
3. Turbidity: Stream stability levels facilitate balanced sediment aggradation and degradation within the watershed, thereby maintaining seasonally consistent turbidity levels. Turbidity levels would not exceed those outlined in the Alaska Water Quality Standards (18 AAC 70).
4. Pool Frequency: Pool frequency would approximate Rosgen (1996) estimates based on channel type.
5. Width to Depth Ratio: Less than or equal to 12:1 for confined channel types (Rosgen channel types A, E and G); less than 20:1 for moderately confined channel types (Rosgen channel type B); and less than 40:1 for unconfined channel types (Rosgen channel types C and F).

6. Channel Substrate Condition: Spawning gravel surface fines (<0.06 mm) in pool tails <5 percent (Bryce et al. 2008).
7. Large Woody Debris (applies to forested systems): Near-natural patterns in size and amount of in-channel, large woody debris and potential wood on stream banks and floodplain.
8. Streambank Stability: Streambank stability greater than 95 percent for A and B and E channel types; greater than 90 percent for C channel types within 80 percent of any stream reach. Streambank stability would be evaluated using the BLM Multiple Indicator Monitoring technique or other appropriate methodology.
9. Riparian and RCA Vegetation: Riparian and wetland areas in Proper Functioning Condition. Conditions reflect natural disturbances processes. Desired conditions generally mature to late seral community types as outlined in Winward 2000. Percent of riparian vegetation in the greenline dominated by late seral community types or anchored rocks/logs is greater than 80 percent (good-excellent ecological condition). Over 80 percent of the plant community type along the streambank provides high bank stability, deep fibrous roots, good resistance to streambank erosion or is comprised of anchored rocks/logs. The riparian vegetation provides adequate shade, large wood debris recruitment, and connectivity.

### Management of Watersheds

These decisions apply to all watersheds and all subunits unless otherwise noted.

The BLM would provide and coordinate hydrologic data with the State to secure instream flows needed to maintain riparian resources, channel conditions, and aquatic habitats.

To achieve the goals, meet the Desired Future Conditions for aquatic habitats and species, and maintain a thriving natural ecological balance and multiple-use relationship; the SOPs in Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations* would be implemented on a project-specific basis.

Locate water removal sites to minimize impacts on priority species and avoid preventing attainment of desired conditions.

The BLM would utilize the watershed matrix to assist in site-specific project impact analysis (Appendix I *Fisheries and Aquatic Resources*) and mitigate impacts identified as potentially degrading to the watershed Condition Rating.

### The following decisions apply to mining operations on all watersheds.

To avoid unnecessary and undue degradation of public land under notice level mining operations and mining operations requiring a plan of operations, the 43 CFR 3809.420(b)(3)(ii)(E) requires the rehabilitation of fisheries and wildlife habitat. The fisheries and wildlife habitat rehabilitation performance standard requires the operator to rehabilitate or repair damage caused to fisheries or wildlife habitat.

Further, 43 CFR 3809.420(a)(3) requires operations and post-mining land use to comply with the applicable BLM land use plans and activity plans, and with coastal zone management plans under 16 U.S.C. 1451, as appropriate. The following section outlines planning area and location-specific goals that need to be the focus of a fisheries rehabilitation plan submitted under 43 CFR 3809.301 and 3809.401 in order to meet the fisheries rehabilitation requirement under 43 CFR 3809.420(b)(3)(ii)(E).

For purposes of this plan, the rehabilitation of fisheries habitat is defined as providing aquatic and riparian habitat characteristics that will support fish such that the species and life stage composition and density that occurred prior to disturbance is reestablished. Given the complexity of fisheries habitat rehabilitation in Alaska, reclamation plans will include detailed descriptions of measures to achieve the following three objectives:

1. 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 the operator must design a post-mining stream channel using morphological characteristics of the pre-disturbance channel and floodplain (e.g., bankfull and floodprone dimension, meander pattern, design flows and velocity, riffle to pool ratio, substrate particle size). These characteristics 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. A key reference used on the national scale for alluvial channel design is The National Resources Conservation Service's *Stream Restoration Design, National Engineering Handbook, Part 654* (NRCS 2007 Chapter 9);
2. 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; and,
3. Provide instream habitat complexity similar to that of pre-disturbance levels by the use of instream structures (e.g., vortex rock weirs, cross-vane structures, installation of root wads).

By focusing on these three objectives, the probability of fisheries habitat rehabilitation success is increased. Typically, the operator would satisfy these requirements through the development of a site-specific reclamation plan. Bond release would be based on meeting specific measurable objectives outlined in a reclamation plan (43 CFR 3809.401(b)(3)).

Develop monitoring and associated reporting requirements as part of site-specific plans (i.e., Plan of Operation) to measure impacts and subsequent reclamation success levels. Use monitoring data to adaptively manage existing and future plans of operation to make measurable progress toward desired future conditions in subsequent years following reclamation.

### **Riparian Conservation Areas and ACEC Specific Requirements:**

The management goal in RCAs and ACECs that meet the relevance and important criteria for fish and aquatic resources is to: maintain and provide stream channel integrity, ensure riparian proper functioning condition, and achieve desired future conditions for the high-value fish and aquatic resources, and yet allow for surface-disturbing activities.

To increase the likelihood of fisheries habitat rehabilitation within these watersheds, which represent the highest value fisheries resources within the planning area, additional baseline data pursuant to 43 CFR 3809.401 (c) (1) would be required. Within these areas baseline hydrological data that is adequate to characterize seasonal flow patterns and discharge would be required from the operator. The BLM would be available to advise operators on the exact type of baseline data and detail needed to meet this requirement. In addition reclamation requirements in site-specific reclamation plans, would be designed to result in rehabilitation of habitats within an accelerated time frame (e.g., less than five years). To achieve fisheries habitat rehabilitation within five years, rigorous revegetation and streambank stabilization techniques and a high level of monitoring and maintenance will be required.

### **High Priority Restoration Watersheds:**

The goal is to manage High Priority Restoration Watersheds to restore physical and biological integrity (High Condition Rating). Within the planning area, federal funding (greater than one million dollars in Abandoned Mine Lands Funds) has been used for the Harrison Creek stream channel and floodplain restoration project.

To ensure that this project and any future restoration projects are not adversely impacted, the following would apply:

All surface-disturbing activities proposed within the same or upstream watersheds of ongoing or completed restoration projects must outline specific measures to adequately mitigate or minimize adverse impacts to the restoration project. This may be accomplished by providing a detailed plan of operations and a reclamation plan demonstrating the use of current best management practices.

#### Essential Fish Habitat (EFH) Management

BLM-authorized actions that may adversely affect EFH either directly or indirectly will be analyzed and coordinated with the National Marine Fisheries Service pursuant to 50 CFR § 600.905-930.

Incorporate additional conservation measures, recommended by the National Marine Fisheries Service in site-specific consultation, to minimize impacts to EFH.

Implement the measures outlined in Appendix G of the 2005 Alaska Essential Fish Habitat Environmental Impact Statement as appropriate (Section I.6, “Recommended Conservation Measures for Essential Fish Habitat”).

#### **2.6.2.4. Non-Native Invasive Species**

##### GOAL:

Prevent the introduction and spread of noxious and non-native invasive species on and adjacent to BLM-managed lands.

##### DECISIONS:

Use integrated pest management (IPM) practices to control or eradicate noxious and non-native invasive species.

Within five years of signing the ROD or by management direction, develop a step-down Invasive Species Strategic Management Plan for the planning area to implement IPM practices, which may include cultural, biological, mechanical, manual, or chemical controls. The plan would incorporate early detection and rapid response efforts and, using the Alaska invasiveness risk ranking to prioritize treatments, include prevention practices. Prevention practices may include outreach and education, vehicle, boat, OHV, and aircraft cleaning protocols, and use of certified weed-free gravel and seed. Additional SOPs and Fluid Mineral Leasing Stipulations for land uses may be developed through the step-down plan.

Complete inventory and mapping for noxious and non-native invasive plants at disturbed sites within the Fortymile Subunit and along trails and WSR corridors within five years of signing the ROD or by management direction.

Conduct inventory for other non-native invasive species, including insects, pathogens, and other pests, as they are detected moving toward the planning area.

Monitor all inventory and control sites on a rotational basis (every two to three years depending on severity of infestations and treatment method).

Continue to support data management through the Alaska Exotic Plant Information Clearinghouse (AKEPIC) database and the BLM national database (National Invasive Species Management Information System).

Work with the Committee for Noxious and Invasive Plants Management in Alaska, the Alaska Department of Natural Resources, the Alaska Invasive Species Working Group and other agencies and groups to coordinate inventory, monitoring, prevention, and control of noxious and non-native invasive species within the planning area.

Adapt management of non-native invasive plants to address climate change and other management issues as new information becomes available.

Minimize the introduction and spread of noxious and non-native invasive plants through use of Alaska certified weed-free products for any action requiring stabilization, reclamation, restoration, or revegetation. When certified products are not available, use native seed and locally produced products.

Comply with the most current BLM Alaska Noxious Weeds and Invasive Species Management policy.

Employ measures outlined in the most current Alaska Aquatic Nuisance Species Management Plan (ADF&G 2002a) and the most current Interim Fire Operations Guidance to Prevent Spread of Aquatic Invasive Species (USFS 2011) to reduce the introduction and spread of Aquatic Nuisance Species.

### **2.6.2.5. Paleontological Resources**

#### **GOALS:**

Manage, protect, and preserve paleontological resources using scientific principles and expertise to ensure that they are available for appropriate uses by present and future generations.

Ensure that proposed land uses initiated or authorized by BLM avoid or mitigate inadvertent disturbance to federal and non-federal paleontological resources.

Promote stewardship, conservation, and appreciation of paleontological resources through educational and outreach programs.

#### **DECISIONS:**

Require permits for individuals or institutions conducting paleontological investigations for vertebrate fossils and some rare invertebrates on public lands and ensure that fossils remain in federal custody.

Prior to projects that may result in extensive surface or sub-surface disturbance in areas likely to contain significant paleontological resources, conduct an inventory for paleontological

resources. At times, this may be done in conjunction with the inventory for cultural resources but supplemental paleontological expertise may be needed in other cases.

Comply with federal laws (National Environmental Policy Act; Federal Land Policy and Management Act; Paleontological Resources Preservation Act) and regulations for the preservation of paleontological resources by avoiding impacts to significant paleontological resources through project redesign, project abandonment, and/or mitigation of adverse impacts through scientific recovery and analysis.

Enable scientific use of paleontological resources by qualified non-BLM personnel for scientific research and public education. Allow the removal of significant paleontological resources by means of a BLM-issued permit, which requires that such resources remain the property of the United States and are preserved for the public in an approved repository.

Inventory public lands for paleontological resources. Maintain an inventory of paleontological sites and localities. Monitor paleontological sites in danger of alteration or destruction from natural- or human-made causes. Develop partnerships as feasible to achieve these ends.

#### **2.6.2.6. Soil Resources**

##### **GOALS:**

Ensure that watersheds are in (or are making significant progress toward) a properly functioning physical condition that includes their upland, riparian, wetland, and aquatic areas. The infiltration and permeability rates, moisture storage, and stability of upland soils are appropriate to the watershed's soil, climate, and landform (BLM 2004c).

- Protect the soil surface from erosion; avoid detention of overland flow; maintain infiltration and permeability consistent with the potential/capability of the site.
- Promote moisture storage by soil and plant conditions consistent with the potential/capability of the site.
- Hydrologic, vegetative, and erosion/depositional processes support physical functioning, consistent with the potential or capability of the site.
- Stream channel, lake bed, shoreline characteristics are appropriate for the landscape position.

Ensure that water and nutrient cycling and energy flow support healthy, productive, and diverse natural communities. Water and nutrient cycling and energy flow occur effectively to support healthy, productive, diverse communities at levels appropriate to the potential/capability of the site.

Minimize soil erosion and sedimentation associated with storm water discharge from disturbed sites, particularly where soils and overburden are stripped and stockpiled for an extended period of time.

##### **DECISION:**

Design all BLM-authorized surface-disturbing activities to reduce soil erosion and minimize impacts to soil profiles. Where permitted operations result in surface disturbance, return land to its pre-disturbance condition to the extent possible. SOPs (*Appendix A Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) would be implemented to reduce soil impacts from surface-disturbing activities.

Where permitted surface disturbing operations result in a total land disturbance of equal to or greater than one acre an Alaska Pollutant Discharge Elimination System (APDES) permit for Storm Water discharge, will normally be required and would include developing and following a Storm Water Pollution Prevention Plan (SWPPP) to manage materials, equipment, and runoff from the site. Most construction, materials, and placer mine operations would be eligible for coverage under a construction or multi-sector industrial activity general permit.

- The Alaska Construction General Permit (ACGP) (AKR100000, Effective May 2011) authorizes storm water discharges from large and small construction activities that result in a total land disturbance of equal to or greater than one acre and where those discharges enter waters of the United States (U.S.). Construction operations must meet specific Best Management Practices (BMP) requirements and water quality standards for turbidity.
- The Multi-Sector General Permit for Storm Water Discharge associated with Industrial Activity (MSGP) (AKR060000, Effective April 2015) requires industrial facilities to implement control measures and develop site-specific storm water pollution prevention plans (SWPPP) to comply with APDES requirements and meet water quality standards for turbidity. Requirements in Subpart G apply to storm water discharges associated with industrial activity from Metal Mining facilities, including mines abandoned on federal lands. Coverage is required for metal mining facilities that discharge storm water contaminated by contact with, or that has come into contact with, any overburden, raw material, intermediate product, finished product, by-product, or waste product located on the site of the operation.

It is anticipated that most materials sites and placer mining operations will need MSGP coverage to address storm water discharge from their industrial activities. Permit coverage is required from the commencement of surface disturbing activities until final stabilization.

### **2.6.2.7. Special Status Species**

#### **GOALS:**

Manage animal and plant resources and habitats consistent with the conservation needs of Special Status Species (BLM Manual 6840) in a manner that will not contribute to the need to list any species under the Endangered Species Act and to ensure progress towards recovery of any listed threatened or endangered species.

Manage BLM Alaska sensitive species habitats so that actions do not contribute to species decline or contribute to federal listing.

Prevent damage from proposed land uses to habitats supporting Special Status Species.

Identify, conserve, and monitor Special Status Species and habitats to ensure that self-sustaining populations of these species continue to persist in the planning area (i.e., without the need for population supplementation or habitat restoration efforts). Ensure that habitats support healthy, productive, and diverse populations and communities of native plants and animals.

#### **DECISIONS:**

Develop a Special Status Species management plan in cooperation with ADF&G. This plan would determine inventory and monitoring needs, priorities and methods, and recommend management

actions necessary to conserve these species. Increased inventory may lead to removal of some species from the Special Status Species list.

Develop and implement appropriate site-specific and programmatic management practices to avoid or minimize adverse impacts to sensitive species and their habitats.

If impacts to Special Status Species (populations and habitats) cannot be avoided, the applicant (or the BLM for internal actions) will develop mitigation measures to reduce impacts.

Require the project proponents to complete surveys for Special Status Species when it is determined that the project will impact or could possibly impact potential habitat. The mitigation hierarchy will be implemented if Special Status Species are found during inventories.

Where sensitive status plant species are located, implement measures to protect these populations or individuals through site-specific buffers or management prescriptions, such prohibiting surface occupancy or ground disturbance in occupied habitats, where appropriate. Site new roads and trails away from sensitive plant populations and minimize summer cross-country OHV travel where sensitive plants are located.

Monitor BLM sensitive plant species populations. Where disturbance to individuals or habitat is documented, remove the source of the disturbance to a location that avoids continued damage or implement mitigation to reduce the damage.

Cooperate with partners in inventory and monitoring of rare plant and animal species to improve the knowledge of statewide abundance, distribution, and trends of sensitive species and the development of management strategies at a regional scale.

Where it is found that Special Status Species habitat is likely to be negatively affected by use (i.e., such use is likely to result in a significant local or regional decline in species distribution, abundance, or productivity), such uses would be redirected to other locations, or other mitigation actions that will be effective in preventing local population impacts will be implemented in accordance with BLM 6840 Manual.

Ensure reclamation and restoration plan objectives incorporate the needs of Special Status Species where habitat potential exists.

In restoration watersheds, improve habitats for Special Status Species, particularly riparian and wetland habitats, or other habitats that may support multiple Special Status Species.

### **2.6.2.8. Vegetative Communities**

#### **GOALS:**

Ensure that watersheds (including their upland, riparian, wetland, and aquatic areas) are making significant progress toward or are in proper functioning condition.

Ensure that water and nutrient cycling, and energy flow support healthy, productive, and diverse natural communities.

Ensure that habitats support healthy, productive, and diverse populations and communities of native plants and animals.

In disturbed areas, rapidly re-establish native plant communities, with locally adapted plants. (Recognizing that temporary establishment of non-native plants may occasionally be necessary to stabilize sites, control erosion, or facilitate eventual establishment of native plants).

#### DESIRED OUTCOME:

Maintain the current nature of the vegetation in the planning area which has a natural diversity of species, communities, and seral stages largely undisturbed, except by natural forces.

#### DECISIONS:

Manage wildland fire to achieve natural fire regimes and ecosystem processes dependent upon fire. Use prescribed fire in select areas to improve wildlife habitat.

In response to shifting fire regimes resulting from climate change, fire management may be implemented to achieve wildlife habitat objectives (e.g., meeting habitat needs for subsistence species) or to facilitate ecosystem adaptation to climate change (e.g., addressing spread of invasive plants).

All firelines would be rehabilitated and closed to OHV use to facilitate revegetation. Rehabilitate firelines by spreading original soil and vegetation on the disturbed ground, except in specific circumstances where seeding or planting may be necessary. Protect vegetation from damage caused by summer OHV use. In specific circumstances where firelines are routed and constructed so that they meet pre-determined travel management needs and maintain resource values, the AO may determine that an exception is appropriate and retain suitable firelines as OHV or snowmobile routes. Fire lines built on existing roads or OHV trails will be returned to conditions suitable for original use.

Manage lichen-rich plant communities as high value habitats due to the slow growth potential of lichen and its great importance to caribou.

When developing travel management plans, minimize impacts through appropriate restrictions on cross-country OHV use. Monitor vegetation for impacts that may be caused by OHVs.

Reduce disturbance of vegetation by minimizing footprint of surface-disturbing activities, consolidating access to minimize the number of routes, and requiring prompt reclamation and revegetation.

Avoid disturbance of the vegetative mat unless it is not feasible to do so. Plans for revegetation of surface disturbances will be addressed during authorization of an action (as outlined in SOP Veg-1).

Utilize and encourage natural revegetation of disturbed sites as the generally preferred method of revegetation (in situations where this is adequate to prevent erosion and will result in rapid establishment of plant cover). In some circumstances, however some combination of seeding, planting, and transplanting of adult plants or vegetation mats, or fertilizing may be necessary. Native species would be utilized whenever possible if seeding or planting is necessary. Temporary establishment of non-native plants may occasionally be approved by the Authorized officer when it is determined to be necessary to stabilize sites, control erosion, or facilitate eventual establishment of native plants. Vegetation treatment and revegetation requirements are described in SOP Veg-1 in Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*).

Manage riparian and wetland areas to achieve proper functioning condition (PFC), or if not at PFC, to enhance condition rating. Management strategies to achieve PFC are described in section 2.6.2.3.

Inventory vegetation community composition across the planning area and monitor changes related to climate and fire regime (size, frequency, and severity).

In addition to mapping of fire perimeters, map unburned inclusions within fire perimeters and fire severity on fires 1,000 acres or greater using Monitoring Trends in Burn Severity (MTBS) standards established by U.S. Geological Service (USGS) and U.S. Forest Service, or similar interagency standards.

Monitor the area of surface disturbance and areas effectively reclaimed, allowing an estimate of cumulative un-reclaimed surface disturbance.

Map priority habitats and plant communities to facilitate conservation planning and the mitigation of impacts to priority habitats and plant communities.

Conduct watershed assessments as outlined in section 2.6.2.3 Fish and Aquatic Species.

In areas of potentially sensitive habitats, prepare and utilize ecological mapping to identify unique, rare, or high-value plant species, communities, and habitats and to allow development of mitigation.

#### Priority Plant Species and Communities

The priority plant communities listed below constitute a small proportion of the planning area, yet support a number and variety of plant and animal species and ecosystem processes.

- Aspen/steppe bluffs (most often occurring as river bluffs)
- Riparian communities
- Wetlands (with a focus on wetlands other than the widespread mesic black spruce and tussock and shrub tussock vegetation types)
- Tall shrub communities
- Sparsely plant covered calcareous substrate (e.g., limestone)
- Lichen-rich habitats

Priority plant species would be plants on the BLM Alaska Sensitive Species and BLM Alaska Watch lists.

### **2.6.2.9. Visual Resources**

#### GOAL:

Maintain and manage visual resource values in accordance with Visual Resource Management (VRM) Classes.

#### DECISIONS:

Designate all BLM-managed lands into one of the following VRM Classes; VRM Class allocations are described under each subunit:

VRM Class I: Preservation of the landscape is the primary management goal. This class provides for natural ecological changes; it does not, however, preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

VRM Class II: The objective of this class is to retain the existing character of the landscape. Activities or modifications of the environment should not be evident or attract the attention of the casual observer. Changes should repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape.

VRM Class III: The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not detract from the existing landscape.

VRM Class IV: The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. Changes may attract attention and be dominant landscape features, but should reflect the basic elements of the existing landscape. Class IV rating is generally reserved for areas where the visual intrusions dominate the view shed but are in character with the landscape.

### **2.6.2.10. Water Resources**

The BLM's role in water resource management includes ensuring that BLM activities, programs, and projects comply with applicable state and federal laws and regulations and that BLM-authorized activities comply with conditions and stipulations in leases and permits. Surface and ground water of sufficient quality and quantity, is integral to the successful management of the public lands managed by the BLM. The water program leads efforts to assess and restore water quality conditions, assess and restore channel and floodplain conditions, and acquire and monitor instream flow water rights. This work is accomplished through interagency coordination, participation in state implementation plan development and processes, collecting and acquiring data, modeling water resource impacts, monitoring changes in water resource conditions, performing environmental impact analyses as required by NEPA, and implementing adaptive management practices as outlined in BLM Handbook H-1601-1.

#### **GOALS:**

**Watersheds:** Watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian, wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow.

**Water Quality:** Protect, restore, and maintain the natural chemical, physical, and biological quality of surface and ground waters, wetlands, and floodplains influenced by BLM resource management activities. Ensure full compliance with applicable federal and state laws and executive orders.

**Water Quantity:** Protect, restore, and maintain the natural flow regime, water levels, and integrity of surface and ground waters influenced by BLM resource management activities.

**Water Rights:** Ensure availability of surface and ground water 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.

**Wild and Scenic Rivers:** Each Wild and Scenic River component will be managed to protect and enhance the values for which the river was designated with protection of water quality and quantity as a principal goal.

**Science-based Adaptive Management:** 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 water resource management.

**Assessment and Monitoring:** Provide a unified framework for BLM's science-based watershed approach to management of natural and developed water systems consistent with federal and state water quality and quantity assessment methods, including monitoring, sampling, and reporting protocols.

#### DECISIONS:

Ensure BLM activities, programs, and projects comply with all applicable federal, State, Tribal, and local water quality, wetland, and floodplain laws, statutes, regulations, standards, and state implementation plans, consistent with executive orders, the Clean Water Act and FLPMA.

Develop regional scale water quantity and water quality monitoring strategies in cooperation with other federal and State agencies consistent with science-based adaptive management. Focus management on entire watersheds using an ecosystem approach involving all interested landowners and affected parties when feasible.

Compile summary reports on a rotational basis (every three or four years, or more frequently as necessary) for inventory and monitoring data collected to support WSR instream flow water rights and water quality.

Consistent with the Antidegradation Policy in the Alaska Water Quality Standards (18 AAC 70.015) all segments designated as Wild or Scenic of Birch Creek, Beaver Creek, and the Fortymile River National Wild and Scenic Rivers, are nominated as Tier 3 waters, also referred to as Outstanding National Resource Waters (ONRW). See 18 AAC 70.015(a)(3).

Where permitted surface disturbing operations result in a total land disturbance of equal to or greater than one acre an Alaska Pollutant Discharge Elimination System (APDES) permit for Storm Water discharge, will normally be required and would include developing and following a Storm Water Pollution Prevention Plan (SWPPP) to manage materials, equipment, and runoff from the site. Most construction, materials, and placer mine operations would likely be eligible for coverage under the Alaska Construction General Permit (ACGP) (AKR100000, Effective May 2011) or the Multi-Sector General Permit for Storm Water Discharge associated with Industrial Activity (MSGP) (AKR060000, Effective April 2015). Permit coverage would be required from the commencement of surface disturbing activities until final stabilization.

Within five years of signing the ROD, or by management direction, undertake development of step-down Watershed Management Plans (WMPs) for high-value streams in each subunit. Watershed planning helps address water quality problems in a holistic manner by fully assessing the potential contributing causes and sources of pollution including uplands, then prioritizing restoration and protection strategies to address these problems. The main watersheds in each subunit vary widely 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. Site specific soil and water management determinations (e.g., watershed, floodplain-wetland, or riparian rehabilitation techniques, monitoring techniques and schedule, and the design and placement of improvements) will be developed in the interdisciplinary Watershed Management Planning phase for resource programs. The “Watershed Assessment Matrix” (Table I.1), depicting range of desired conditions for aquatic habitats would be incorporated in the Watershed Management Plans as well as other science-based watershed assessment tools. Relevant new science and new empirical water resource data would also be incorporated in the WMPs. Additional SOPs and Fluid Mineral Leasing Stipulations for land uses may be developed through the step-down WMPs.

Systematically inventory, model, analyze, and monitor water resources on an established schedule in order to evaluate conditions and trends and their potential impacts on and from BLM-authorized activities consistent with science-based adaptive management principles.

Prioritization of disturbed stream sites for rehabilitation, stabilization, and restoration would be based upon an interdisciplinary team site assessment and other BLM land or resource use considerations. Consider the extent to which the site may deteriorate if restoration or improvement action is not immediately implemented. Areas that may suffer further degradation and have potential for improvement should be given top priority. Those that have been degraded but appear stable may be given lower priority for restoration and improvement. Other factors, such as special status species, water quality, competing water uses, fisheries, and recreation values should also be considered when establishing priorities.

The BLM will utilize available USFWS National Wetlands Inventory (NWI) database and maps in determining wetland classification for a particular site. Where published (NWI) maps are not available other federal or State wetland maps will be utilized. Where federal or State maps are not available BLM or other agency personnel with wetland expertise will use published federal guidance to determine wetland classification.

Procedures for implementing Executive Order 11988, Floodplain Management are set forth as an 8-step decision-making process outlined in Part II of the 1978 Water Resources Council Guidelines. When an action is proposed in a floodplain, the 8-step procedural process will be addressed and integrated in developing land use authorizations.

### **2.6.2.11. Wilderness Characteristics**

**GOAL:** In areas identified for minimization of impacts to wilderness characteristics, retain wilderness characteristics including naturalness, solitude, and outstanding opportunities for primitive and unconfined recreation to the extent possible while allowing for other multiple use activities.

#### **DECISIONS:**

For all action alternatives, the following activities, uses, and decisions could occur in areas identified as lands where wilderness characteristic would be maintained. Allowable activities are not limited to activities and uses listed below. The listed activities are those protected under ANILCA.

- Snowmobile travel with adequate snow cover

- Motorboat use
- Airplane use, including primitive, unimproved landing areas
- Temporary structures and equipment placement related to hunting, fishing, and trapping
- Public use cabins and other small facilities for visitor safety and recreational use
- Limited OHV use
- Access for subsistence use and commercial activities including rights-of-way or other types of permits

**RATIONALE:** Through a wilderness characteristics inventory, the Eastern Interior Field Office determined that 99 percent of BLM lands in the planning area (over 6.4 million acres) have wilderness characteristics (Appendix F). Under BLM Manual 6320, the BLM can manage areas to emphasize other resource values and multiple uses while applying management restrictions to protect wilderness characteristics. Management for other resource drivers such as recreation, wild and scenic rivers, fish, and wildlife are complementary to maintaining wilderness characteristics.

BLM Manual 6320 outlines several outcomes of considering wilderness characteristics in the land use planning process, including, but not limited to: (1) emphasizing other multiple uses as a priority over protecting wilderness characteristics; (2) emphasizing other multiple uses while applying management restrictions (conditions of use, mitigation measures) to reduce impacts to wilderness characteristics; (3) the protection of wilderness characteristics as a priority over other multiple uses. Alternatives in the plan consider outcomes (1) and (2). Under (1) wilderness characteristics will not be considered during site specific NEPA analysis and project permitting, and no measures will be applied specifically to reduce impacts to wilderness characteristics, although mitigation for other resources may have the effect of reducing impacts to wilderness characteristics. For example requiring site reclamation and revegetation to reduce erosion would contribute to maintaining naturalness of the site. Under (2) wilderness characteristics will be considered during site specific NEPA analysis and project permitting. Measures will be applied to reduce impacts to size, naturalness, opportunities for solitude, and outstanding opportunities for primitive and unconfined recreation. The impacts to wilderness characteristics will be analyzed in the associated NEPA document.

ANILCA allows certain uses in Wilderness areas in Alaska. Since these uses are allowed in designated Wilderness, these uses could also occur on lands with wilderness characteristics while still maintaining those characteristics. In the planning area, maintaining wilderness characteristics is consistent with ANILCA-protected uses and facilities, including: snowmobile and motorboat use; other means of surface transportation traditionally employed for subsistence purposes; airplane landings; temporary structures related to hunting, fishing and trapping; and public use cabins (ANILCA sections 811, 1110, 1315(d), and 1316(a)).

### **2.6.2.12. Wildland Fire Ecology and Management**

#### **GOALS:**

Protection of human life is the single overriding priority. Other priorities are based on the values to be protected, human health and safety, and the costs of protection.

Respond to all wildfires, with an emphasis on firefighter and public safety, and ensure that costs are commensurate with the values to be protected.

Use wildland fire, and other treatments to maintain or restore ecological systems and to meet land use and resource management objectives.

Prevent human caused wildfires.

Reduce risk and costs of wildfire by managing wild fires to meet resource objectives and implementation of fuels management projects.

Reduce adverse effects of wildland fire management activities.

#### DECISIONS:

Cooperate and collaborate with other federal, state, and Native land managers, and with other suppression organizations to address issues and concerns related to wildland fire management in Alaska and to implement operational decisions. Implement the most current fire management plan.

Apply four wildland fire management suppression options: Critical, Full, Modified, and Limited. Management options are ecologically and fiscally sound, operationally feasible, and sufficiently flexible to respond to changes in fire conditions, land use patterns, resource information, new technologies, and new scientific findings. Throughout the planning area, fire may be managed for multiple objectives. These options will be revisited by the field office annually and changed as needed to ensure the most effective initial response from the protection agency. Option changes will be documented on the official map atlases maintained by the Alaska Interagency Coordination Center and the respective Protection Zone/Area.

Common indicators for changing fire management options include:

- A value to protect appears on the landscape (i.e. new neighborhood, structures is determined to have historic value, critical caribou habitat mapping); a value to protect disappears from the landscape.
- A non-standard response was required for a wildfire the year previous and justifies the need for a change in that area.
- A fire or other disturbance changes the fuel structure.
- Another agency proposes an inter-agency change involving BLM for the previously described reasons.

The designation of a management option pre-selects strategies to accomplish established land use and resource objectives. Management options, objectives, wildland fire response and acres are listed in Table 2.3, "Wildland Fire Management Options in the Eastern Interior Planning Area" and displayed on Map 14.

Implement the Standard Operating Procedures listed in Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations* during wildland fire management activities.

**Table 2.3. Wildland Fire Management Options in the Eastern Interior Planning Area**

Management Options	Critical	Full	Modified	Limited
BLM Acres	5,000 acres	45,000 acres	168,000 acres	6,304,000 acres
Objectives	Protect and Preserve	Protect and Preserve	Moderate fire effects and Balance acres and costs	Manage for a natural fire regime
Initial Fire Response	Aggressive and continued actions to protect the area from fire without compromising firefighter safety.	Aggressive action to minimize resource damage and suppress the fires at the smallest reasonably possible number of acres.	Initial attack with intent to contain the fire when resources are available. If resources are not available, allow fire to function in its natural ecological role. Actions will be taken to protect site-specific values or adjacent higher priority management areas.	Allow fire to function in its natural ecological role. Actions will be taken to protect site-specific values or adjacent higher priority management areas.

In addition to these wildland fire management options, some actions will be taken to protect specific sites that have been identified for special fire management protection. Site-specific actions may be taken to protect structures, cultural and paleontological sites, small areas of high resource value, and threatened and endangered species habitat to give suppression agencies more specific guidance for small sites.

Monitor vegetative communities for cumulative effects of wildland fire, suppression activities, and effects of excluding fire.

The desired future condition for BLM-managed lands is to be in Fire Regime Condition Class 1, which represents landscapes still within the natural historical range of variation in fire regime.

In response to shifting fire regimes resulting from climate change, fire management may be implemented to achieve wildlife habitat objectives (e.g., meeting habitat needs for subsistence species) or to facilitate ecosystem adaptation to climate change (e.g., addressing spread of invasive plants).

Fuels management activities assist in achieving the objectives stated for wildland fire management options. Prescribed burning, mechanical and manual treatments may also be used. Projects may be implemented in support of scientific research and in cooperation with BLM cooperators and partners.

Fuels treatments are prioritized to:

1. Reduce the risk to human life and inhabited property. Highest priority for fuel treatments would be those communities surrounded by hazardous fuels.
2. Reduce the risk and cost of wildland fire suppression in areas of hazardous fuels buildup.
3. Achieve other resource objectives such as habitat needs.
4. Achieve desired future condition of Fire Regime Condition Class 1.

### 2.6.2.13. Wildlife

GOALS:

Maintain natural ecosystem functions and the quality and quantity of habitat to support healthy populations of wildlife.

In cooperation with ADF&G, monitor wildlife populations and habitats and manage BLM lands to conserve and enhance fish and wildlife populations. Ensure optimum, self-sustaining populations and a natural abundance and diversity of wildlife resources.

Maintain and protect subsistence resources and opportunities. Determine how management actions, guidelines, and allowable uses prescribed in response to the other issues will affect subsistence opportunities and resources. Monitor populations and habitats to ensure opportunities for subsistence harvest of wildlife.

Minimize impacts to wildlife species and their habitats from BLM-authorized activities on BLM-managed lands.

Protect habitats important to wildlife population maintenance by the avoidance of possible adverse effects of land use activities, through mitigation and by reserving specific areas from certain land use activities.

Maintain a diversity and abundance of wildlife habitat that will provide resilience in adaptation to changing climate.

Ensure opportunities for wildlife viewing, fishing, hunting, and trapping.

Locate trails and recreational development to avoid conflicts with important and priority wildlife habitat and environmentally sensitive areas.

Maintain and restore riparian and wetland areas so that they provide habitat diversity and healthy riparian and aquatic conditions for riparian and wetland dependent species and other wildlife species.

#### DECISIONS:

Manage habitat for migratory birds to emphasize avoidance or minimization of negative impacts, and to restore and enhance habitat quality pursuant to Executive Order 13186, Migratory Bird Treaty Act, and Memorandum of Understanding between BLM and USFWS to Promote Conservation of Migratory Birds (2010). Bird Species of Concern are listed in Table 3.17, "Bird Species of Conservation Concern in the Eastern Interior Planning Area" and include: USFWS Bird Species of Conservation Concern, BLM Alaska Sensitive Species, Featured Species in the Alaska State Wildlife Conservation Strategy, and Boreal Partners in Flight Priority Species. Habitats that support several of these species, (including riparian and wetland habitats) would be given priority consideration in efforts to minimize impacts and restore habitat quality.

Minimize impacts to known nesting sites of priority raptors from actions authorized by the BLM. Priority raptor species are peregrine falcon, gyrfalcon, bald eagle and golden eagle. Specific SOPs applicable to priority raptor habitats are listed in Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*. All priority raptor SOPs may be modified based on project-specific analyses. Nest sites of other raptors would be similarly managed, although management would generally be less restrictive and would be determined in site-specific environmental analyses.

Employ industry-accepted best management practices to prevent raptors and other birds from colliding with or being electrocuted by utility lines, alternative energy structures, towers, and poles (Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*).

Maintain health of Dall sheep by maintaining effective separation (WAFWA 2012) between Dall Sheep and domestic animals that pose a risk to Dall sheep health, including sheep, goats, llamas, alpacas, and other camelids. Prohibit the use of domestic goats, sheep, alpacas, llamas, and other similar species in conjunction with BLM-authorized activities occurring in Dall sheep habitat. Educate the public about the disease risks of using these pack animals within Dall sheep habitat.

Protect important wildlife habitats through special restrictions where necessary, including yearlong or seasonal activity restrictions and minimum altitudes for aircraft use (Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*).

Avoid or minimize impacts from projects that could degrade riparian areas and promote restoration of riparian areas to achieve Proper Functioning Condition.

Develop a caribou habitat management plan for the historical range of the Fortymile caribou herd. In cooperation with other land managers and ADF&G, utilize a combination of on-the-ground inventory and remote sensing of caribou habitat, along with caribou habitat use and distribution data, to develop the plan.

Inventory and monitor caribou range (forage) conditions in the Steese National Conservation Area in cooperation with other land and wildlife managers. These efforts would include analyses of the impacts of climate change on fire regimes and caribou forage, and recommendations for management of Fortymile caribou herd habitats.

#### Priority Wildlife Species and Habitats

Inventory and monitor priority wildlife species and their habitats within the planning area. Species listed in Table 2.4, “Priority Wildlife Species and Habitats in the Eastern Interior Planning Area” and Bird Species of Concern (Table 3.17) would be a conservation priority in the planning area.

Monitor populations of priority and subsistence wildlife species in cooperation with ADF&G and USFWS. Identify important habitats for priority species and monitor changes. Work towards development of adaptive management plans that will identify levels of change at which management actions will be implemented. Other important species and habitats include denning and seasonal high use areas for bears and furbearers, nesting habitats for other raptors, waterfowl, and shorebirds, and winter concentration areas for small game. .

**Table 2.4. Priority Wildlife Species and Habitats in the Eastern Interior Planning Area**

Priority Species, All Subunits	Priority Seasonal Habitats (with higher priority habitats listed towards left)				
	Calving/ Post-calving (including mineral licks)	Summer (including insect-relief habitat)	Migration/ Movement routes	Pre-calving	Fall/Winter
Caribou					
Dall sheep	Mineral licks (summer)	Lambing	Movement Routes	Summer	Winter
Moose	Calving	Mineral licks	Late winter	Rutting	Riparian and willow shrub habitats

Priority Species, All Subunits	Priority Seasonal Habitats (with higher priority habitats listed towards left)				
Peregrine falcon, gyrfalcon, bald eagle, golden eagle	Nesting	Prey gathering			
All Special Status Species – See Appendix K					
<b>Additional Priority Species for Black River Subunit only:</b> Marten and lynx					

## 2.6.3. Resource Uses

### 2.6.3.1. Forest and Woodland Products

**GOALS:**

Maintain and restore the health, productivity, and biological diversity of forest and woodland ecosystems.

Consistent with other resource values, provide personal use of wood and special forest products for local consumption and opportunities for commercial harvest.

**DECISIONS:**

Allow harvest of dead or downed wood for recreational uses, including camping on all BLM-managed lands throughout the planning area.

Allow harvest of forest products for personal use on all BLM-managed lands throughout the planning area.

Areas where commercial timber harvest is authorized is described for the subunits. In addition to requirements outlined in the SOPs (Section A.2, “Standard Operating Procedures Considered in the Draft RMP”), consider the following limitations in areas where timber harvest is authorized.

- Require winter harvest to minimize disturbances to soils and ground vegetation.
- Disperse slash generated from timber harvest activities.
- Set a maximum stump height for harvested trees.

### 2.6.3.2. Land Tenure

**GOALS:**

Retain public lands with high resource values. Adjust land to consolidate public land holdings, acquire lands with high public resource values, and meet public and community needs.

Acquire and maintain access to public lands, where needed, to improve management efficiency and facilitate multiple use and the public’s enjoyment of these lands in coordination with other federal agencies, state and local governments, and private landowners.

**DECISIONS:**

Those lands to be retained, acquired, or disposed of are identified as Zone 1, 2, or 3, in Appendix G, *Land Tenure and Withdrawals*. Zone 1 lands are displayed on Maps 99 and 100. These decisions have no effect on the ongoing land conveyance process or valid selections.

Lands in Zone 1 would be retained under BLM management. Inholdings would be considered for acquisition on a willing seller basis.

Lands in Zone 2 would generally be retained, but would be available for acquisition or disposal, whichever is appropriate to enhance public resource values, improve management capabilities, or reduce the potential for land use conflict.

Lands in Zone 3 would be made available for disposal. If needed, modify existing public land orders to allow for disposal.

Lands currently in Zones 2 and 3 would be reassigned to Zone 1 if they are included in future designations of critical habitat under the Endangered Species Act by the USFWS.

**RATIONALE:** With the ongoing conveyance of State- and Native-selections, the final land status in the planning area is uncertain. Once the conveyances are complete and the entitlements are fulfilled, there may be scattered parcels of BLM-managed lands that are impractical or uneconomical to manage. The zoning method described above would provide the flexibility to either dispose of or acquire land for the purposes of blocking up land patterns and reducing the number of scattered parcels of BLM-managed lands.

There are many “orphan” federal mining claims within the planning area that are surrounded by large blocks of State land. Most if not all, are State-selected lands for conveyance<sup>2</sup>. If these claims become null and void after the State's entitlement is fulfilled (the BLM would not be able to convey additional land to the State) or if the State declines to take a parcel, the claims would meet BLM's disposal criteria of being impractical or uneconomical to manage.

### Land Disposals

Several authorities to dispose of lands in Zones 2 and 3 would be used as described below:

**FLPMA Sales:** Public lands located in Zones 2 or Zone 3 that meet one or more of the following criteria may be disposed of by FLPMA Sales (43 CFR 2710.0–3):

1. A tract acquired for a specific purpose that is no longer required for that or any other federal purpose.
2. A tract whose disposal would serve important public objectives, such as expansion of communities and economic development, that cannot be prudently or feasibly achieved on other than public lands, and that outweighs other public objectives and values. Examples of those other public objectives and values, which would normally be used as justification to maintain such a tract in federal management, include (but are not limited) to recreation and scenic values.
3. A tract of land which, because of its location or other characteristics, is difficult and uneconomical to manage as part of the public lands, and is not suitable for management by another federal department or agency.

Note: Lands identified for disposal under this authority that are State- or Native-selected would have to be adjudicated before the BLM would entertain a sale. If these lands become unencumbered during the life of the plan, they would then be suitable for disposal under this authority and have been properly identified through the planning process.

<sup>2</sup>Land under valid federal claims cannot be conveyed.

Lands not to be disposed of, include:

1. Lands withdrawn from the public land laws or segregated by State- or Native-selection. Disposal can occur once the segregation is removed or if the withdrawal is modified or revoked.
2. Lands located within valid mining claims or that are of record under Section 314 of FLPMA would not be disposed of unless BLM policy is changed in the future to allow for their disposal. Lands with federal mining claims that become null and void may be disposed of.
3. Lands identified as land tenure Zone 1.

Reserved federal interests in split-estate lands anywhere in the planning area may be considered for conveyance out of federal management.

**Recreation and Public Purposes Act (R&PP) (43 U.S.C. 869 et seq.):** R&PP disposal would be considered on Zone 2 and 3 lands throughout the planning area in accordance with the following:

1. Lands identified for disposal under the Recreation and Public Purposes Act (R&PP) that are selected by either the State of Alaska or a Native corporation would have to be fully adjudicated before the BLM would entertain a sale. If these lands become unencumbered within the life of the plan, then they would be suitable for disposal under this authority.
2. In most instances, the BLM would first lease lands under this Act and only convey the lands after the project is constructed in compliance with an approved development and management plan. Tracts proposed as sanitary landfills would always be sold; they would not be leased.
3. Any lands conveyed under this act which are being used for solid waste disposal (sanitary landfill) or for any other purpose that the Authorized Officer determines may include the disposal, placement, or release of any hazardous substance (such as wastewater treatment facility, shooting range, firefighter training facility) would be conveyed with a limited reversion clause. The limited reversion clause will prohibit reversion to the federal government of any portion of the land if such portion has been used for solid waste disposal or for any other purpose that the Authorized Officer determines may include the disposal, placement, or release of any hazardous substance. With regard to such sites all provisions of 43 CFR 2743 shall be followed.

**Airport and Airway Improvement Act of September 3, 1982 (49 U.S.C. 2215):** The BLM would process airport conveyances as requested by the FAA. Each conveyance will contain appropriate covenants and reservation(s) requested by FAA. As a condition to each conveyance, the property interest conveyed will revert to the federal government in the event the lands are not developed for airport or airway purposes or are used in a manner inconsistent with the terms of the conveyance.

**Exchanges:** The BLM would consider mutually benefiting public interest land exchanges. Exchanges are authorized in Alaska by FLPMA (43 U.S.C. 1716), Section 22(f) of ANCSA, and Section 402(b) of ANILCA. When considering public interest, full consideration will be given to efficient management of public lands and to securing resource management objectives. Exchanges would not be actively sought out until State and Native entitlements are fulfilled.

### Land Acquisitions

When and where appropriate, lands may be acquired by purchase, exchange, or donation, from willing owners/sellers, to further the programs of the Secretary of the Interior. The BLM may acquire less than fee title to property if management goals can be achieved by doing so (43 CFR 2100 and BLM Acquisition Handbook H-2100-1). Acquisition of a conservation easement is an example of acquiring less than fee title.

Consider acquisition of land from willing sellers in Zone 1 areas (inholdings) and in Zone 2 areas for consolidation of land patterns (Maps 99 and 100). Specific acquisition needs are identified under each subunit.

### **2.6.3.3. Land Use Authorizations**

#### **GOALS:**

Meet public needs for land use authorizations (such as rights-of-way, leases, and permits) while minimizing adverse impacts to other resource values.

Prevent, control, and eliminate unauthorized use (trespass) on BLM-managed lands.

#### **DECISIONS:**

##### Leases

Allow FLPMA leases throughout the planning area, except where prohibited by law or public land order.

All FLPMA leases would be at fair market value. Cabins or permanent structures used for private recreation may not be authorized. Proposals for commercial use leases of cabins (such as guiding or trapping) would be considered.

R&PP leases would not be used for the purpose of authorizing solid waste disposal sites (sanitary landfills) or for any other purpose that the Authorized Officer determines may include the disposal, placement, or release of any hazardous substance (such as wastewater treatment facility, shooting range, firefighter training facility). Existing leases for solid waste disposal sites or other uses which the Authorized Officer determines may include the disposal, placement, or release of any hazardous substance should be converted to patents without a reversionary clause. R&PP lease proposals on selected land must include a letter of non-objection from the selecting entity. R&PP leases and disposal would be considered on Zone 2 and 3 lands.

##### Permits

Permits are used to authorize short-term occupancy, use, or development of a site under Section 302 of FLPMA (43 CFR 2920) or under ANILCA. Land use permits would be considered throughout the planning area with the following limitations:

1. Cabin or permanent structure permits are not issued for private recreation uses.
2. Cabins and other structures for commercial trapping would be authorized by short term (three year maximum) Section 302 permits renewable at the discretion of the Authorized Officer. The applicant must provide proof of substantial commercial trapping activity.

3. Authorization of structures within the Steese National Conservation Area, the White Mountains NRA, the Beaver Creek and Birch Creek WSR Corridors, and the Fortymile WSR Corridor would be issued in accordance with Sections 1310, 1303(b) and 1316 of ANILCA.
4. Permit authorizations on all other BLM-managed lands would be considered pursuant to Section 302 of FLPMA.
5. Military maneuver permits would be considered within the planning area except in the wild and scenic rivers, the Steese National Conservation Area, and the White Mountains NRA (Public Law 100-586).
6. Permits for administrative use of BLM-managed lands by the State of Alaska would be considered throughout the planning area.

### Unauthorized Use

Unauthorized use and/or unauthorized occupancy of the public lands (Trespass) will be addressed and resolved in accordance with the regulations found in 43 CFR 9220.1-2 and the guidance provided by BLM's Realty Trespass Abatement Handbook H-9232-1.

Trespass cabins may become the property of the U.S. Government and be managed as administrative sites, emergency shelters or public use cabins (BLM 1989b). Possible management actions on trespass cabins include:

1. Authorization by lease or permit for legitimate uses, if consistent with goals and objectives for the area.
2. Relinquishment to the U.S. for management purposes.
3. Removal of the structure.

### Rights-of-Way

Rights-of-way (ROWs) would be located near other rights-of-way or on already disturbed areas whenever practical and reasonable to do so.

Rights-of-way would be considered throughout the planning area. There are no rights-of-way exclusion areas in the planning area. Rights-of-way located within the Steese National Conservation Area, wild and scenic rivers, and the White Mountains NRA must be consistent with purposes for which the areas were designated. Notwithstanding any decision in this plan and in accordance with ANILCA Title XI, rights-of-way for Transportation or Utility Systems will be considered throughout the Conservation Systems Units, Steese National Conservation Area, and White Mountains NRA. Approval or disapproval of these rights-of-way will be consistent with the provisions of ANILCA Title XI and regulations found at 43 CFR 36. Rights-of-way authorizations on all other BLM-managed lands would be considered, and authorized under Title V of FLPMA in accordance with the regulations found in 43 CFR 2808.

Provide access to non-federally owned lands, including ACECs, adequate to secure the owner the reasonable use and enjoyment of such lands as required by section 1323(b) of ANILCA. Access across ACEC lands is not precluded by ACEC designation. Proposals for access across ACEC lands to private lands would be considered and evaluated on the basis of environmental impacts.

Allow for additional communication site development on public land to support resource development and ancillary needs. Consider communication site rights-of-way throughout the

planning area. Ensure coordination between existing and potential communication site users, and maximum utilization of existing sites (43 CFR 2800).

#### Authorizations for use of State- or Native-selected land

**Native-selected:** Prior to issuance of a use authorization, the views of the concerned Native region(s) or village(s) will be obtained and considered consistent with 43 CFR 2650.1. If the corporation objects to the proposal, the BLM may proceed with authorization only if the State Director determines that the proposal is deemed to be in the public's best interest. Monies received for any use authorization on Native-selected lands would go into an escrow account.

**State-selected:** In accordance with Section 906(k) of ANILCA, BLM must receive a letter of concurrence prior to issuance of any use authorization on State selected lands. BLM may then incorporate State-recommended terms and condition of the use authorization, if in compliance with federal laws and regulations. If the State objects, BLM would not issue the use authorization.

### 2.6.3.4. Renewable Energy

GOAL: Encourage the development of renewable energy sources consistent with other decisions in this plan and with the Energy Policy Act of 2005 and the BLM Energy and Mineral Policy (August 26, 2008).

#### DECISIONS:

Applications for wind energy, solar energy and biomass utilization activities would be considered. Small-scale renewable energy facilities used to provide energy to isolated locations would be considered throughout the planning area. Wind energy, solar energy, and biomass utilization activities would be authorized under the appropriate land use authorization (lease, right-of-way, or permit).

The following National Conservation Lands are not available for large-scale wind energy site testing, monitoring, and development:

- Beaver Creek WSR Corridor
- Birch Creek WSR Corridor
- Fortymile WSR Corridor
- Steese National Conservation Area

Should a Title XI application be received for large-scale wind energy projects in the areas listed above, BLM will consider alternatives locations consistent with the Title XI process.

Notwithstanding any decision in this plan and in accordance with ANILCA Title XI, rights-of-way for Transportation or Utility Systems will be considered throughout the National Wild and Scenic Rivers System, Steese National Conservation Area and White Mountains NRA, including NLCS units excluded from wind energy uses. Any approval or disapproval of these rights-of-way will be consistent with the provisions of ANILCA.

Small-scale renewable energy facilities would be considered in these areas if consistent with protecting the values for which the areas were designated. Small-scale facilities considered could include projects that provide energy to: BLM administrative sites, BLM recreation sites, private land inholdings, mine sites, and small communities (less than 250 residents). These projects

would consist of a few solar panels, a wood-fired boiler, or a few wind turbines and would not affect more than 100 acres per NLCS unit over the life of the RMP.

**RATIONALE:** BLM's Land Use Planning Handbook (BLM 2005a) requires the identification of existing and potential development areas for renewable energy projects (e.g., wind, solar, and biomass) consistent with the goals and objectives for natural resources in the planning area. The BLM describes criteria that must be met for economically feasible utility-scale solar, wind and biomass development in *Assessing the Potential for Renewable Energy on Public Lands* (BLM and DOE 2003). Although Alaska was not included in this report, we applied the criteria to lands in the planning area and determined that no lands met the criteria outlined in the assessment.

The primary criterion for commercial solar operations is a solar resource of at least 5 kWh/m<sup>2</sup>/day. This criteria is not met anywhere within the planning area (DOE 2008a and 2008b). Primary criteria for commercial biomass projects included a biomass power plant and a population center with a skilled labor force within 50 miles of the source of the biomass. These criteria cannot be met on BLM-managed lands in the planning area.

Primary criteria for utility-scale wind development include a wind power class 4 and above for short-term, and class 3 and above for long-term; transmission access within 25 miles; and road access within 50 miles. Within the planning area, wind potential on BLM-managed lands is generally poor to fair (Class 1–3). There are limited areas of Class 4–7 wind resources in the White Mountains NRA and Steese National Conservation Area (DOE 2006, wind energy map). However, most BLM lands are not within 25 miles of a major transmission line. Large-scale wind farms are connected to the electric power transmission network; small-scale facilities are used to provide electricity to isolated locations. It is unlikely that there would be any large-scale wind farms in the planning area. It is possible, however, that some small-scale facilities may be developed for BLM administrative use, or that the BLM may authorize small-scale facilities to promote energy to rural areas.

Geothermal leasing falls under the regulations for fluid leasable minerals and is addressed under section 2.6.3.5.1 Fluid Leasable Minerals.

## **2.6.3.5. Minerals**

### **2.6.3.5.1. Fluid Leasable Minerals**

#### **GOALS:**

The public lands and federal mineral estate would be made available for orderly and efficient exploration, development and production of fluid leasable mineral resources (includes oil, natural gas, tar sands, coal bed natural gas, and geothermal steam), unless withdrawal or other administrative action is justified in the national interest.

When authorizing fluid leasable minerals actions, to the extent possible, ensure that goals to protect other resource values in the planning area are met.

#### **DECISIONS:**

Fluid mineral (oil and gas, geothermal and coal bed natural gas) leasing and development would be considered in areas open to leasing, subject to additional NEPA analysis. Areas open to leasing are described for each subunit.

Fluid mineral leasing would be subject to BLM Lease Terms (standard lease terms), Fluid Mineral Leasing Stipulations, and SOPs (Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*).

In split-estate situations, requirements in Appendix A prescribed for federal mineral development apply only to the development of federal subsurface minerals because the BLM does not have authority over surface management requirements.

All open areas are open to geophysical exploration. Areas closed to fluid mineral leasing may be considered for geophysical exploration. Geophysical exploration activities are subject to SOPs (Appendix A).

### **2.6.3.5.2. Solid Leasable Minerals**

#### **GOALS:**

The public lands and federal mineral estate will be made available for orderly and efficient exploration, development, and production of solid leasable mineral resources (includes coal and oil shale) and non-energy leasable minerals (potassium, sodium, phosphate, and gilsonite), unless withdrawal is justified in the national interest.

When authorizing solid leasable minerals actions, to the extent possible, ensure that goals to protect other resource values in the planning area are met.

#### **DECISIONS:**

All areas closed to fluid mineral leasing would also be closed to leasing of solid leasable minerals; in areas open to fluid mineral leasing, solid leasable minerals (except for coal) would be leased subject to 43 CFR 3500. Leasing would be subject to BLM Lease Terms and SOPs (Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*).

All areas that are open to fluid mineral leasing would also be open to coal resource inventory and exploration. Areas closed to fluid mineral leasing may be considered for coal inventory and exploration. Leasing is deferred because the coal screening process (as identified by 43 CFR 3420.1-4) has not been completed in the planning area. If an application for a coal lease is received, the 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. An RMP amendment would be needed before coal leasing could occur. Only those BLM-managed public lands that have development potential may be identified as acceptable for further consideration for coal leasing.

If this RMP is amended to allow for coal leasing, develop an agreement between the State of Alaska and the Office of Surface Mining defining the regulatory role of the State in accordance with 30 CFR 745.

Oil shale could be leased in areas that are open to fluid mineral leasing; areas closed to fluid mineral leasing would also be closed to oil shale leasing. The Energy Policy Act of 2005 authorizes the Secretary of the Interior to conduct lease sales in states that show an interest. Leasing would be unlikely, as there are no known occurrences of oil shale on BLM lands in the planning area.

In split-estate situations, the SOPs (Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) apply only to the development of the federal subsurface minerals. The BLM does not have authority over surface management requirements.

### **2.6.3.5.3. Locatable Minerals**

#### **GOALS:**

Maintain or enhance opportunities for mineral exploration and development, while maintaining other resource values.

#### **DECISIONS:**

Mining of locatable minerals would be subject to the surface management regulations found in 43 CFR 3809, the SOPs (Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*), and other decisions in the Approved RMP. Surface occupancy under the mining laws would be subject to regulations contained in 43 CFR 3715. Bonding would be required in accordance with BLM's policy.

Mining-related disturbances would be rehabilitated, on active and inactive workings, as required by 43 CFR 3809 and in accordance with SOPs and BLM's policy.

All operations would require the filing of a Plan of Operations or Notice of Operations with the BLM (43 CFR 3809). Plans of Operation must be approved prior to commencement of on-the-ground activities. SOPs (Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) would be utilized to minimize surface impacts and to facilitate rehabilitation and revegetation of mined areas.

Isolated federal mining claims located outside of the White Mountains NRA, Steese National Conservation Area, wild and scenic river corridors, ACECs, and riparian conservation areas (approximately 13,000 acres in the Steese, Fortymile, and White Mountains subunits) would be recommended open to locatable minerals. If this recommendation is implemented by the Secretary of the Interior, it would remove the requirement for a mineral examination report prior to approving a new or modified plan of operation.

### **2.6.3.5.4. Salable Minerals**

#### **GOALS:**

Make lands, including federally administered surface/minerals and split-estate, available for mineral material disposal.

When authorizing salable minerals actions, to the extent possible, ensure that goals to protect other resource values in the planning area are met.

#### **DECISIONS:**

Mining of salable material would be subject to the Mineral Materials Disposal regulations found in 43 CFR 3600. Bonding would be required in accordance with BLM contract regulations.

Mineral material sales on selected lands would require concurrence of the potential, future landowner, and proceeds from the sale placed into escrow.

Free Use Permits would not be issued for resources on selected lands.

Material sales on un-certificated Native allotments would not be permitted (43 CFR 3601.12(b)).

Material sales on certificated Native allotments are the purview of the Bureau of Indian Affairs (BIA) and its successor agency.

Material sales on split-estate would require concurrence of the surface owner.

Mineral materials sales are not permitted on pre-1955 mining claims (Public Law 167) and are subject to non-interference with the mining operation on post-1955 mining claims.

### **2.6.3.6. Recreation**

#### **GOALS:**

Provide for multiple recreational uses of the public lands. This includes facilitating a wide range of beneficial outcomes by managing for desired recreational activities, settings and experiences. This helps support local economic stability, while sustaining recreation resources and other sensitive resource values.

#### **DECISIONS:**

Follow BLM program direction for managing recreation on public lands by incorporating “The BLM’s Priorities for Recreation and Visitor Services” (BLM 2003), BLM Manual 8320 Planning for Recreation and Visitor Services (BLM 2011), applicable sections of Appendix C of the Land Use Planning Handbook, and other BLM directives that are related to recreation management.

Land Use Planning decisions for Recreation and Visitor Services include:

- Designation of recreation management areas (RMAs)
- Establishment of recreation and visitor service objectives for each RMA
- Identification of land use planning level supporting management actions and allowable use decisions for each RMA.
- No recreational shooting within one-quarter mile of developed recreational facilities. This includes (but is not limited to) campgrounds, cabins, waysides, trailheads, and administrative sites.
- No recreational shooting on, from, or across the drivable surface of any trail, travel route, or travel way.

#### **Recreation Management Areas**

Designate Special Recreation Management Areas (SRMAs) and manage to protect and enhance a targeted set of activities, experiences, benefits and desired recreational setting characteristics. The SRMAs may be subdivide into Recreation Management Zones (RMZs) to further delineate specific recreation opportunities.

The SRMAs/RMZs must have measurable outcome-focused objectives. Supporting management actions and allowable use decisions are required to 1) sustain or enhance recreation objectives,

2) protect the desired recreation setting characteristics, and 3) constrain uses, including non-compatible recreation activities that are detrimental to meeting recreation or other critical resource objectives.

### **Management Actions**

Develop recreation area management plans for each SRMA which include monitoring and evaluation of visitor satisfaction, niche decisions, targeted outcomes, and setting character decisions, based on RMZ objectives and prescriptions for each RMZ (Appendix H, Recreation Management Zones), in accordance with BLM Manual 8320 (BLM 2011c) and other BLM guidelines.

On public lands that are not designated as a SRMA, recreation is not emphasized, but lands will be managed to meet basic recreation, visitor services, and resource stewardship needs. Special recreation permits would be issued if consistent with other resource uses. Administrative presence would be limited.

### **Implementation Level Management Actions**

Support events that emphasize collaborative outreach and public awareness to promote public stewardship, such as National Public Lands Day or National Trails Day. Utilize volunteer participation and recruit and train volunteers to provide effective visitor contact assistance.

Establish and maintain information kiosks with site maps, brochures, interpretive and educational information, important contacts, and site regulations. Develop and maintain a website of BLM recreation sites and areas that provide access information and available opportunities.

Establish comparable, cost-effective, and value-based fee systems for services and facilities provided to public users in accordance with BLM directives and the Federal Lands Recreation Enhancement Act.

Conduct periodic accessibility, safety, and condition assessments at developed recreation sites, and resolve deferred and corrective maintenance needs.

Establish, maintain and/or expand partnership agreements that are mutually beneficial to the BLM and to the public to enhance comprehensive planning, collaborative management, and collective funding.

Issue special recreation use permits according to BLM's 2930 Handbook.

BLM policy is to allow the safe use of public lands for recreational activities including the use of firearms for hunting and shooting sports, and trapping. Dispersed recreational use for trapping and shooting in a safe manner will be allowed, except as follows:

1. Trapping and placement of bait and wildlife lures (scents) is prohibited within one-quarter mile of any developed sites. This includes, but is not limited to: campgrounds, cabins, waysides, trailheads, and administrative sites without authorization. Trapping includes, but is not limited to, the use of marten pole sets, snares, conibear, or leg hold traps.
2. No one may set up a bear bait station within one-quarter mile of any publicly maintained road or trail.

The following table defines the desired Recreation Setting Character Matrix that applies to the planning area. Recreational Setting Characteristics (RSC) are descriptive conditions describing management parameters at the implementation level. These are implementation decisions, not land use planning level decisions, per H-8320-1.

Table 2.5. Recreation Setting Character Matrix for the Eastern Interior Planning Area

PHYSICAL - Resources and Facilities: Character of the Natural Landscape						
	<i>Primitive Classification</i>	<i>Semi-Primitive Classification</i>	<i>Backcountry Classification</i>	<i>Middlecountry Classification</i>	<i>Frontcountry Classification</i>	<i>Rural Classification</i>
<b>Remoteness</b>	Managed for an extremely high probability of experiencing solitude, closeness to nature, tranquility, self reliance, challenge, and risk.	Managed for a very high probability of experiencing solitude, closeness to nature, tranquility, self reliance, challenge, and risk.	Managed for a high probability of experiencing solitude, closeness to nature, tranquility, self reliance, challenge, and risk.	Managed for a moderate probability of experiencing solitude, closeness to nature, and tranquility. Managed for a moderate degree of challenge and risk associated with the use of motorized equipment.	Managed for the opportunity to affiliate with other users in developed sites but with some chance for privacy. Little challenge and risk. On or near improved trails or roads.	Managed for the opportunity to observe and affiliate with other users in areas where convenience of facilities is important. On or near primary highways, but still within a rural area.
<b>Naturalness</b>	Protect an undisturbed or rehabilitated naturally-appearing landscape.	Provide a naturally-appearing landscape with a low level of modifications noticeable.	Provide a predominately naturally-appearing landscape with a low level of modifications noticeable, none of which dominate the natural landscape features.	Provide for a generally natural landscape partially modified by roads, pipelines, etc., with usually none dominating natural landscape features.	Provide for a relatively natural landscape partially modified by roads, pipelines, etc., which may dominate natural landscape features.	Provide for a landscape substantially modified by structures and roads that usually dominate natural landscape features.
<b>Visitor Facilities</b>	Maintain minimal rustic and rudimentary facilities that are constructed for site protection using natural materials and are designed to blend with the surrounding landscape.	Maintain rustic and rudimentary facilities that are generally constructed using natural materials, and are designed to blend with the surrounding landscape.	Maintain some naturally appearing trails and facilities, such as cabins, bridges and signs for user convenience, which usually blend with the surrounding landscape.	Maintain marked trails with associated trailheads and facilities including cabins, toilets, parking areas and garbage collection, which generally blend with the surrounding landscape.	Maintain improved yet modest facilities such as campgrounds, toilets, trails, and interpretive signs, which could attract attention.	Maintain modern facilities such as developed campgrounds, group shelters, and exhibits, which generally attract attention.

<b>SOCIAL – Visitor Use and Users: Character of the Social Environment</b>						
	<i>Primitive Classification</i>	<i>Semi-Primitive Classification</i>	<i>Backcountry Classification</i>	<i>Middlecountry Classification</i>	<i>Frontcountry Classification</i>	<i>Rural Classification</i>
<b>Contacts (with other group)</b>	Average number of contacts per day usually fewer than three groups.	Average number contacts per day usually fewer than four groups.	Average number contacts per day usually fewer than seven groups.	Average number contacts per day usually fewer than 10 groups.	People are generally visible at campsites, but are usually distant enough to prevent interactions.	People seem to be prevalent, but human contact is still intermittent.
<b>Group Size</b>	Manage for a majority of group sizes that usually average fewer than three people per group.	Manage for a majority of group sizes that usually average fewer than four people per group.	Manage for a majority of group sizes that usually average fewer than seven people per group.	Manage for a majority of group sizes that usually average fewer than 10 people per group.	Manage for a majority of group sizes that usually average fewer than 12 people per group.	Manage for a majority of group sizes that usually average fewer than 15 people per group.
<b>Evidence of Use</b>	Only footprints are typically observed.	Footprints plus slight vegetation trampling at campsites and on travel routes. Winter snow trails and/or tracks may be present.	Winter snow trails and/or tracks may be present, but generally blend with the surrounding landscape. OHV routes may be present.	Some landscape alternations are present but generally repeat the basic elements of the surrounding landscape. Surface vegetation may show wear with some bare soils.	Landscape alterations are generally present and may attract attention. Well-worn soils and vegetation may be present. Travel routes often gravel surfaced for erosion control.	Landscape alterations are present and attract attention. Improved routes protect soils and vegetation, but noise, litter, and facility impacts are possible.

**ADMINISTRATIVE – Administrative and Service Setting: Character of the Operational Environment**

	<i>Primitive Classification</i>	<i>Semi-Primitive Classification</i>	<i>Backcountry Classification</i>	<i>Middlecountry Classification</i>	<i>Frontcountry Classification</i>	<i>Rural Classification</i>
<b>Motorized Use</b>	No trails or trailheads managed for motorized activities. Snowmobile and other means of surface transportation, motorboat, and aircraft activity permissible through ANILCA 1110(a) and 811.. Restrictions may apply in Research Natural Areas.	No trails or trailheads managed for motorized activities. Snowmobile and other means of surface transportation, motorboat, and aircraft activity permissible through ANILCA 1110(a) and 811.	Various forms of use may be present but not substantially noticeable. Winter trails maintained for snowmobile use.	Four-wheel drives, all-terrain vehicles, motorboats, snowmobiles and aircraft uses are common, in addition to non-motorized use.	Two-wheel drive vehicle use is predominate on developed roads and highways, encounters will be regular. Trails and trailheads managed to accommodate summer and winter OHV use.	Car and truck traffic is characteristic and will be encountered on a regular basis. Trails and trailheads managed to accommodate summer and winter OHV use.
<b>Management Controls</b>	No visitor controls apparent. Enforcement presence very rare.	Signs at key access points on basic user ethics. Use restrictions may be present. Enforcement presence rare.	Occasional regulatory signing. Motorized and mechanized use restrictions are usually in place. Random enforcement presence.	Moderate regulatory signing. Motorized and mechanized use restrictions are usually in place. Periodic enforcement presence.	Rules clearly posted with common seasonal or weight/type of OHV use restrictions. Routine enforcement presence.	Regulations prominent. Total use can be limited by permit, reservation, etc., Significant enforcement presence may exist.
<b>Visitor Services</b>	None are typically available on-site.	Basic maps and area personnel are rarely available to provide on-site assistance.	Basic maps and area personnel are occasionally available to provide on-site assistance.	Area brochures and maps, plus area personnel are periodically present to provide on-site assistance. May have information and interpretation available.	Information materials describe recreation areas and activities. Area personnel are sometimes available.	Everything described to the left in this row, plus area personnel perform informal on-site education.

### 2.6.3.7. Travel Management

#### GOAL:

Provide opportunities for a range of motorized and non-motorized uses on public lands while protecting resources and minimizing conflicts among various users.

#### DECISIONS:

Designate all BLM-managed lands as Open, Limited, or Closed to motorized travel activities(43 CFR 8340.0-5(f), (g) and (h)).

Open: "...an area where all types of vehicle use is permitted at all times, anywhere in the area subject to the operating regulations and vehicle standards set forth in subparts 8341 and 8342..."

Limited: "...an area restricted at certain times, in certain areas, and/or to certain vehicular use. These restrictions may be of any type, but can generally be accommodated within the following type of categories: Numbers of vehicles; types of vehicles; time or season of vehicle use; permitted or licensed use only; use on existing roads and trails; use on designated roads and trails; and other restrictions."

Closed: "...an area where off-road vehicle use is prohibited. Use of off-road vehicles in closed areas may be allowed for certain reasons; however, such use shall be made only with the approval of the Authorized Officer. In closed areas, a permit for motorized use may be issued pursuant to FLPMA, ANILCA, the 1872 Mining Law, and other applicable laws.

The following would be exempt from OHV decisions: any fire, military, emergency, or law enforcement vehicle used for emergency purposes; and any vehicle whose use is expressly authorized by the Authorized Officer, or otherwise officially approved (43 CFR 8340.0-5).

Manage OHV use in accordance with BLM's National Management Strategy for Motorized Off-Highway Vehicle Use (BLM 2001a). Manage bicycle and other mechanized uses consistent with BLM's National Mountain Bicycling Strategic Action Plan (BLM 2002a) or their successors.

BLM Back Country Byways and National Recreation Trails may be designated in the future, as deemed appropriate, with site-specific environmental analysis.

Where off-road vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historic resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence. (43 CFR 8341.2)

Public land routes, roads or trails determined to cause considerable adverse impacts or to constitute a nuisance or threat to public safety would be considered for relocation or closure and rehabilitation after appropriate coordination with applicable agencies and partners.

Where authorized, construction of roads or trails may occur in support of mining, rights-of-way, and recreational facilities.

When an alternative identifies a deferred travel management plan, limitations imposed by travel management planning may include: vehicle weight, vehicle width, season of use, existing trails,

designated trails, permitted access, and game retrieval options. Travel management plans would be developed using a public process, allowing for additional public and agency input. This process will include publishing a *Federal Register* Notice, public scoping meetings and if any closures are proposed, a formal hearing to address the closure procedures under 43 CFR 36.11 (h) as well as limitations affecting ANICLA provisions listed in Title VIII and Title XI. Additional NEPA analysis would be completed at that time.

R.S. 2477 rights are determined through a process that is entirely independent of the BLM's planning process. Consequently, travel management planning should not take into consideration R.S. 2477 assertions or evidence. Travel management planning should be founded on an independently determined purpose and need that is based on resource uses and associated access to public lands and waters. At such time as a decision is made on R.S. 2477 assertions, the BLM will adjust its travel routes accordingly.

**RATIONALE:** Recreational OHV use is resulting in resource damage such as trail braiding, user-created trails, damage to vegetation, erosion, thermokarsting, changes in vegetation composition, and spread of non-native invasive plants. Limiting the use of OHVs by weight, seasonal closure, and/or to designated routes are nationally accepted methods for protecting resources from damage by OHV use. Interior Alaska is a fragile landscape with seasonally frozen ground and permafrost making summer use of OHVs difficult. Traveling on ice-rich permafrost areas causes thawing, ground degradation and vegetation damage.

### 2.6.3.8. Withdrawals

#### GOAL:

Where the BLM determines withdrawals from the public lands laws are not necessary, those lands would be open to the public land laws.

#### DECISIONS:

In areas this RMP recommends open to locatable mineral entry, recommend to the Secretary of the Interior to partially revoke ANCSA 17(d)(1) withdrawals to open the land to the mining laws. In areas this RMP recommends closed to locatable mineral entry, recommend to the Secretary to retain the ANCSA 17(d)(1) withdrawals until a new withdrawal under the authority of FLPMA can be put into place for the purposes of protecting sensitive resources. Recommended new withdrawals under FLPMA would only withdraw lands from locatable mineral entry and location. These withdrawals would have no effect on validly selected lands. (Appendix G)

Modify or partially revoke ANCSA 17(d)(1) withdrawals to open isolated federal mining claims (federal mining claims surrounded by State land that cannot be conveyed) located outside of the White Mountains NRA, Steese National Conservation Area, wild and scenic river corridors, ACECs, and riparian conservation areas (approximately 13,000 acres) to mineral location and entry.

Recommend retaining federal agency withdrawals (e.g., NOAA, military, GSA, FAA) until no longer required by the agency. Regulations in 43 CFR 2370 and following will govern the process for an agency to relinquish lands or interest in lands, in whole or in part, when no longer needed. Once an agency has filed a completed notice of intent to relinquish to the BLM and appropriate General Services Administration (GSA) regional office the BLM will follow the appropriate regulations and the Authorized Officer will make a determination as to suitability

of the lands or interest in lands for return to the public domain. If the lands or interest in lands are determined suitable for return to the public domain the Authorized Officer will notify the holding agency that the Department of the Interior accepts accountability and responsibility for the property in accordance with procedures found in 43 CFR 2374. If the lands or interest in lands are determined to be unsuitable for return to the public domain the Authorized Officer will request concurrence from the appropriate officer of the GSA and upon receipt of the concurrence will notify the holding agency to report as excess property the lands and improvements or interest in lands to the General Service Administration in accordance with procedures found in 43 CFR 2374. (Table 3.36, “Existing Withdrawals to Other Agencies in the Planning Area”).

## 2.6.4. Special Designations

### 2.6.4.1. Wild and Scenic Rivers

#### GOALS:

Protect outstandingly remarkable river-related values, water quality, and free-flowing condition of rivers designated as a component of the National Wild and Scenic Rivers System.

#### DECISIONS:

Follow guidance provided by the Interagency Wild and Scenic Rivers Coordination Council at <http://www.rivers.gov/council.html>.

Manage all suitable and designated rivers according to BLM Manual 6400 – Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation and Management and ANILCA.

Manage suitable and designated rivers to protect and enhance the Outstandingly Remarkable Values and free-flowing condition, and maintain the river’s classification.

Develop a Comprehensive River Management Plan for each new river, if applicable, within three years of designation to provide for the protection of the river values. The plan will address resource protection, development of lands and facilities, user capacities, and other management practices necessary or desirable to achieve the purposes of the Wild and Scenic Rivers Act.

Establish boundaries for each new river, if applicable, within one year from the date of designation. Boundaries will include an average of not more than 640 acres of land per mile measured from the ordinary high water mark on both sides of the river.

Identified Outstandingly Remarkable Values (ORVs) for the Fortymile, Birch Creek and Beaver Creek WSRs are described in detail in Appendix E, *Wild and Scenic Rivers Inventory*.

River	Tributaries	Outstandingly Remarkable Values
Beaver Creek	N/A	scenic, recreation, geologic, fisheries, and wildlife
Birch Creek	N/A	scenic, recreation, and fisheries

River	Tributaries	Outstandingly Remarkable Values
Fortymile River	Main Stem, Lower North Fork, and South Fork	scenic, recreation, geologic, historic, wildlife
	Dennison Fork and Middle Fork	scenic, recreation, wildlife
	Upper North Fork	scenic, historic, wildlife
	Mosquito Fork and West Fork	scenic, recreation
	Champion Creek	scenic, historic
	Wade Creek	recreation, historic
	O'Brien Creek and Walker Fork	scenic, geologic
	Franklin Creek, Hutchinson Creek, Napoleon Creek, and Uhler Creek	historic
	Joseph Creek and Logging Cabin Creek	scenic

Revise or amend the existing River Management Plans (Fortymile, Birch Creek, and Beaver Creek) to incorporate resource protection decisions from the appropriate ROD, and to address development of lands and facilities, user capacities, and other management practices necessary or desirable to achieve the purposes of the Wild and Scenic Rivers Act.

Rivers suitable for designation under the Wild and Scenic Rivers Act of 1968 are discussed under each subunit. See Appendix E, *Wild and Scenic Rivers Inventory* for a description of the methods used to determine eligibility and suitability, and a description of Outstandingly Remarkable Values for each eligible river, and a list of suitable rivers (Table E.3, "Classification Findings for Eligible Rivers").

## 2.6.5. Social and Economic

### 2.6.5.1. Hazardous Materials

#### GOAL:

Protect public health and safety and environmental resources by minimizing environmental contamination from chemical, biological, and radiological sources on federal property or BLM-operated facilities.

#### DECISIONS:

Environmental remediation activities would follow the State of Alaska and federal environment regulations and laws, which outline the cleanup standards for contaminated sites. Clean up levels/standards may be implemented based on the future land use determination.

The SOPs (Appendix A *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) would apply to BLM-authorized activities to minimize the probability of contamination on public lands when hazardous materials are utilized.

The BLM would educate permittees on the importance of developing site-specific best management practices (BMP), that minimize the potential for release of hazardous materials to the environment.

The BLM would monitor land use activities to identify potential contaminated sites as an integral part of maintaining healthy lands. Cleanup actions would be designed to limit and reduce the environmental liabilities for the BLM.

## 2.6.5.2. Subsistence

### GOALS:

Maintain sufficient quality and quantity of habitat to support healthy populations of important subsistence species, including moose and caribou.

Effectively manage subsistence resources and uses by working with the local Regional Advisory Councils, ADF&G, and subsistence users. Implementation of a “rural priority” would be made by the Regional Advisory Council and Federal Subsistence Board through regulations, in coordination with federal and State land and wildlife management agencies. Agencies, including the BLM, would aid in enforcing the priority for rural subsistence use on federal public lands.

Provide for reasonable access to subsistence resources by federally qualified subsistence users as directed in ANILCA.

Minimize displacement of subsistence resources from traditional subsistence harvest areas (i.e., displacement of resources that may occur as a result of activities permitted by the BLM).

Maintain consistent subsistence management with adjacent land managers/owners.

### DECISIONS:

At the project or permitting level, develop measures that serve to minimize impacts to subsistence uses, users, and/or resources. This may include avoidance of specific areas or limitations on season of use.

Protect important Fortymile caribou herd and White Mountains caribou herd calving and post-calving areas by restricting land use activities during times caribou are present (see sections 2.6.2.13 Wildlife, 2.7.2 Action Alternatives Fortymile Subunit, 2.8.2 Action Alternatives Steese Subunit, 2.10.2 Action Alternatives White Mountains, and SOPs Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*).

Implement the SOPs and Fluid Mineral Leasing Stipulations (Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) to assure that physical and legal access to and movement corridors for subsistence resources are maintained when activities are permitted and to minimize displacement of subsistence resources.

Comply with ANILCA Section 810 Evaluation and Finding during analysis of all land use proposals. The management of federal public lands is to cause the least adverse impact possible on rural residents who depend on subsistence uses of the resources of such lands (Section 802 of ANILCA).

Require infrastructure (such as roads, power lines, other ROW, buildings, pipelines, towers) be constructed in a manner that it does not unreasonably impede access to subsistence resources. Restrict development of infrastructure or land disturbance in areas of high subsistence resource values or traditional harvest areas, where these activities would significantly restrict access by subsistence users. Review subsistence decisions in land use plans for adjacent lands and coordinate with the respective land managers and ADF&G when proposed land use actions may affect those lands.

Note: Additional decisions that may affect subsistence uses and resources are in section 2.6.2.3 Fish and Aquatic Species, section 2.6.2.13 Wildlife, Appendix I *Fisheries and Aquatic Resources* and Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*.

## **2.7. Fortymile Subunit**

The goals and decisions in the following sections apply to the Fortymile Subunit.

### **2.7.1. Alternative A: No Action Alternative**

Under the No Action Alternative, management in the Fortymile Subunit is guided by the Fortymile Management Framework Plan (BLM 1980) and the Fortymile River Management Plan (BLM 1983a). Current management based on these plans and federal laws and regulations, is summarized in the following sections. A more complete description of current management decisions can be found in the Analysis of the Management Situation, Eastern Interior Resource Management Plan (BLM 2009).

#### **2.7.1.1. Resources**

##### **2.7.1.1.1. Cultural and Paleontological Resources**

In the Fortymile subunit, current management for cultural resources is guided by federal regulations and decisions in the Fortymile MFP (BLM 1980) and Fortymile River Management Plan (BLM 1983a). The BLM conducts Class II and III cultural resource inventories as needed, and maintains an inventory of known sites on BLM-managed lands. Effects to cultural resources are addressed on a project-specific basis and mitigation developed to reduce or avoid impacts. Fort Egbert Historic Site is monitored and maintained regularly. Interpretation and public education are provided by the Eagle Historical Society and Museums. Some limited maintenance of historic cabins on the Fortymile River is done.

Other than Fort Egbert Historic Site, cultural sites have not been allocated for scientific use, conservation for future use, traditional use, public use, or experimental use as required by the BLM Land Use Planning Handbook (BLM 2005a).

Paleontological resources are managed according to BLM's 8270 manual and handbook, Title VI, Subtitle D of the Omnibus Public Land Management Act of 2009 (16 U.S.C. 470aaa), and other applicable federal laws (e.g., FLPMA). These allow for the issuance of paleontological permits to qualified parties.

##### **2.7.1.1.2. Fish and Aquatic Species**

In the Fortymile Subunit, the BLM considers actions which will affect fish habitat, and develops appropriate measures for each action to reduce impacts to fish. Screens, consistent with mesh size requirements recommended by the ADF&G, are installed on intake hoses when water is taken from under ice or from open water locations. Stream crossings are designed to conform with fish passage requirements. Measures to protect stream banks are applied at the project level. Human-caused disturbances are evaluated and stipulations are applied to minimize disturbance. The BLM coordinates with Alaska Department of Environmental Conservation (ADEC) on all

proposed activities which involve discharges into surface waters to ensure that BLM-authorized activities do not exceed State of Alaska Water Quality Standards.

### **2.7.1.1.3. Soil Resources**

Measures to reduce erosion are applied on a project-specific basis. Limitations are placed on use of vehicles to protect soil and vegetation. All areas remain open to winter use (ground frozen to six inches) for vehicles 6,000 pounds or less. Existing roads and trails are open to all vehicles when the ground is frozen to a depth of six inches or more. At all other times of the year, vehicles exceeding 6,000 pounds or any vehicle with a blade, requires a permit. Vehicles weighing 6,000 pounds or less are limited to existing roads or trails, except for incidental use (such as to locate camp spots or retrieve downed game animals).

### **2.7.1.1.4. Special Status Species**

The BLM considers effects to Special Status Species for each proposed activity. To the extent possible, surface-disturbing activities are limited in areas containing Special Status Species. There are currently no federally listed species in this subunit. The BLM conducts inventories for Special Status Species as time and funding allows. Intensive inventories of peregrine falcon nesting have been conducted in some portions of the Fortymile River. Some inventories of selected sites for Special Status Species have been conducted (Batten et al. 1979), although most of these sites are no longer under BLM's management.

### **2.7.1.1.5. Visual Resource Management**

The Fortymile MFP (BLM 1980) does not address visual resource management (VRM). There are currently no assigned VRM classes. The “wild” segments of the Fortymile WSR Corridor are managed as VRM Class I in accordance with policy. All projects are reviewed for impacts to scenic quality and visual resources.

### **2.7.1.1.6. Water**

Effects to water and riparian habitats from proposed activities are considered at the project level and appropriate measures are developed to reduce impacts in accordance with policy, Executive Orders, and federal law. The BLM coordinates with ADEC to ensure that water quality standards are not exceeded. The BLM participates in stream gauging and monitors snow course sites in the Fortymile area.

### **2.7.1.1.7. Wildland Fire Ecology and Management**

Guidance for wildland fire management is provided by the BLM Alaska Land Use Plan Amendment for Wildland Fire and Fuels Management (BLM 2004b, 2005c). The decisions are described under section 2.6.2.12 Wildland Fire Ecology and Management, Management Common to All Subunits and Action Alternatives.

### **2.7.1.1.8. Wildlife**

The Fortymile MFP (BLM 1980) identified and recognized sensitive areas important for Dall sheep, caribou, moose, bison, waterfowl, shorebirds, sharp-tailed grouse, raptors, grizzly bears, and other species. It recommended the development of habitat management plans for these areas in cooperation and consultation with ADF&G; no habitat management plans have been developed. Additionally, many of the areas identified for habitat management plans have been conveyed out of BLM management or are not located in the planning area.

Effects to wildlife habitats from proposed activities are considered at the project level and appropriate measures are developed to reduce impacts. Camping requirements concerning things such as garbage disposal, fencing are developed to reduce wildlife and human conflicts.

Mineral licks are recognized as an important habitat for ungulates. Currently, all ungulate mineral licks on BLM-managed lands are withdrawn from mineral entry.

No domestic livestock grazing is authorized on Dall sheep ranges. No reindeer grazing is allowed on any caribou ranges.

The Fortymile MFP (BLM 1980) recommended proceeding with ACEC designation if the nature of the sensitive habitat areas and/or species is such that ACEC designation is considered appropriate. No ACECs have been designated in the Fortymile Subunit, because designation is a land use plan decision and no land use plan has been developed for the Fortymile region since approval of the MFP.

### **2.7.1.2. Resource Uses**

#### **2.7.1.2.1. Forest and Woodland Products**

The BLM considers applications for forest and timber products on a project-specific basis. Personal use firewood harvest is authorized under Free Use Permits. No areas are specifically set aside for firewood harvest. No forest inventory has been done due to the lack of demand for timber products.

#### **2.7.1.2.2. Lands and Realty**

Permits for land use authorizations are considered when applications are received. There are no designated utility corridors or right-of-way avoidance areas. No lands are specifically identified for disposal or acquisition. The Eagle recreational withdrawal is withdrawn under PLO 3432. Land status in the Fortymile Subunit has changed greatly since the Fortymile MFP (BLM 1980) was approved. Many of the lands identified for specific management in the MFP have been conveyed to either the State of Alaska or Native corporations. Easements have been proposed and approved as land is conveyed. Clean up of the Eagle Dump and Tanacross Fire Guard Station sites are in progress. Long-term camping in support of nearby state mining claims is allowed by permit in the "scenic" and "recreational" segments of the Fortymile WSR.

### **2.7.1.2.3. Minerals**

The entire Fortymile Subunit is withdrawn from mineral entry and mineral leasing under ANCSA 17(d)(1) withdrawals. Mining is occurring on valid existing claims that predate the withdrawals. Material sites are authorized to provide for construction and maintenance of roads and highways.

### **2.7.1.2.4. Recreation**

In the Fortymile Subunit, the Eastern Interior Field Office follows BLM program direction for managing recreation on public lands. Recreation management is focused on the Fortymile WSR Corridor and the Eagle area. The river corridor is managed to preserve river values.

The BLM provides public outreach in a variety of ways; including the establishment and maintenance of information kiosks; maintenance of a website; and use of volunteers to provide visitor contact assistance. Interpretive sites have been established at Fort Egbert Historic Site and along the Taylor Highway. Brochures have been developed and are available at multiple locations.

The BLM issues special recreation use permits as appropriate for commercial, competitive, and special events.

Established campgrounds and waysides are maintained. Periodic accessibility, safety, and condition assessments are conducted at developed recreation sites, and available funds are prioritized to resolve maintenance needs.

### **2.7.1.2.5. Travel Management**

#### Fortymile WSR Corridor

No vehicular traffic is allowed off established trails in the corridor. The use of motorized vehicles exceeding 1,500 pounds gross vehicle weight rating (GVWR) is prohibited off of established and maintained roads (BLM 1994).

The following restrictions/authorizations on surface transportation are included in the Fortymile River Management Plan (BLM 1983a):

Action 1.1: New transportation and utility systems, and relocations of existing roads may be authorized in the "scenic" and "recreational" segments of the corridor if there is no reasonable alternative route available.

Action 1.2: New public road rights-of-way and other authorizations for transportation and utility systems may be authorized in the "wild" segments of the river corridor if three conditions are met: 1) such system would be compatible with the purposes for which the unit was established; 2) there is no economically feasible and prudent alternative route for the system; and 3) authorization would be in the public interest.

Action 1.3: Access to federal mining claims located prior to ANILCA will be managed under existing regulations in 43 CFR 3809.

Action 1.5: Off-road vehicle use, other than vehicles of less than 1,500 pounds GVWR, will be prohibited without a permit or approved Plan of Operations.

Action 1.6: Existing use of motorized boats on “scenic” and “recreational” segments will be allowed without specific authorization. Motorized boats will not be allowed on non-navigable “wild” segments except under the provisions of 43 CFR 3809. On navigable “wild” segments, a cooperative agreement with the State will be sought to limit the use of motorized boats.

Actions 2.1–3: The BLM will not undertake maintenance of existing airstrips. New airstrips may be authorized in accordance with Actions 1.1, 1.2, and 1.3. Existing use of gravel bars and winter snows by aircraft will be allowed subject to reasonable provisions to protect the values of the WSR.

### Remainder of the Fortymile Subunit

No OHV designations are in place. Watershed decision 3.2 in the Fortymile MFP states: All areas will remain open to winter use (ground frozen to six inches) for vehicles weighing 6,000 pounds or less. Existing roads and trails will be open to all vehicles when the ground is frozen to a depth of six inches or more. At all other times of the year, vehicles exceeding 6,000 pounds require a permit, and vehicles weighing 6,000 pounds or less will be limited to existing roads or trails except for incidental use. The existing trail network has never been defined.

#### **2.7.1.2.6. Withdrawals**

The entire subunit is closed to locatable mineral entry and mineral leasing by ANCSA 17(d)(1) withdrawal. The primary public land orders (PLOs) affecting this subunit are PLO 5173, 5179, and 5184. There are approximately 10,000 acres of valid existing federal mining claims that predate the PLOs and ANILCA. Mining is occurring on some of these claims. There are numerous other withdrawals for federal other agencies. Existing withdrawals are described in section 3.3.8 Withdrawals.

#### **2.7.1.3. Special Designations**

The Fortymile WSR was designated by ANILCA and is managed consistent with the Fortymile River Management Plan (BLM 1983a). Restrictions on travel management are described in section 2.7.1.2.5 Travel Management above. The “wild” segments of the river corridor are managed as VRM Class I. The river corridor is withdrawn from mineral entry and mineral leasing, except for valid existing claims. No additional rivers would be recommended as suitable for designation under the Wild and Scenic Rivers Act.

Two eligible river segments in the Fortymile subunit have been identified in the Wild and Scenic Rivers Classification Findings for Eligible Rivers (Table E.3). Dome Creek is found to have characteristics eligible for a tentative classification of Recreational and Gold Run is found to have characteristics eligible for a tentative classification of Wild. These rivers segment classifications would be maintained through mitigation standards through NEPA review until suitability can be evaluated.

There are no designated areas of critical environmental concern or research natural areas.

## 2.7.2. Action Alternatives: Fortymile Subunit

### 2.7.2.1. Alternative B: Fortymile Subunit

The decisions in the following sections apply to Alternative B in the Fortymile Subunit.

#### 2.7.2.1.1. Resources

##### 2.7.2.1.1.1. Cultural Resources

###### DECISIONS:

In addition to the decisions Common To All Subunits listed in section 2.6.2.2 Cultural Resources, the following decisions would apply under Alternative B:

The following sites are designated as suitable for public use: Fort Egbert Historic Site (EAG-001); Steele Creek Community (EAG-144); Longbar Cabin (EAG-097); Kink Cabin (EAG-093); Discovery Cabin (EAG-192); Flat Creek Cabin (EAG-190); North Forks WAMCATS (EAG-157); and Franklin Community (EAG-003).

The following sites are designated for traditional use: BLM Firestation Site (EAG-070), Walker Fork Grave (EAG-212/340), and Joseph Village and Cemetery (EAG-010).

All other sites not specifically identified above shall be designated for scientific use.

##### 2.7.2.1.1.2. Fish and Aquatic Species

###### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.2.3 the following decisions would apply under Alternative B:

The following 10 watersheds would be managed as Riparian Conservation Areas (RCAs) (Map 6).

1. Buck Creek-North Fork Fortymile River (HUC # 190401040306)
2. Fortymile River (HUC # 190401042201)
3. Hilda Creek-North Fork Fortymile River (HUC # 190401040806)
4. Middle Fork North Fork Fortymile River (HUC # 190401040701)
5. Moose Creek-Mosquito Fork (HUC # 190401041305)
6. North Fork Fortymile River (HUC # 190401040308)
7. Seward Creek-Mission Creek (HUC # 190404010105)
8. South Fork Fortymile River (HUC # 190401042006)
9. The Kink-North Fork Fortymile River (HUC # 190401040803)
10. Tower Bluffs Rapids (HUC # 190405030602)

The Sam Patch Creek-Fortymile River watershed (HUC # 190401042207) and Steele Creek-Fortymile River watershed (190401042203) would be identified as a High Priority Restoration Watershed and be emphasized for active restoration. Management of High Priority Restoration Watersheds is described in section 2.6.2.3 Fish and Aquatic Species (Map 6).

Complete watershed assessments prior to opening lands to locatable mineral location and entry to gather baseline information using the following priorities:

1. Watersheds containing areas of high or moderate locatable mineral potential.
2. Watersheds identified as RCAs.
3. Other watersheds.

### 2.7.2.1.1.3. Visual Resources

#### DECISIONS:

Proposed VRM classes are displayed on Map 15. Recreation Management Zones (RMZs) are displayed on Map 44. Areas where wilderness characteristics would be maintained are displayed on Map 70.

#### DECISIONS:

Under Alternative B the “wild” segments of the Fortymile River would be designated a VRM Class I per BLM Manual 8400. Management of VRM Class I areas is to preserve the existing characteristics of the landscape, but allow for limited management activities where changes should be very low and must not attract the attention of the casual observer.

“Scenic” river segments would be assigned a VRM Class II. “Scenic” segments would be managed in a largely primitive and undeveloped manner with the presence of small communities or dispersed dwellings acceptable. The shorelines should appear natural from the riverbank. (BLM Manual 6400–3.3, Illustration 2).

“Recreational” river segments (Wade Creek segment) would be designated a VRM Class III. “Recreational” segments would be managed in a manner allowing some development of residential and few commercial structures and substantial evidence of human activity including a full range of agricultural and forestry uses. (BLM Manual 6400–3.3, Illustration 2). Some screening of facilities would protect the visual quality of the area.

Those portions of the Fortymile SRMA within the North Fork Fortymile, Mosquito Fork, Fortymile, West Fork and Chicken RMZs with an RSC class of Semi-Primitive, Backcountry and Middlecountry, but outside the Fortymile WSR Corridor would be managed as VRM Class II. In VRM Class II areas, developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with minor changes to landform and vegetation.

Lands to be managed for wilderness characteristics outside of the WSR corridor (Fortymile ACEC and portions of the North Fork Fortymile, Mosquito Fork, West Fork, and Fortymile RMZs) would also be managed as a VRM Class II.

Those portions of the Fortymile SRMA within the Wade Creek and Eagle RMZs with an RSC class of Frontcountry and Rural, but outside the Fortymile WSR Corridor (Davis Dome) would be managed as VRM Class III. In VRM Class III areas, developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with moderate changes to landform and vegetation and may attract the attention of the casual observer.

All remaining BLM lands would be assigned a VRM Class IV. In these areas, management actions would be taken to protect the wild and scenic river view shed. Development activities would be designed to harmonize with the visually dominating elements of the surrounding landscape characteristics of line, form, color and texture, and major modification of the natural landscape would be allowed.

#### **2.7.2.1.1.4. Wilderness Characteristics**

##### **OBJECTIVE:**

Allow for multiple use while maintaining naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on 949,000 acres so that these lands retain their wilderness characteristics for the life of the RMP.

##### **DECISIONS:**

Consistent with allocation decisions in this RMP, allow other multiple-uses on lands where wilderness characteristics would be maintained, while applying management restrictions (such as conditions of use or mitigation measures) to avoid or minimize impacts to wilderness characteristics and meet the objective retaining wilderness characteristics over the life of the RMP.

Wilderness characteristics would be maintained on 949,000 acres (51 percent of the lands with wilderness characteristics in this subunit). These lands occur within the Fortymile ACEC , Fortymile SRMA, and segments of the Fortymile WSR (Map 70).

**RATIONALE:** Wilderness characteristics would be maintained by decisions in this alternative to designate ACECs, close certain areas to mineral leasing and mining, retain the lands in federal management, manage for Semi-Primitive and Backcountry recreation settings, and set a Limited OHV area designation. Additionally, BLM-authorized uses would be further analyzed through the NEPA process for impacts to size, naturalness, primitive recreation, and solitude, and stipulated mitigation measures would be applied where needed to minimize impacts. Due to the limited access to many BLM lands in the Fortymile Subunit and the lack of mineral development potential, it is likely that wilderness characteristics would remain on much more than 49 percent of the lands over the life of the plan.

#### **2.7.2.1.1.5. Wildlife**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.2.13, the following decision would apply under Alternative B:

Domestic sheep, goats, and camelids (including alpaca & llama) are not allowed in Dall sheep habitat.

#### **2.7.2.1.2. Resource Uses**

##### **2.7.2.1.2.1. Forest and Woodland Products**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.1, the following decisions would apply under Alternative B:

Personal use of timber would be allowed on all lands, except within the Fortymile WSR Corridor, the Eagle Recreational withdrawal, and the Fort Egbert Historic Site.

Commercial timber salvage sales would be allowed on all lands, except within the Fortymile WSR Corridor, the Eagle Recreational withdrawal, and the Fort Egbert Historic Site.

Commercial timber sales (large or small) would be allowed on all lands, except within the Fortymile WSR Corridor, the Eagle Recreational withdrawal, and the Fort Egbert Historic Site.

Commercial use of forest products (i.e., mushrooms, berries, bark) would be allowed on all lands, except within the Fortymile WSR Corridor, the Eagle Recreational withdrawal, and the Fort Egbert Historic Site.

### 2.7.2.1.2.2. Land Tenure

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.2, the following decisions would apply under Alternative B. The criteria for land tenure zones is described in Appendix G, *Land Tenure*.

#### Zone 1 lands (lands identified for retention or acquisition):

Lands within the Fortymile WSR Corridor and the Fortymile ACEC (Map 60) would be retained subject to conveyance of validly selected lands to the State and Native corporations.

Consider acquisition of private land inholdings from willing sellers within areas identified as Zone 1, including land surrounded on three sides by the Fortymile WSR Corridor.

#### Zone 2 lands (all lands not identified as Zone 1 or 3):

Consider acquisition, or disposal, including exchange, of scattered parcels within the Fortymile Subunit for the purposes of consolidation.

#### Zone 3 lands (lands identified for disposal):

Consider the following lands for disposal. If needed, modify existing public land orders to allow for disposal.

- Scattered parcels within the North Star Borough and along the Alaska Highway;
- East of Salcha Hot Springs site (PLO 5389);
- Tanacross airfield parcel (PLO 1768);
- Remnants of PLO 5150 (TAPs), north and east of the Alaska Highway;
- Federal, School and Park Reserves (Delta Junction), USS 3293, Blocks 14, 15, 16, 17, 18, 19;
- Recommend retaining PLO 1613, Alaska Highway ROW width reduction, and make the remaining lots available for disposal;
- If federal mining claims outside of the Fortymile WSR Corridor and outside of large blocks of BLM-managed lands become null and void and are not conveyed to the State of Alaska, consider these lands for disposal or exchange.

### **2.7.2.1.2.3. Land Use Authorizations**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.3, Land Use Authorizations, the following decisions would apply under Alternative B:

#### **DECISIONS:**

Do not allow long-term camping in support of nearby state mining claims in the “wild,” “scenic,” or “recreational” segments of the Fortymile WSR Corridor.

The Fortymile WSR Corridor and Fortymile ACEC would be ROW avoidance areas.

### **2.7.2.1.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals.

#### **2.7.2.1.2.4.1. Fluid Leasable Minerals**

#### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.1, the following decisions would apply under Alternative B:

Approximately 1,076,000 acres in the following areas would be closed to fluid leasable minerals (Map 26):

- The Fortymile WSR Corridor (all segments)
- The Fortymile ACEC
- The Fortymile SRMA
- Within one mile of identified ungulate mineral licks
- Zone 3 disposal land
- BLM's Chicken and Eagle administrative sites, Fort Egbert Historic Site, and the Eagle Recreational withdrawal.

The remainder of the subunit, approximately 800,000 acres, would be open to leasing, subject to Standard Lease Terms.

#### **2.7.2.1.2.4.2. Solid Leasable Minerals**

#### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.2, the following decisions would apply under Alternative B:

The same areas that are closed to fluid leasable minerals, approximately 1,076,000 acres, would also be closed to solid leasable minerals (Map 26).

The remainder of the subunit, approximately 800,000 acres, would be open to leasing, subject to standard leasing stipulations.

### 2.7.2.1.2.4.3. Locatable Minerals

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.3, the following decisions would apply under Alternative B:

The same areas that are closed to fluid leasable minerals, approximately 1,076,000 acres, would also be closed to locatable minerals (Map 26).

All remaining lands in the Fortymile Subunit, approximately 800,000 acres, would be open to locatable mineral entry.

### 2.7.2.1.2.4.4. Salable Minerals

#### DECISIONS:

In addition to the decisions listed as common to all alternatives in section 2.6.3.5.4, the following decisions would apply under Alternative B:

Approximately 251,000 acres in the following areas would be closed to salable minerals:

- The “wild” and “scenic” segments of the Fortymile WSR Corridor
- Within one mile of ungulate mineral licks

All remaining lands in the Fortymile Subunit, approximately 1,625,000 acres, would be open to salable minerals.

### 2.7.2.1.2.5. Recreation

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.6, the following decisions would apply:

The Fortymile SRMA would include 798,000 acres of lands located within the Fortymile WSR Corridor, lands surrounding the town of Eagle, and additional lands adjacent to the river corridor (Map 44). Under Alternative B, the Fortymile SRMA would include seven Recreation Management Zones (RMZ), the management of which are described in Section H.1, “Fortymile Special Recreation Management Area”.

**Table 2.6. Fortymile Recreation Management Zones, Recreation Setting Character (RSC), and OHV Designations, Alternative B**

Name	Acres	RSC <sup>a b</sup>	OHV Designation
North Fork Fortymile RMZ	546,000	Semi-Primitive	LIMITED
Mosquito Fork RMZ	80,000	Semi-Primitive	LIMITED
Fortymile RMZ	142,000	Backcountry	LIMITED
West Fork Fortymile RMZ	20,000	Backcountry	LIMITED
Wade Creek RMZ	3,000	Frontcountry	LIMITED
Chicken RMZ	7,000	Middlecountry	LIMITED

Name	Acres	RSC <sup>a b</sup>	OHV Designation
Eagle RMZ	1,000	Rural	LIMITED
Other BLM lands	1,077,000	N/A	LIMITED

<sup>a</sup>Table 2.5

<sup>b</sup>RSC are descriptive conditions describing management parameters at the implementation level. These are not land use planning decisions

### 2.7.2.1.2.6. Travel Management

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative B.

#### DECISIONS:

Under this alternative, the entire Fortymile Subunit would be delineated as a Travel Management Area. For lands within the SRMA, specific Travel Management Zones (TMZs) have also been delineated. These are the same polygons as the Recreation Management Zones (RMZs) and subsequent recreation setting character (RSC) settings. Each TMZ also contains a specific OHV designation of Open, Limited, or Closed (Table 2.6, "Fortymile Recreation Management Zones, Recreation Setting Character (RSC), and OHV Designations, Alternative B").

It is not practical to define and delineate a comprehensive travel management network for the Fortymile Subunit in this plan due to incomplete route data, size, and the complexity of the area. A map of preliminary (existing) routes (Map 44) and the following interim management prescriptions would be utilized until a Comprehensive Travel Management Plan is completed.

The additional data needed to complete a comprehensive travel management network is accurate route information. This would be accomplished utilizing a combination of methods, including overflights and on-the-ground GPS data acquisition. Once the ROD is issued for the Fortymile Subunit, additional data would be collected and a Comprehensive Travel Management Plan completed, utilizing interagency and public collaboration.

The OHV prescriptions vary by Recreation Management Zone and are described more fully below.

#### Interim Travel Management Prescriptions Common to All Lands

All forms of non-motorized use would be allowed, except for the use of pack goats in Dall Sheep habitat.

Cross-country winter use (October 15 through April 30) of snowmobiles 50 inches or less in width, and weighing 1,000 pounds curb weight and less would be allowed.

Aircraft use would be unrestricted, with the following provisions: Minimal clearing of rocks, downed logs, and brush would be allowed; construction or formal improvement of landing areas would occur by permit only; Use of gravel bars and winter snow areas would be allowed, subject to reasonable provisions to protect the values of the "wild", "scenic" and "recreational" river segments.

Additional restrictions could be developed for the purposes of site protection, visitor safety, and/or enhancing recreational opportunities, experiences and outcomes.

#### Wild and Scenic River Corridors, including Suitable River Segments

All forms of non-motorized use would be allowed. Motorboat use would be allowed without specific authorization consistent with ANILCA sections 1110(a) and 811. Airboats, hovercraft, and personal watercraft would not be permitted in the following non-navigable river segments: the North Fork above the Kink, the Middle Fork, Champion Creek, Joseph Creek, Mosquito Fork above Ingle Creek, and Gold Run suitable segment.

**RATIONALE:** The Wild and Scenic Rivers Act states that rivers classified as “wild” are generally inaccessible except by trail, and are to represent vestiges of primitive America (Wild and Scenic Rivers Act, Section 2). The Middle Fork of the Fortymile WSR has outstandingly remarkable recreational values. One of the available recreational opportunities is a Primitive, non-motorized boating experience. Airboats, hovercraft and personal watercraft generate noise levels which are disruptive to some recreationists and would diminish the Semi-Primitive experience managed for and expected by those recreationists on a “wild” river. These types of use are not considered compatible with the values for which the “wild” river is to be managed.

The Middle Fork and North Fork support a dense nesting population of American peregrine falcons. Motorboat activity can result in some level of disturbance of certain wildlife species and result in a corresponding level of avoidance of the river’s edge. This may, to some extent, result in effective loss of habitat. While ANILCA Section 1110(a) and 811 permit the use of motorboats, prohibiting the use of hovercraft, airboats, and personal watercraft would protect and enhance the outstandingly remarkable recreation values in the Middle Fork and wildlife values (nesting peregrine falcons) in both the North Fork and Middle Fork.

All of the river segments listed above would be managed for a Semi-Primitive recreational opportunity, which focuses on non-motorized experiences. Prohibiting hovercraft, airboats, and personal watercraft would help maintain the Semi-Primitive setting in these areas and would reduce disturbance to wildlife.

#### Interim Travel Management Prescriptions for all Semi-Primitive Zones

Same as Management Common to All Lands, with the following addition: A permit or approved Plan of Operations would be required for all other OHV use, including ATVs.

#### Interim Travel Management Prescriptions for Backcountry, Middlecountry, Frontcountry, Rural Zones, and Other BLM lands outside of the SRMA

Same as Management Common to All Lands, with the following additions:

Summer use (May 1 through October 14) of OHVs 64 inches or less in width, and weighing 1,500 pounds curb weight and less would be allowed on existing routes only (Map 44)).

A permit or approved Plan of Operations would be required for all other OHV use (new user-created routes and cross-country travel off existing routes would not be allowed).

**RATIONALE:** Limiting the use of OHVs would help maintain the appropriate recreational setting. Additionally, it would reduce impacts to soil, water, vegetation, fish, and wildlife.

### **2.7.2.1.2.7. Withdrawals**

#### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.8, the following decisions would apply under Alternative B:

Recommend retaining BLM administrative site withdrawals, including PLO 753, Eagle administrative site (12.23 acres); PLO 1699, Chicken administrative site (11.35 acres); and, PLO 3943, West Fork and South Fork recreation sites (120 acres).

Recommend retaining PLO 3432, the Eagle Recreational withdrawal (816 acres).

Approximately 1,064,000 acres would be closed to locatable mineral entry in the following areas:

- The entire Fortymile ACEC to protect caribou calving/postcalving and Dall sheep habitats;
- Within one mile of the ungulate mineral lick (T. 26N., R. 19E., C.R.M.) to protect important wildlife habitat;
- The “wild,” “recreational,” and “scenic” segments of the Fortymile WSR, to include any lands within the river corridor that are not withdrawn under ANILCA and the WSR Act, for the purposes of protecting the water quality and Outstandingly Remarkable Values of the river;
- The Fortymile SRMA to maintain Primitive and Semi-Primitive recreational opportunity settings.

Land tenure Zone 3 lands (Appendix G, *Land Tenure*) will be closed to mineral leasing and location to prevent encumbrance. As needed, recommend modification of public land orders to allow for disposal of these parcels while keeping them closed to mineral entry and mineral leasing.

### **2.7.2.1.3. Special Designations**

#### **2.7.2.1.3.1. Areas of Critical Environmental Concern**

##### DECISIONS:

Under Alternative B, approximately 690,000 acres would be designated as the Fortymile ACEC (Map 60) to protect relevant and important values, which are general caribou calving and postcalving habitat for the Fortymile caribou herd and Dall Sheep habitat. Of this, 386,000 acres are in process of conveyance or are State-selected lands or high priority Doyon, Limited—selected lands and will likely be conveyed and 56,000 acres are within Fortymile River Corridor.

The entire ACEC would remain closed to entry, location, and leasing of minerals subject to valid existing rights. A mining Plan of Operations would be required on any mining activity within an ACEC (43 CFR 3809.11(c)(3)).

Ungulate mineral licks: Within a distance of one mile of designated ungulate mineral licks, limit all permitted uses and development of facilities for permitted uses, from May 10 through August 31 to activities which would not reduce ungulate use of licks.

Allowed uses would be managed to maintain caribou and Dall sheep habitat. The area is and would remain generally free of summer motorized vehicle use (May 1 through October 14 sheep habitat; May 10 through July 15 remainder). (For example, summer motorized vehicle use, in the areas of the ACEC where allowed, would be restricted to a limited set of routes.) In locations where motorized vehicle trails are currently established, motorized vehicle use would be limited to select existing trails or routes (or designated trails when travel management plan is completed). In RMZs where motorized use is compatible (and OHV trail construction and other development may be planned), manage the area to maintain its value as caribou and Dall sheep habitat as well

as to meet the RSC objectives for that RMZ; designated trails or routes and other developments may be established if limited in density and compatible with caribou and Dall sheep habitat.

Winter motorized use in Dall sheep habitat is currently minimal, but would be monitored and, if use begins to approach a level which may result in altered distribution of Dall sheep, such use may be restricted in the future through alteration of maintained trails or, if necessary, closures of limited areas and/or time periods.

### SUMMARY OF MANAGEMENT IN THE ACEC

The following is a summary of other management decisions that would apply within the Fortymile ACEC. See Appendix C, *Evaluation of ACEC Nominations* for an evaluation of ACEC nominations.

No salable mineral disposal would be authorized within one mile of ungulate mineral licks (Map 26). Subject to pending conveyance to the State and Native corporations, the ACEC would be retained in federal land status and would be a right-of-way avoidance area. Land use permits and leases would be considered, subject to constraints for ungulate mineral licks. Standard Operating Procedures (Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) would apply to activities requiring a permit from the BLM.

A full description of the OHV limitations can be found in section 2.7.2.1.2.6 Travel Management. A summary follows:

- The OHV designation is Limited.
- The ACEC includes lands within the Fortymile SRMA and portions of the Fortymile WSR;
- Limitations on motorized use varies among these areas.
- In general, cross-country winter use (October 15 through April 30) would be allowed for snowmobiles weighing 1,000 pounds curb weight and less.
- Aircraft use would be unrestricted.
- Summer use of OHVs would either be excluded in Semi-Primitive RMZ or limited to existing routes on remaining lands.

#### **2.7.2.1.3.2. Wild and Scenic Rivers**

##### DECISIONS:

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

Outstandingly remarkable values for the Fortymile WSR include scenic, recreation, geologic, historic, and wildlife. Specific ORVs are identified by river segment in Appendix E, *Wild and Scenic Rivers Inventory*.

Under Alternative B, two eligible river segments, Gold Run and Dome Creek, (Map 70) would be recommended as suitable for designation according to their eligibility class.

River Name	Classification	Outstandingly Remarkable Values	Miles
Dome Creek	"recreational"	historic	5
Gold Run	"wild"	historic	4

RATIONALE: Dome Creek and Gold Run Creek are free-flowing and possess at least one outstandingly remarkable value as described in Section E.1.1, “Determining Eligibility”. All eligible rivers would be recommended as suitable for designation in at least one alternative for the purpose of analysis.

### **2.7.2.2. Alternative C: Fortymile Subunit**

The decisions in the following sections apply to Alternative C in the Fortymile Subunit.

#### **2.7.2.2.1. Resources**

##### **2.7.2.2.1.1. Cultural Resources**

DECISION:

Same as Alternative B.

##### **2.7.2.2.1.2. Fish and Aquatic Species**

DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.2.3, the following decisions would apply under Alternative C:

The Tower Bluffs Rapids (HUC # 190405030602) watershed would be identified as a RCA (Map 7, “Conservation and Restoration Watersheds – Fortymile Subunit, Alternatives C and D”).

The Sam Patch Creek-Fortymile River (HUC # 190401042207) and Steele Creek-Fortymile River watershed (190401042203) would be identified as a High Priority Restoration Watershed and be emphasized for active restoration. Management of High Priority Restoration Watersheds is described in section 2.6.2.3 Fish and Aquatic Species.

Complete watershed assessments Section I.5, “Watershed Assessment Process” as necessary for management.

##### **2.7.2.2.1.3. Visual Resources**

DECISIONS:

Proposed VRM classes for Alternative C are displayed on Map 16. Recreation Management Zones are displayed on Map 45. Areas where wilderness characteristics would be maintained are displayed on Map 71.

The “wild” segments of the Fortymile River would be assigned a VRM Class I and the “scenic” segments would be assigned a VRM Class II, as described under Alternative B.

“Recreational” river segments (Wade Creek segment) would be assigned a VRM Class IV. “Recreational” segments of the Fortymile River would be managed so that there is no substantial adverse effect on the river and its immediate environment (Manual 6400). Large-scale facilities may be established in proximity to the river.

Areas managed for wilderness characteristics associated with the Dennison Fork “scenic” segment and the core area of the Fortymile ACEC outside the river corridor would be assigned a VRM Class II to help maintain wilderness characteristics.

All remaining BLM-managed lands not within the Fortymile WSR Corridor would be assigned a VRM Class IV. This includes the Eagle RMZ with a RSC Class of Rural. Management actions would be taken to protect the wild and scenic river view shed. Development activities would be designed to harmonize with the visually dominating elements of the surrounding landscape characteristics of line, form, color and texture, but would allow major modification of the natural landscape.

#### **2.7.2.2.1.4. Wilderness Characteristics**

**OBJECTIVE:** Allow for multiple use while maintaining naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on 494,000 acres so that these lands retain their wilderness characteristics for the life of the RMP.

#### **DECISIONS:**

Consistent with allocation decisions in the RMP, allow other multiple-uses on lands where wilderness characteristics would be maintained, while applying management restrictions (such as conditions of use or mitigation measures) to avoid or minimize impacts to wilderness characteristics and meet the objective retaining wilderness characteristics over the life of the RMP.

Wilderness characteristics would be maintained on 494,000 acres (26 percent of the lands with wilderness characteristics in this subunit). These lands occur within the Fortymile “wild” river segments that do not contain mining claims or have been determined to be non-navigable, in the Dennison Fork “scenic segment”, and in the core of the Fortymile ACEC (Map 71).

**RATIONALE:** Wilderness characteristics would be maintained by decisions in this alternative to designate ACECs, close certain areas to mineral leasing and mining, retain the lands in federal management, manage for Semi-Primitive and Backcountry recreation settings, and set OHV designations. Additionally, BLM-authorized uses would be further analyzed through the NEPA process for impacts to size, naturalness, primitive recreation, and solitude, and stipulated mitigation measures would be applied where needed to minimize impacts. Due to the limited access to many BLM lands in the Fortymile Subunit and the lack of mineral development potential, it is likely that wilderness characteristics would remain on much more than 24 percent of the lands over the life of the plan.

#### **2.7.2.2.1.5. Wildlife**

#### **DECISIONS:**

See section 2.6.2.13 Wildlife Management Common to All Subunits.

#### **2.7.2.2.2. Resource Uses**

##### **2.7.2.2.2.1. Forest and Woodland Products**

#### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.1, the following decisions would apply under Alternative C:

Personal use of timber would be allowed on all lands, except within the “wild” segments of the Fortymile WSR, Eagle Recreational withdrawal, and Fort Egbert Historic Site.

Commercial timber salvage sales would be allowed on all lands.

Commercial timber sales (large and small) would be allowed on all lands, except within the Fortymile WSR Corridor, Eagle Recreational withdrawal, and Fort Egbert Historic Site.

Commercial use of forest products would be allowed on all lands, except within the “wild” segments of the Fortymile WSR Corridor, Eagle Recreational withdrawal, and Fort Egbert Historic Site.

#### **2.7.2.2.2.2. Land Tenure**

DECISIONS:

Same as Alternative B.

#### **2.7.2.2.2.3. Land Use Authorizations**

DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.3, the following decisions would apply under Alternative C:

Long-term camping in the Fortymile WSR Corridor would be authorized by permit. Allow long-term camping in support of nearby state mining claims in the “scenic” and “recreational” segments of the Fortymile WSR, but not the “wild” segment. This is the same as Alternative A. There would be no right-of-way avoidance areas.

#### **2.7.2.2.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals.

##### **2.7.2.2.2.4.1. Fluid Leasable Minerals**

DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.1, the following decisions would apply under Alternative C:

Approximately 623,000 acres in the following areas would be closed to fluid leasable minerals (Map 27):

- The Fortymile WSR Corridor (all segments)
- The Fortymile SRMA (same as the WSR corridor)
- Core caribou habitat in the Fortymile ACEC (central portion of the ACEC only)
- Zone 3 disposal lands

- BLM's Chicken and Eagle administrative sites, Fort Egbert Historic Site, and the Eagle Recreational withdrawal.

Approximately 155,000 acres would be open to fluid mineral leasing subject to minor constraints, including the remainder of the Fortymile ACEC outside of the core calving area.

The remainder of the subunit, approximately 1,098,000 acres, would be open to leasing, subject to Standard Lease Terms.

No surface occupancy would be allowed within one-half mile of identified ungulate mineral licks that are located in open areas.

#### **2.7.2.2.4.2. Solid Leasable Minerals**

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.2, the following decisions would apply under Alternative C:

The same areas that are closed to fluid leasable minerals, approximately 623,000 acres, would also be closed to solid leasable minerals (Map 27).

Approximately 155,000 acres would be open to fluid mineral leasing, subject to minor constraints, including the remainder of the Fortymile ACEC outside of the core calving area.

The remainder of the subunit, approximately 1,098,000 acres, would be open to leasing, subject to standard leasing stipulations.

No surface occupancy would be allowed within one-half mile of identified ungulate mineral licks that are located in open areas.

#### **2.7.2.2.4.3. Locatable Minerals**

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.3, the following decisions would apply under Alternative C:

Approximately 623,000 acres in the following areas would be closed to locatable mineral entry (Map 28):

- The Fortymile WSR Corridor (all segments)
- The Fortymile SRMA (same as the WSR corridor)
- Core caribou habitat within the Fortymile ACEC (central part of the ACEC only)
- Within one mile of identified ungulate mineral licks
- Zone 3 disposal lands
- BLM's Chicken and Eagle administrative sites, Fort Egbert Historic Site, and the Eagle Recreational Withdrawal.

All remaining lands in the Fortymile Subunit, approximately 1,253,000 acres, would be open to locatable mineral entry.

#### 2.7.2.2.2.4.4. Salable Minerals

##### DECISIONS:

Same as Alternative B.

#### 2.7.2.2.2.5. Recreation

##### DECISIONS:

In addition to the decisions Common To All Subunits listed in section 2.6.3.6, the following decisions would apply under Alternative C:

##### Recreation Management Areas

The Fortymile SRMA would include approximately 248,000 acres of lands located within the Fortymile WSR Corridor and lands surrounding the town of Eagle. Under this alternative, the Fortymile SRMA would include nine Recreation Management Zones (RMZs) displayed in Table 2.7, “Fortymile Recreation Management Zones, RSC Settings, and OHV Designations, Alternative C” the management of which is described in Section H.1.2, “Fortymile Alternative C”.

**Table 2.7. Fortymile Recreation Management Zones, RSC Settings, and OHV Designations, Alternative C**

Name	Acres	RSC Setting <sup>ab</sup>	OHV Designation
Middle Fork Fortymile RMZ	125,000	Semi-Primitive	LIMITED
Mosquito Fork RMZ	19,000	Semi-Primitive	LIMITED
Fortymile RMZ	69,000	Backcountry	LIMITED
West Fork Fortymile RMZ	13,000	Backcountry	LIMITED
Logging Cabin Creek RMZ	7,000	Middlecountry	LIMITED
O'Brien Creek RMZ	4,000	Middlecountry	LIMITED
Wade Creek RMZ	3,000	Frontcountry	LIMITED
Chicken RMZ	7,000	Frontcountry	LIMITED
Eagle RMZ	1,000	Rural	LIMITED
Other BLM lands	1,628,000	N/A	LIMITED

<sup>a</sup>Table 2.5

<sup>b</sup>RSC are descriptive conditions describing management parameters at the implementation level. These are not land use planning decisions

#### 2.7.2.2.2.6. Travel Management

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative C.

##### DECISIONS:

Alternative C is very similar to Alternative B. The primary differences are in the location and size of the Recreation Management Zones and an allowance for off-route travel for game retrieval.

The table above describes the Recreation Management Zones in the Fortymile SRMA under Alternative C (Map 45). Under this alternative, the SRMA only includes the Fortymile WSR Corridor and lands surrounding the Davis Dome and the town of Eagle. The OHV prescriptions vary by Recreation Management Zone and are described more fully below.

### Interim Travel Management Prescriptions Common to All Lands

All forms of non-motorized use would be allowed.

Cross-country winter use (October 15 through April 30) of snowmobiles 50 inches or less in width, and weighing 1,000 pounds curb weight and less would be allowed.

Aircraft use would be unrestricted, with the following provisions: Minimal clearing of rocks, downed logs, and brush would be allowed; construction or formal improvement of landing areas would occur by permit only; and use of gravel bars and winter snow areas would be allowed, subject to reasonable provisions to protect the values of the “wild,” “scenic,” and “recreational” river segments.

Additional restrictions could be developed for the purposes of site protection, visitor safety, and/or enhancing recreational opportunities, experiences and outcomes.

### Wild and Scenic River Corridors

All forms of non-motorized use would be allowed. Motorboat use would be allowed without specific authorization consistent with ANILCA Sections 1110(a) and 811. Airboats, hovercraft, and personal watercraft would not be permitted in the following non-navigable river segments: the North Fork above the Kink, the Middle Fork, Champion Creek, Joseph Creek, and Mosquito Fork above Ingle Creek.

RATIONALE: The Wild and Scenic Rivers Act states that rivers classified as “wild” are generally inaccessible except by trail, and are to represent vestiges of primitive America (Wild and Scenic Rivers Act, Section 2). The Middle Fork of the Fortymile WSR has outstandingly remarkable recreational values. One of the available recreational opportunities is a Primitive, non-motorized boating experience. Airboats, hovercraft and personal watercraft generate noise levels which are disruptive to some recreationists and would diminish the Semi-Primitive experience managed for and expected by those recreationists on a “wild” river. These types of use are not considered compatible with the values for which the “wild” river is to be managed.

The Middle Fork and North Fork support a dense nesting population of American peregrine falcons. Motorboat activity can result in some level of disturbance of certain wildlife species and result in a corresponding level of avoidance of the river’s edge. This may, to some extent, result in effective loss of habitat. While ANILCA Section 1110(a) and 811 permit the use of motorboats, prohibiting the use of hovercraft, airboats, and personal watercraft would protect and enhance the outstandingly remarkable recreation values in the Middle Fork and wildlife values (nesting peregrine falcons) in both the North Fork and Middle Fork.

All of the river segments listed above would be managed for a Semi-Primitive recreational opportunity, which focuses on non-motorized experiences. Prohibiting hovercraft, airboats, and personal watercraft would help maintain the Semi-Primitive setting in these areas and would reduce disturbance to wildlife.

### Interim Travel Management Prescriptions for All Semi-Primitive Zones

Same as Management Common to All Lands, with the following addition: A permit or approved Plan of Operations would be required for all summer OHV use, including ATVs.

Interim Travel Management Prescriptions for All Backcountry, Middlecountry, Frontcountry, Rural Zones and Other BLM lands Outside the SRMA

Same as Management Common to All Lands, with the following additions:

Summer use (May 1 through October 14) of OHVs 64 inches or less in width, and weighing 1,500 pounds curb weight and less would be allowed on existing routes only, except for game retrieval (Map 45).

A permit or approved Plan of Operations would be required for all other OHV use (new user-created routes and cross-country travel off existing routes would not be allowed).

**RATIONALE:** Limiting the use of OHVs by weight, seasonal closure, and/or to existing routes would help maintain the appropriate recreational setting. Additionally, it would reduce impacts to soil, water, vegetation, fish, and wildlife. Allowing for off-route travel by ATV for game retrieval would somewhat increase impacts to natural resources but would provide additional opportunity for motorized assisted hunting.

#### **2.7.2.2.2.7. Withdrawals**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.8, the following decisions would apply under Alternative C:

Recommend retaining BLM administrative site withdrawals, including PLO 753, Eagle administrative site (12.23 acres); PLO 1699, Chicken administrative site (11.35 acres); and, PLO 3943 West Fork and South Fork recreation sites (120 acres).

Recommend modifying PLO 3432 (816 acres) to allow for expansion of Eagle Gravel Pit.

Review the status of the Fort Egbert parcel. If it is not withdrawn, recommend a new FLPMA withdrawal to protect the historic structures and values on the parcel.

Approximately 610,000 acres would be closed to locatable mineral entry in the following areas:

- Core caribou habitat within the Fortymile ACEC to protect caribou calving/postcalving and Dall sheep habitat;
- Within one mile of the ungulate mineral lick (CRM, T. 26N., R. 19E.) to protect important wildlife habitat;
- The “wild,” “recreational,” and “scenic” segments of the Fortymile WSR, to include any lands within the river corridor that are not withdrawn under ANILCA and the WSR Act, for the purposes of protecting the water quality and Outstandingly Remarkable Values of the river;

Land tenure Zone 3 lands (Appendix G, *Land Tenure*) will be closed to mineral leasing and location to prevent encumbrance. As needed, recommend modification of public land orders to allow for disposal of these parcels while keeping them closed to mineral entry and mineral leasing.

### 2.7.2.2.3. Special Designations

#### 2.7.2.2.3.1. Areas of Critical Environmental Concern

##### DECISIONS:

Under Alternative C, approximately 554,000 acres would be designated as the Fortymile ACEC (Map 61) to protect relevant and important values, which are concentrated caribou calving and postcalving habitat for the Fortymile caribou herd and Dall sheep habitat. Of this, 265,000 acres are in the process of conveyance or are State-selected lands or high priority Doyon, Limited-selected lands that will likely be conveyed. Approximately 38,000 acres are within the Fortymile WSR Corridor.

Only a portion of this acreage (core calving/postcalving habitat and ungulate mineral licks, 369,000 acres) would be closed to entry, location and leasing of minerals subject to valid existing rights. A mining Plan of Operations would be required on any mining activity within an ACEC (43 CFR 3809.11(c)(3)). Lands within one mile of ungulate mineral licks outside of the core area of the ACEC are open to fluid leasable minerals subject to no surface occupancy, and closed to locatable mineral entry.

Ungulate mineral licks: Within a distance of one mile of designated ungulate mineral licks, limit all permitted uses and development of facilities for permitted uses, from May 10 through August 31 to activities which would not reduce ungulate use of licks.

Allowed uses would be managed to maintain caribou and Dall sheep habitat. Within delineated sheep habitat and core caribou calving/postcalving habitat and within one mile of ungulate mineral licks, management intent would be the same as Alternative B for minerals management and travel management. Outside of delineated core calving/postcalving habitat, areas except for ungulate mineral licks would be open to locatable mineral entry subject to SOPs and open to leasables subject to minor constraints. Seasonal activity restrictions would apply within the ACEC (Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) and operators must submit a plan describing methods proposed to minimize impacts to caribou and Dall sheep and their habitat.

#### SUMMARY OF MANAGEMENT IN THE ACEC

The following is a summary of other management decisions that would apply within the ACEC. See Appendix C, *Evaluation of ACEC Nominations* for an evaluation of ACEC nominations.

No salable mineral disposal would be authorized within one mile of ungulate mineral licks. Subject to pending conveyance to the State and Native corporations, the ACEC would be retained in federal land status. Land use permits, rights-of-way, and leases would be considered, subject to constraints for ungulate mineral licks. Standard Operating Procedures (Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) would apply to activities requiring a permit from BLM.

A full description of the OHV limitations can be found in section 2.7.2.2.2.6 Travel Management. A summary follows:

- The OHV designation is Limited.
- The ACEC includes lands within the Fortymile SRMA (same as the Fortymile WSR Corridor);
- Limitation on motorized use varies among these areas.

- In general, cross-country winter use (October 15 through April 30) would be allowed for snowmobiles weighing 1,000 pounds curb weight and less.
- Use of aircraft would be unrestricted.
- Summer use of OHVs would either be excluded in Semi-Primitive Zones or limited to existing routes on remaining lands.
- Travel off existing routes would be allowed for game retrieval.

### **2.7.2.2.3.2. Wild and Scenic Rivers**

#### DECISIONS:

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

Outstandingly remarkable values for the Fortymile WSR include scenic, recreation, geologic, historic, and wildlife. Specific ORVs are identified by river segment in Appendix E.

Under Alternative C, no rivers would be recommended as suitable for designation under the Wild and Scenic Rivers Act in the Fortymile Subunit.

RATIONALE: Dome Creek possesses outstandingly remarkable historic values in that it exemplifies small-scale capitalized entrepreneurs or businesses in mining placer gold deposits in Interior Alaska from the 1910s to 1930s. There are 18 valid existing mining claims on Dome Creek. BLM could not ensure that the historic ORV would be maintained. Gold Run flows into a stream that feeds the North Fork (classified as a “wild” river) but it is separated from the North Fork by approximately nine miles of streams under private ownership. In addition, there is no known federal, public, state, Tribal, local, or other interests in these designations. State and local groups are opposed to designation. For these reasons, Dome Creek and Gold Run Creek were not recommended as suitable for designation under Alternative C.

### **2.7.2.3. Alternative D: Fortymile Subunit**

The decisions in the following sections apply to Alternative D in the Fortymile Subunit.

#### **2.7.2.3.1. Resources**

##### **2.7.2.3.1.1. Cultural Resources**

#### DECISIONS:

Same as Alternative B.

##### **2.7.2.3.1.2. Fish and Aquatic Species**

#### DECISIONS:

In addition to the decisions Common To All Subunits listed in section 2.6.2.3 Fish and Aquatic Species, the following decisions would apply under Alternative D:

The Tower Bluffs Rapids (HUC # 190405030602) watershed would be identified as a RCA (Map 7).

The Sam Patch Creek-Fortymile River (HUC # 190401042207) and Steele Creek-Fortymile River watershed (190401042203) would be identified as a High Priority Restoration Watershed and emphasized for active restoration. Management of High Priority Restoration Watersheds is described in section 2.6.2.3 Fish and Aquatic Species.

Complete watershed assessments Section I.5, "Watershed Assessment Process" as necessary for management.

### **2.7.2.3.1.3. Visual Resources**

#### **DECISIONS:**

Proposed VRM classes under Alternative D are displayed on Map 17. Recreation Management Zones are displayed on Map 46.

The "wild" segments of the Fortymile River would be assigned a VRM Class I as described in Alternative B.

"Scenic" river segments would be assigned a VRM Class III. "Scenic" segments would be managed in a near-natural setting so that there is no substantial adverse effect on the river and its immediate environment, with facilities screened from the river (Manual 6400).

In VRM Class III areas, developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture but allow for moderate changes to landform and vegetation and may attract the attention of the casual observer.

"Recreational" river segments (Wade Creek segment) would be assigned a VRM Class IV. "Recreational" segments would be managed so that there is no substantial adverse effect on the river and its immediate environment. Large-scale recreational facilities may be established in proximity to the river, but are not required (Manual 6400).

All BLM-managed lands not within the Fortymile WSR Corridor would be assigned a VRM Class IV. This includes the Eagle Recreation Management Zone with a RSC Class of Rural. Management actions would be taken to protect the Wild and Scenic River view shed.

In VRM Class IV areas, developments would be designed to harmonize with the visually dominating elements of the surrounding landscape characteristics of line, form, color and texture; but major modification of the natural landscape would be allowed.

### **2.7.2.3.1.4. Wilderness Characteristics**

#### **OBJECTIVE:**

Allow for multiple use while maintaining naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on 53,000 acres so that these lands retain their wilderness characteristics for the life of the RMP.

#### **DECISIONS:**

Consistent with allocation decisions in the RMP, allow other multiple-uses on lands where wilderness characteristics would be maintained, while applying management restrictions (such

as conditions of use or mitigation measures) to avoid or minimize impacts to wilderness characteristics and meet the objective retaining wilderness characteristics over the life of the RMP.

Wilderness characteristics would be maintained on 53,000 acres (3 percent of the lands with wilderness characteristics in this subunit). These lands occur in the Middle Fork Fortymile Semi-Primitive RMZ, which corresponds to the Joseph Creek and Middle Fork “wild” segments of the Fortymile WSR (Map 72).

**RATIONALE:** Wilderness characteristics would be maintained by decisions in this alternative to close certain areas to mineral leasing and mining, retain the lands in federal management, manage for Semi-Primitive recreation settings, and set OHV designations. Additionally, BLM-authorized uses would be further analyzed through the NEPA process for impacts to size, naturalness, primitive recreation, and solitude, and stipulated mitigation measures would be applied where needed to minimize impacts. Due to the limited access to many BLM lands in the Fortymile Subunit and the lack of mineral development potential, it is likely that wilderness characteristics would remain on much more than 3 percent of the lands over the life of the plan.

#### **2.7.2.3.1.5. Wildlife**

**DECISIONS:**

See section 2.6.2.13 Wildlife Management Common to All Subunits.

#### **2.7.2.3.2. Resource Uses**

##### **2.7.2.3.2.1. Forest and Woodland Products**

**DECISIONS:**

In addition to the decisions Common To All Subunits listed in section 2.6.3.1, the following decisions would apply under Alternative D:

Personal use of timber would be allowed on all lands, except within the Eagle Recreational withdrawal and Fort Egbert Historic Site.

Commercial timber salvage sales would be allowed on all lands.

Commercial timber sales (large and small) would be allowed on all lands, except within the Fortymile WSR Corridor, Eagle Recreational withdrawal, and Fort Egbert Historic Site.

Commercial use of forest products would be allowed on all lands, except within the Fort Egbert Historic Site.

##### **2.7.2.3.2.2. Land Tenure**

**DECISIONS:**

Land tenure decisions are the same as Alternative B, except for the following.

Revoke PLO 3432, the Eagle Recreational withdrawal (816 acres), to make land available for disposal (Zone 3 lands).

### **2.7.2.3.2.3. Land Use Authorizations**

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.3, the following decisions would apply under Alternative D:

Long-term camping in the Fortymile WSR Corridor would be authorized by permit. Allow long-term camping in support of nearby state mining claims in the “wild,” “scenic,” and “recreational” segments of the Fortymile WSR.

### **2.7.2.3.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals.

#### **2.7.2.3.2.4.1. Fluid Leasable Minerals**

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.1, the following decisions would apply under Alternative D:

Approximately 165,000 acres in the following areas would be closed to fluid leasable minerals (Map 29).

- The “wild” and “recreational” segments of the Fortymile WSR Corridor
- Zone 3 disposal lands
- BLM's Chicken and Eagle administrative sites, Fort Egbert Historic Site, and Eagle Recreational withdrawal.
- Within one-half mile of identified ungulate mineral licks.

Approximately 515,000 acres in the Fortymile ACEC would be open to fluid mineral leasing subject to minor constraints.

The remainder of the subunit, approximately 1,196,000 acres, would be open to leasing, subject to Standard Lease Terms. This would include the “scenic” segments of the Fortymile WSR Corridor and all remaining lands not previously described.

#### **2.7.2.3.2.4.2. Solid Leasable Minerals**

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.2, the following decisions would apply under Alternative D:

The same areas that are closed to fluid leasable minerals, approximately 165,000 acres, would also be closed to solid leasable minerals.

Approximately 515,000 acres in the Fortymile ACEC would be open to solid mineral leasing, subject to minor constraints.

The remainder of the subunit, approximately 1,196,000 acres, would be open to leasing, subject to standard leasing stipulations. This would include the “scenic” segments of the Fortymile WSR Corridor and all remaining lands not previously described.

#### **2.7.2.3.2.4.3. Locatable Minerals**

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.3, the following decisions would apply under Alternative D:

Approximately 163,000 acres in the following areas would be closed to locatable mineral entry (Map 30):

- The “wild” segment of the Fortymile WSR Corridor
- A portion of the “recreational” segment of the Fortymile WSR Corridor, starting at CRM, T. 27N., R. 20E., Sec. 19, S. ½ and heading southwesterly along Wade Creek to the confluence of Wade Creek and Walker Fork
- Within one-half mile of identified ungulate mineral licks
- Zone 3 disposal lands
- BLM's Chicken and Eagle administrative sites, Fort Egbert Historic Site, and the Eagle Recreational Withdrawal.

All remaining lands in the Fortymile Subunit, approximately 1,713,000 acres, would be open to locatable mineral entry, including the “scenic” segments of the Fortymile WSR Corridor and portions of the “recreational” segment (above the dredge site).

#### **2.7.2.3.2.4.4. Salable Minerals**

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.4, the following decisions would apply under Alternative D:

Approximately 145,000 acres in the “wild” segments of the Fortymile WSR Corridor would be closed to salable minerals.

All remaining lands in the Fortymile Subunit, approximately 1,731,000 acres, would be open to salable minerals.

#### **2.7.2.3.2.5. Recreation**

##### DECISIONS:

In addition to the decisions Common To All Subunits listed in section 2.6.3.6, Recreation, the following decisions would apply under Alternative D.

##### Recreation Management Areas

Similar to Alternative C, the Fortymile SRMA would include 248,000 acres of lands located within the Fortymile WSR Corridor and lands surrounding the town of Eagle (Map 46). Under this alternative, the Fortymile SRMA would be split into 10 Recreation Management

Zones (RMZs) listed in the table below. Proposed management of the RMZs is described in Section H.1.3, “Fortymile Alternative D”.

**Table 2.8. Fortymile Recreation Management Zones, RSC Settings, and OHV Designations, Alternative D**

Name	Acres	RSC Setting <sup>a b</sup>	OHV Designation
Middle Fork Fortymile RMZ	54,000	Semi-Primitive	LIMITED
North Fork Fortymile RMZ	76,000	Backcountry	LIMITED
Mosquito Fork RMZ	19,000	Backcountry	LIMITED
Fortymile RMZ	64,000	Middlecountry	LIMITED
West Fork Fortymile RMZ	13,000	Middlecountry	LIMITED
Logging Cabin Creek RMZ	7,000	Frontcountry	LIMITED
O'Brien Creek RMZ	4,000	Frontcountry	LIMITED
Wade Creek RMZ	3,000	Frontcountry	LIMITED
Chicken RMZ	7,000	Rural	LIMITED
Eagle RMZ	1,000	Rural	LIMITED
Other BLM lands	1,627,000	N/A	LIMITED

<sup>a</sup>Table 2.5

<sup>b</sup>RSC are descriptive conditions describing management parameters at the implementation level. These are not land use planning decisions

### 2.7.2.3.2.6. Travel Management

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative D.

#### DECISIONS:

Alternative D varies from Alternatives B and C in that cross-country summer use of OHVs weighing 1,500 pounds curb weight and less would be allowed in all areas except the Semi-Primitive RMZ.

Table 2.8, “Fortymile Recreation Management Zones, RSC Settings, and OHV Designations, Alternative D” above describes the Recreation Management Zones in the Fortymile SRMA under Alternative D. Under this alternative, the SRMA only includes the Fortymile WSR Corridor. The OHV prescriptions vary by Recreation Management Zone and are described below (Map 46).

#### Interim Travel Management Prescriptions Common to All Lands

All forms of non-motorized use would be allowed.

Cross-country winter use (October 15 through April 30) of snowmobiles 50 inches or less in width, and weighing 1,000 pounds curb weight and less would be allowed.

Aircraft use would be unrestricted, with the following provisions: Minimal clearing of rocks, downed logs, and brush would be allowed; construction or formal improvement of landing areas would occur by permit only; and use of gravel bars and winter snow areas would be allowed, subject to reasonable provisions to protect the values of the “wild,” “scenic,” and “recreational” river segments.

Additional restrictions could be developed for the purposes of site protection, visitor safety, and/or enhancing recreational opportunities, experiences and outcomes.

### Wild and Scenic River Corridors

Same as Alternative C, all forms of non-motorized use would be allowed. Motorboat use would be allowed without specific authorization consistent with ANILCA Sections 1110(a) and 811. Airboats, hovercraft, and personal watercraft would not be permitted in the following non-navigable river segments: North Fork above the Kink, Middle Fork, Champion Creek, Joseph Creek, and Mosquito Fork above Ingle Creek.

**RATIONALE:** The Wild and Scenic Rivers Act states that rivers classified as “wild” are generally inaccessible except by trail, and are to represent vestiges of primitive America (Wild and Scenic Rivers Act, Section 2). The Middle Fork of the Fortymile WSR has outstandingly remarkable recreational values. One of the available recreational opportunities is a Primitive, non-motorized boating experience. Airboats, hovercraft and personal watercraft generate noise levels which are disruptive to some recreationists and would diminish the Semi-Primitive experience managed for and expected by those recreationists on a “wild” river. These types of use are not considered compatible with the values for which the “wild” river is to be managed.

The Middle Fork and North Fork support a dense nesting population of American peregrine falcons. Motorboat activity can result in some level of disturbance of certain wildlife species and result in a corresponding level of avoidance of the river’s edge. This may, to some extent, result in effective loss of habitat. While ANILCA Section 1110(a) and 811 permit the use of motorboats, prohibiting the use of hovercraft, airboats, and personal watercraft would protect and enhance the outstandingly remarkable recreation values in the Middle Fork and wildlife values (nesting peregrine falcons) in both the North Fork and Middle Fork.

All of the river segments listed above would be managed for a Semi-Primitive recreational opportunity, which focuses on non-motorized experiences. Prohibiting hovercraft, airboats, and personal watercraft would help maintain the Semi-Primitive setting in these areas and would reduce disturbance to wildlife.

### Interim Travel Management Prescriptions for All Semi-Primitive Zones

Same as Management Common to All Lands, with the following addition:

A permit or approved Plan of Operations would be required for all summer OHV use, including ATVs.

### Interim Travel Management Prescriptions for All Backcountry, Middlecountry, Frontcountry, Rural Zones and Other BLM lands Outside the SRMA

Same as Management Common to All Lands, with the following additions:

Cross-country summer use (May 1 through October 14) of OHVs 64 inches or less in width, and weighing 1,500 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use (new user-created routes and cross-country travel off existing routes would not be allowed).

**RATIONALE:** Limiting the use of OHVs by weight or seasonal closure would help maintain the appropriate recreational setting. Additionally, it would somewhat limit impacts to soil, water, vegetation, fish, and wildlife. Allowing for cross-country travel by ATV would increase impacts

to natural resources but would provide additional opportunity for motorized recreation under this alternative.

### 2.7.2.3.2.7. Withdrawals

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.8, the following decisions would apply under Alternative D:

Recommend retaining BLM administrative site withdrawals, including PLO 753, Eagle administrative site (12.23 acres); PLO 1699, Chicken administrative site (11.35 acres); and, PLO 3943 West Fork and South Fork recreation sites (120 acres).

Recommend revoking PLO 3432 and make lands within the Eagle Recreational withdrawal (816 acres) available for disposal.

Recommend withdrawal of approximately 163,000 acres from locatable mineral entry in the following areas:

- Within one-half mile of all identified ungulate mineral licks to protect important wildlife habitat;
- The "wild" segments of the Fortymile WSR Corridor, to include any lands within the river corridor that are not withdrawn under ANILCA and the WSR Act, for the purposes of protecting the water quality and Outstandingly Remarkable Values of the river.
- The portion of the "recreational" segment (Wade Creek) of the Fortymile WSR Corridor, below the dredge (CRM, T. 27N., R. 20E., Sec. 19).

Land tenure Zone 3 lands (Appendix G, *Land Tenure*) will be closed to mineral leasing and location to prevent encumbrance. As needed, recommend modification of public land orders to allow for disposal of these parcels while keeping them closed to mineral entry and mineral leasing.

### 2.7.2.3.3. Special Designations

#### 2.7.2.3.3.1. Areas of Critical Environmental Concern

#### DECISIONS:

Under Alternative D, approximately 554,000 acres would be designated as the Fortymile ACEC (Map 62) to protect the relevant and important values which are concentrated caribou calving and postcalving habitat for the Fortymile caribou herd and Dall Sheep habitat. Of this, 265,000 acres are in process of conveyance or are State-selected lands or high priority Doyon, Limited-selected lands and will likely be conveyed. Approximately 38,000 acres that are within the Fortymile WSR Corridor.

Areas within one-half mile of ungulate mineral licks and within the "wild" segments of the Fortymile WSR Corridor would be closed to locatable mineral entry and mineral leasing subject to valid existing rights. The remainder of the ACEC would be open to locatable mineral entry subject to the SOPs and to mineral leasing subject to minor constraints. A mining Plan of Operations would be required on any mining activity within an ACEC (43 CFR 3809.11(c)(3)).

Ungulate mineral licks: Within a distance of one-half mile of designated ungulate mineral licks, limit all permitted uses and development of facilities for permitted uses, from May 10 through August 31 to activities which would not reduce ungulate use of licks.

Allowed uses would be managed to maintain caribou and Dall sheep habitat. Seasonal activity restrictions would apply within the ACEC and operators must submit a plan describing methods proposed to minimize impacts to caribou and Dall sheep and their habitat.

### SUMMARY OF MANAGEMENT IN THE ACEC

The following is a summary of other management decisions that would apply within the ACEC.

The ACEC would be open to salable minerals, except those portions that overlap with the “wild” segments of the Fortymile WSR Corridor. Subject to pending conveyance to the State and Native corporations, the ACEC would be retained in federal land status. Land use permits, ROW, and leases would be considered, subject to constraints for ungulate mineral licks.

A full description of the OHV limitations can be found in section 2.7.2.3.2.6 Travel Management. A summary follows:

- The OHV designation is Limited.
- The ACEC includes lands within the Fortymile SRMA (same as the Fortymile River WSR Corridor);
- Limitation on motorized use varies between these areas.
- In general, cross-country winter use (October 15 through April 30) would be allowed for snowmobiles weighing 1,000 pounds curb weight and less.
- Use of aircraft would be unrestricted.
- Cross-country summer use (May 1 through October 14) of OHVs weighing 1,500 GVWR and less would be allowed in areas not designated a SRMA.
- Summer use of OHVs would be excluded in the Semi-Primitive Zones of the Fortymile SRMA.

#### **2.7.2.3.3.2. Wild and Scenic Rivers**

##### DECISIONS:

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

Same as Alternative C, no rivers would be recommended suitable.

**RATIONALE:** Dome Creek possesses outstandingly remarkable historic values in that it exemplifies small-scale capitalized entrepreneurs or businesses in mining placer gold deposits in Interior Alaska from the 1910s to 1930s. There are 18 valid existing mining claims on Dome Creek. BLM could not ensure that the historic ORV would be maintained. Gold Run flows into a stream that feeds the North Fork (classified as a “wild” river) but it is separated from the North Fork by approximately nine miles of streams under private ownership. In addition, there is no known federal, public, state, Tribal, local, or other interests in these designations. State and local groups are opposed to designation. For these reasons, Dome Creek and Gold Run Creek were not recommended as suitable for designation under Alternative D.

### **2.7.2.4. Alternative E (Proposed RMP): Fortymile Subunit**

The decisions in the following sections apply to Alternative E (Proposed RMP) in the Fortymile Subunit.

#### **2.7.2.4.1. Resources**

##### **2.7.2.4.1.1. Cultural Resources**

DECISION:

Same as Alternative B.

##### **2.7.2.4.1.2. Fish and Aquatic Species**

DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.2.3, the following decisions would apply under Alternative E:

The following watersheds would be managed as Riparian Conservation Areas (RCAs) (Map 6). These are the same as Alternative B.

1. Buck Creek-North Fork Fortymile River (HUC # 190401040306)
2. Fortymile River (HUC # 190401042201)
3. Hilda Creek-North Fork Fortymile River (HUC # 190401040806)
4. Middle Fork North Fork Fortymile River (HUC # 190401040701)
5. Moose Creek-Mosquito Fork (HUC # 190401041305)
6. North Fork Fortymile River (HUC # 190401040308)
7. Seward Creek-Mission Creek (HUC # 190404010105)
8. South Fork Fortymile River (HUC # 190401042006)
9. The Kink-North Fork Fortymile River (HUC # 190401040803)
10. Tower Bluffs Rapids (HUC # 190405030602)

The following watersheds would be identified as a High Priority Restoration Watersheds and be emphasized for active restoration (Map 6).

1. Sam Patch Creek-Fortymile River watershed (HUC # 190401042207)
2. Steele Creek-Fortymile River watershed (HUC # 190401042203)

Complete watershed assessments Section I.5, "Watershed Assessment Process" as necessary for management.

##### **2.7.2.4.1.3. Visual Resources**

DECISIONS:

Proposed visual resource management (VRM) classes for Alternative E are displayed on Map 18. Recreation Management Zones are displayed on Map 47.

DECISIONS:

Management of VRM Class I areas is to preserve the existing characteristics of the landscape, but allow for limited management activities where changes should be very low and must not attract the attention of the casual observer.

In VRM Class II areas, developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with minor changes to landform and vegetation.

In VRM Class IV areas, management actions would be taken to protect the Wild and Scenic River view shed and adjacent VRM Classes. Development activities would be designed to harmonize with the visually dominating elements of the surrounding landscape characteristics of line, form, color and texture. Major modification of the natural landscape would be allowed.

<b>Alternative E Visual Resource Management Allocations for the Fortymile Subunit (Maps 18 and 47)</b>			
<b>Area</b>	<b>RSC Class</b>	<b>VRM Class</b>	<b>Acres</b>
Middle Fork/Mosquito Fork Fortymile RMZ	Semi-Primitive	I	144,000
West Fork/ Main Fortymile RMZ	Backcountry	II	82,000
Logging Cabin Creek/O'Brian Creek RMZ	Middlecountry	III	11,000
Fortymile and Mosquito Flats ACECs	N/A	II	399,000
Wade Creek/Chicken RMZ	Frontcountry	IV	10,000
Eagle RMZ	Rural	IV	1,000
Remaining BLM lands	N/A	IV	1,230,000

#### **2.7.2.4.1.4. Wetlands and Floodplains**

In addition to the Water Resource decisions listed as Common To All Subunits in section 2.6.2.10, the following decisions would apply under Alternative E:

##### **DECISIONS:**

Within five years of signing the ROD or by management direction, undertake development of a step-down Watershed Management Plan (WMP) for the Fortymile Wild and Scenic River watershed. Watershed planning helps address water quality problems in a holistic manner by fully assessing the potential contributing causes and sources of pollution including uplands, then prioritizing restoration and protection strategies to address these problems. Site specific soil and water management determinations (e.g., watershed, floodplain-wetland, or riparian rehabilitation techniques, monitoring techniques and schedule, and the design and placement of improvements) will be developed in the interdisciplinary Watershed Management Planning phase for resource programs. The "Watershed Assessment Matrix" (Table I.1), depicting range of desired conditions for aquatic habitats would be incorporated in the Watershed Management Plan as well as other science-based watershed assessment tools. Relevant new science and new empirical water resource data would also be incorporated in the WMP. Additional SOPs and Fluid Mineral Leasing Stipulations for land uses may be developed through the step-down watershed management plan.

Restoration and enhancement of floodplain areas should be approached through management of the watershed rather than just focusing on a narrow floodplain-riparian zone. Prior to initiating restoration measures, a determination must be made of site potential and the primary causes of a degraded ecological condition. The natural recovery processes operating in an area should be evaluated prior to considering structural measures. While stream systems and watersheds are undergoing major geomorphic or hydrological adjustment, structural measures should not be initiated. Consider implementing structural measures only if (1) proper management prescriptions will not achieve management objectives within the desired time frame, (2) costs incurred to

achieve accelerated rehabilitation are justified by the benefits to be achieved, and (3) natural recovery has not progressed to a point that will stabilize stream banks and/or wetlands basins.

In setting reclamation priorities for floodplain-wetland areas, consider the extent to which the floodplain-wetland may deteriorate if restoration or improvement action is not immediately implemented. Floodplain-wetland areas that may suffer substantial further degradation and have high potential for improvement should be given top priority. Those that have been degraded but appear stable may be given lower priority for restoration and improvement. Other factors, such as special status species, water quality, competing water uses, fisheries, and recreation values should also be considered when establishing priorities.

#### **2.7.2.4.1.5. Wilderness Characteristics**

##### **OBJECTIVE:**

Reduce impacts of multiple-use activities to maintain naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on 556,000 acres.

##### **DECISIONS:**

The BLM would manage 1,321,000 acres for other multiple uses as a priority over protecting wilderness characteristics.

The BLM would manage 556,000 acres to emphasize other resources values and multiple uses while applying management restrictions to reduce impacts to wilderness characteristics. These lands are located within the Fortymile and Mosquito Flats ACECs and the Semi-Primitive recreation management zone in the Fortymile WSR corridor. It also includes some of the Backcountry recreation management zones on the Fortymile WSR corridor. (Map 73).

The BLM would not manage any lands to protect wilderness characteristics as a priority over other resource values and multiple uses.

The types of activities/projects that could potentially affect wilderness characteristics would require further NEPA analysis. The BLM will monitor wilderness characteristics through this NEPA process. In addition, on-the-ground or aerial monitoring will be done in conjunction with monitoring for other resources.

**RATIONALE:** Under BLM Manual 6320 the BLM can manage areas to emphasize other resource values and multiple uses while applying management restrictions to protect wilderness characteristics. Given the large size of most of the wilderness inventory units in the Fortymile Subunit, many land uses could occur that would not impact naturalness, solitude, primitive recreation on a landscape scale, or the size of the units. Management for other resource drivers such as recreation, wild and scenic rivers, and wildlife are complementary to maintaining wilderness characteristics. Under Alternative E, management decisions to protect caribou habitat, riparian and high priority wetland habitat, and the Fortymile WSR would result in maintenance of wilderness characteristics in these areas. Additionally, when the RMP is implemented uses proposed in these areas would be further analyzed through the NEPA process for impacts to size, naturalness and solitude and stipulated mitigation measures would be applied where needed to minimize impacts.

### 2.7.2.4.1.6. Wildlife

In addition to the goals and decisions listed as Common To All Subunits in section 2.6.2.13, the following would apply under Alternative E:

#### GOAL:

Protect and maintain the value of crucial caribou and Dall sheep habitat and ungulate mineral licks.

#### DECISIONS:

Domestic sheep, goats, and camelids (including alpaca and llama) are prohibited in Dall sheep habitat and adjacent lands.

Delineate 685,000 acres as crucial caribou and Dall sheep habitat (Map 103) to protect values, which include: concentrated caribou calving and postcalving habitat for the Fortymile caribou herd, ungulate mineral licks, and Dall sheep habitat. Management of these areas will give priority to maintaining habitat effectiveness – the ability of habitats to support Dall sheep and caribou—including the following management:

Ungulate mineral licks: Within a distance of one mile of designated ungulate mineral licks, limit all permitted uses and development of facilities for permitted uses, from May 10 through August 31 to activities which would not reduce sheep use of licks.

Limit density of trails within crucial caribou and Dall sheep habitat to protect values for which they were designated.

Within crucial caribou and Dall sheep habitat cross-country winter use of vehicles weighing more than 1,500 pounds curb weight will not be allowed without a permit. Cross-country Summer OHV use will not be allowed without a permit. Summer OHV travel on BLM approved routes may be allowed where it is compatible with maintenance of caribou and Dall sheep habitat effectiveness. These approved routes will be determined through travel management planning.

Winter motorized use in Dall sheep habitat would be monitored and, if use begins to approach a level which may result in altered distribution of Dall sheep, such use may be restricted in the future (through alteration of maintained trails or, if necessary, limited closures, e.g., limited areas and/or time periods).

Additional management prescriptions in crucial caribou and Dall sheep habitat for activities requiring a permit from the BLM:

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.

Permanent roads will generally not be allowed, although long-term temporary roads may be, and roads will generally not be open to the public. Decisions subject to the ANILCA Title XI process in the Fortymile WSR corridor will be made on a case-by-case basis pursuant to Title XI.

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 crucial caribou and Dall sheep habitat 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 above ground level, 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.

The footprint of facilities will be minimized. Permittees may be required to co-locate facilities and access to minimize habitat loss.

Reclamation and revegetation of disturbed areas will be required to meet performance standards set in site-specific reclamation plans with a goal of restoration of caribou and/or Dall sheep habitat, such as a required plant cover (percent) within a certain number of years before a performance bond is released.

## **2.7.2.4.2. Resource Uses**

### **2.7.2.4.2.1. Forest and Woodland Products**

#### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.1, the following decisions would apply under Alternative E:

Personal use of timber would be allowed on all lands.

Commercial timber salvage sales would be allowed on all lands.

Commercial timber sales (large and small) would be allowed on all lands (992,000 acres), except within the Fortymile WSR Corridor, Eagle Recreational withdrawal, Fort Egbert Historic Site, crucial caribou habitat, Fortymile ACEC, and Mosquito Flats ACEC (884,000 acres).

Commercial use of forest products would be considered on all lands.

### **2.7.2.4.2.2. Land Tenure**

#### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.2, the following decisions would apply under Alternative E. The criteria for land tenure zones is described in Appendix G, *Land Tenure*.

#### **Zone 1 lands (lands identified for retention or acquisition):**

Lands within the Fortymile WSR Corridor and the Fortymile ACEC (Map 63), Mosquito Flats ACEC, crucial caribou and Dall sheep habitat, and restoration watersheds would be retained, pending completion of conveyance to the State and Native corporations.

Consider acquisition of private land inholdings from willing sellers within areas identified as Zone 1, including land surrounded on three sides by the Fortymile WSR Corridor.

Zone 2 lands (all lands not identified as Zone 1 or 3):

Consider acquisition, or disposal, including exchange, of scattered parcels within the Fortymile Subunit for the purposes of consolidation.

Zone 3 lands (lands identified for disposal):

Consider the following lands for disposal. If needed, modify existing public land orders to allow for disposal.

- Scattered parcels within the North Star Borough and along the Alaska and Taylor highways;
- East of Salcha Hot Springs site (PLO 5389);
- Tanacross airfield parcel (PLO 1768);
- Remnants of PLO 5150 (TAPs), north and east of the Alaska Highway;
- Federal, School and Park Reserves (Delta Junction), USS 3293, Blocks 14, 15, 16, 17, 18, 19;
- Recommend retaining PLO 1613, Alaska Highway ROW width reduction, and make the remaining lots available for disposal;
- If federal mining claims surrounded by State lands become null and void and are not conveyed to the State of Alaska, consider these lands for disposal or exchange.
- Four Mile Lake, T. 18 N., R. 12 E., Tract A, Copper River Meridian

#### **2.7.2.4.2.3. Land Use Authorizations**

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.3, the following decisions would apply under Alternative E:

Long-term camping in the Fortymile WSR Corridor would be authorized by permit. Allow long-term camping in support of nearby state mining claims in the “wild,” “scenic,” and “recreational” segments of the Fortymile WSR. This is the same as Alternative D. There would be no right-of-way avoidance areas.

#### **2.7.2.4.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals.

##### **2.7.2.4.2.4.1. Fluid Leasable Minerals**

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.1, the following decisions would apply under Alternative E. Fluid leasable minerals are defined by the Mineral Leasing Act and include oil, gas, coalbed natural gas, and geothermal resources.

Approximately 745,000 acres in the following areas would be closed to fluid leasable minerals (Map 31):

- The Fortymile WSR Corridor (all segments)

- The Fortymile ACEC
- Mosquito Flats ACEC
- Riparian conservation areas and high-priority restoration watersheds
- BLM's Chicken and Eagle administrative sites, Fort Egbert Historic Site, and the Eagle Recreational withdrawal.

Approximately 201,000 acres of crucial caribou and Dall sheep habitat outside of the Fortymile ACEC would be open to fluid mineral leasing subject to minor constraints.

The remainder of the subunit, 932,000 acres, would be open to leasing, subject to Standard Lease Terms, Fluid Mineral Leasing Stipulations, and Standard Operating Procedures.

#### **2.7.2.4.2.4.2. Solid Leasable Minerals**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.2, the following decisions would apply under Alternative E. Solid leasable minerals are defined by the Mineral Leasing Act and include coal, oil shale, native asphalt, phosphate, sodium, potash, potassium, and sulfur.

The same areas that are closed to fluid leasable minerals, approximately 745,000 acres, would also be closed to solid leasable minerals (Map 31)

Approximately 201,000 acres of crucial caribou and Dall sheep habitat outside of the Fortymile ACEC would be open to fluid mineral leasing subject to minor constraints.

The remainder of the subunit, 932,000 acres, would be open to leasing, subject to standard leasing stipulations and Standard Operating Procedures.

As stated in section 2.6.3.5.2 Common to All Alternatives, coal leasing is deferred because the coal screening process (as identified by 43 CFR 3420.1-4) has not been completed in the planning area. A RMP amendment would be needed before coal leasing could occur. Only those BLM-managed public lands that have development potential may be identified as acceptable for further consideration for coal leasing.

#### **2.7.2.4.2.4.3. Locatable Minerals**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.3, the following decisions would apply under Alternative E. Locatable minerals are minerals for which the right to explore, develop, and extract mineral resources is established by the staking of mining claims, under the General Mining Law of 1872. Examples of locatable minerals include gold, silver copper, zinc, certain limestones, and gypsum.

Approximately 745,000 acres in the following areas would be recommended closed to locatable mineral entry (Map 31):

- The Fortymile WSR Corridor (all segments)
- The Fortymile ACEC
- Mosquito Flats ACEC

- Riparian conservation areas and high-priority restoration watersheds
- BLM's Chicken and Eagle administrative sites, Fort Egbert Historic Site, and the Eagle Recreational Withdrawal.

All remaining lands in the Fortymile Subunit, approximately 1,132,000 acres, would be recommended open to locatable mineral entry.

#### 2.7.2.4.2.4.4. Salable Minerals

##### DECISIONS:

In addition to the decisions listed as common to all alternatives in section 2.6.3.5.4, the following decisions would apply. Salable minerals, also called mineral materials, include sand, gravel, dirt, and rock.

Approximately 251,000 acres in the following areas would be closed to salable minerals:

- The “wild” and “scenic” segments of the Fortymile WSR Corridor
- Within one mile of ungulate mineral licks

All remaining lands in the Fortymile Subunit, approximately 1,625,00 acres, would be open to salable minerals.

#### 2.7.2.4.2.5. Recreation

##### OBJECTIVES:

SRMA specific outcomes-focused objectives, proposed recreation setting characteristics and the management framework for each RMZ can be found in Appendix H.

##### DECISIONS:

In addition to the decisions Common To All Subunits listed in section 2.6.3.6, the following decisions would apply under Alternative E:

Designate 248,000 acres of lands located within the Fortymile WSR Corridor and lands surrounding the town of Eagle as the Fortymile SRMA. Under this alternative, the Fortymile SRMA would include five Recreation Management Zones (RMZs) displayed in the table below.

**Table 2.9. Fortymile Recreation Management Zones, RSC Settings, and OHV Designations, Alternative E (Map 47)**

Name	Acres	RSC Setting <sup>a b</sup>	OHV Designation
Middle Fork/Mosquito Fork Fortymile RMZ	144,000	Semi-Primitive	LIMITED
West Fork/Main Fortymile RMZ	82,000	Backcountry	LIMITED
Logging Cabin Creek/O'Brien Creek RMZ	11,000	Middlecountry	LIMITED
Chicken/Wade Creek RMZ	10,000	Frontcountry	LIMITED
Eagle RMZ	1,000	Rural	LIMITED
Other BLM lands	1,628,000	N/A	LIMITED

<sup>a</sup>Table 2.5

<sup>b</sup>RSC are descriptive conditions describing management parameters at the implementation level. These are not land use planning decisions

#### 2.7.2.4.2.6. Travel Management

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative E.

##### DECISIONS:

The table above describes the Recreation Management Zones in the Fortymile SRMA under Alternative E (Map 47). Under this alternative, the SRMA includes the Fortymile WSR Corridor and lands surrounding the Davis Dome and the town of Eagle. The OHV prescriptions are described below.

A comprehensive travel management plan for Fortymile Subunit will be deferred until the completion of the RMP. Once the Record of Decision is signed for the RMP, additional data would be collected and a comprehensive travel management plan would be developed using a public process, allowing for additional public and agency input. This process will include publishing a *Federal Register* Notice, public scoping meetings and if any closures are proposed, a formal hearing to address the closure procedures under 43 CFR 36.11 (h) as well as limitations affecting ANILCA provisions listed in Title VIII and XI.

Interim management prescriptions until completion of the travel management plan: Current management outlined in Alternative A, No Action Alternative with the addition of the following:

1,000 pound curb weight and 50 inch width limitation for snowmobiles and a 1,500 pound curb weight and 64 inch width limitation on summer OHV use to replace 1,500 pound GVWR limitation within the Fortymile Wild and Scenic River Corridor. Travel limited to existing trails.

1,000 pound curb weight and 50 inch width limitation for snowmobiles and 1,500 pound curb weight and 64 inch width limitation for summer OHVs to replace 6,000 pound GVWR limitation outside the Fortymile Wild and Scenic Corridor. Cross-country travel allowed.

Fortymile WSR: Use of motorboats, hovercraft, and airboats is allowed without specific authorization.

Seasonal restriction on summer use of OHVs in the Mosquito Flats ACEC.

##### Limitations on Travel Management Planning:

The step-down travel management plan will be developed within 5 years of the Record of Decision. Wildlife and ACEC management decisions will set sideboards on what can be considered in the travel management plan.

Wildlife decisions identified in Alternative E include management prescriptions for non-motorized travel. Domestic sheep, goats, and camelids (including alpaca and llama) are prohibited in Dall sheep habitat and adjacent lands.

Alternative E designates the Fortymile and Mosquito Flats ACECs (Map 63) and also identifies areas of crucial caribou and Dall sheep habitat. In these areas management prescriptions include limitations on OHV use. Management prescriptions state cross-country summer OHV travel will not be allowed without a permit.

**RATIONALE:** Limiting the use of OHVs by weight, seasonal closure, and/or to existing routes or in some cases considering dispersed cross-country travel will help maintain the appropriate recreational setting, reduce impacts to stream beds, soil, water, vegetation, fish, and wildlife; scenic, scientific, and cultural resources. These decisions will be analyzed in the travel management plan.

Weight limitation changes from pounds GVWR to curb weight allows for the same types and sizes of vehicles allowed under Alternative A. Curb weight is consistent with the generally allowed uses on adjacent State lands.

#### **2.7.2.4.2.7. Withdrawals**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.8, the following decisions would apply under Alternative E.

Recommend retaining BLM administrative site withdrawals, including PLO 753, Eagle administrative site (12.23 acres); PLO 1699, Chicken administrative site (11.35 acres); and, PLO 3943 West Fork and South Fork recreation sites (120 acres).

Modify PLO 3432 (816 acres) to allow for expansion of Eagle Gravel Pit.

Review the status of the Fort Egbert parcel. If it is not withdrawn recommend a new FLPMA withdrawal to protect historic structures and values on the site.

Recommend to the Secretary of the Interior that ANCSA 17(d)(1) withdrawals be partially revoked to open 1,130,000 acres to locatable mineral entry and mineral leasing laws in the areas shown on Map 31.

Recommend to the Secretary of the Interior that ANCSA 17(d)(1) withdrawals be retained in the following areas until a new FLPMA withdrawal from the mining laws is approved. Approximately 649,000 acres would be closed to locatable mineral entry in the following areas:

- The Fortymile ACEC to protect caribou calving/postcalving and Dall sheep habitat;
- Mosquito Flats ACEC to protect wetlands;
- The “wild,” “recreational,” and “scenic” segments of the Fortymile WSR, to include any lands within the river corridor that are not withdrawn under ANILCA and the WSR Act, for the purposes of protecting water quality and the Outstandingly Remarkable Values of the river.
- Resource conservation areas and restoration watersheds

**RATIONALE:** Withdrawing the entire Fortymile WSR corridor will allow the BLM to meet the required standard of protecting and enhancing the water quality and outstandingly remarkable values of the river. Retaining ANCSA withdrawals will allow the BLM to protect the relevant and important values of the ACECs until new withdrawals can be approved under the authority of FLPMA.

#### **2.7.2.4.3. Special Designations**

##### **2.7.2.4.3.1. Areas of Critical Environmental Concern**

###### Fortymile ACEC Alternative E (Proposed RMP)

## GOALS

Maintain the value of the Fortymile ACEC as caribou and Dall sheep habitat and ungulate mineral licks.

Maintain habitat effectiveness – the ability of habitats to support Dall sheep and caribou – in the ACEC.

## DECISIONS:

Designate 362,000 acres as the Fortymile ACEC (Map 63) to protect relevant and important values, which include: concentrated caribou calving and postcalving habitat for the Fortymile caribou herd, ungulate mineral licks, and Dall sheep habitat.

Ungulate mineral licks: Within a distance of one mile of designated ungulate mineral licks, limit all permitted uses and development of facilities for permitted uses, from May 10 through August 31 to activities which would not reduce sheep use of licks.

Limit density of trails within the ACECs to protect values for which they were designated.

Within the ACEC cross-country winter use of vehicles weighing more than 1,500 pounds curb weight will not be allowed without a permit. Cross-country Summer OHV use will not be allowed without a permit. Summer OHV travel on BLM approved routes may be allowed where it is compatible with maintenance of caribou and Dall sheep habitat effectiveness. These approved routes will be determined through travel management planning.

Winter motorized use in Dall sheep habitat would be monitored and, if use begins to approach a level which may result in altered distribution of Dall sheep, such use may be restricted in the future (through alteration of maintained trails or, if necessary, limited closures, e.g., limited areas and/or time periods).

The ACEC would be closed to locatable mineral entry and mineral leasing subject to valid existing rights.

### Additional management prescriptions in the Fortymile ACEC for activities requiring a permit from the BLM:

Applicants proposing to conduct surface-disturbing activities or other intensive activities will, at the determination of the Authorized Officer, 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.

Permanent roads will generally not be allowed, although long-term temporary roads may be, and roads will generally not be open to the public. Decisions subject to the ANILCA Title XI process in the Fortymile WSR corridor will be made on a case-by-case basis pursuant to Title XI. 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 the ACEC 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 above ground level, except at landing and takeoff and when it would compromise safety. The Authorized Officer 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.

The footprint of facilities will be minimized. Permittees may be required to collocate facilities and access to minimize habitat loss.

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.

#### Mosquito Flats ACEC Alternative E (Proposed RMP)

##### GOALS:

Protect and maintain the value of wetland and aquatic habitats within the Mosquito Flats ACEC.

##### DECISIONS:

Designate 37,000 acres as the Mosquito Flats ACEC to protect relevant and important values including wetland and aquatic habitat diversity, moose calving habitat, and special status species (Map 63).

Limit all permitted uses and development of facilities for permitted uses to activities which would not degrade aquatic and wetland habitat within the ACEC.

Winter motorized use in the ACEC would be monitored and, if use begins to approach a level which may result in degradation of aquatic or wetland habitat, such use may be restricted in the future (through limited closures, e.g., limited areas and/or time periods).

Summer OHV travel would not be allowed within the ACEC except by permit. Permitted OHV use must not adversely impact aquatic or wetland habitat values of the ACEC.

The ACEC would be closed to locatable mineral entry and mineral leasing subject to valid existing rights. A mining Plan of Operations would be required on any mining activity within the ACEC (43 CFR 3809.11(c)(3)).

Annual monitoring would include fly-over inspections by the BLM or other federal agency personnel as well as site visits to document habitat condition of the ACEC. An annual monitoring program would be developed and modified as warranted by resource personnel in conjunction with and approval from the Authorized Officer.

#### **2.7.2.4.3.2. Wild and Scenic Rivers**

##### DECISIONS:

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

Outstandingly remarkable values for the Fortymile WSR include scenic, recreation, geologic, historic, and wildlife. Specific ORVs are identified by river segment in Appendix E and in section 2.6.4.1.

Under Alternative E, no rivers would be recommended as suitable for designation under the Wild and Scenic Rivers Act in the Fortymile Subunit.

**RATIONALE:** Dome Creek possesses outstandingly remarkable historic values in that it exemplifies small-scale capitalized entrepreneurs or businesses in mining placer gold deposits in Interior Alaska from the 1910s to 1930s. There are 18 valid existing mining claims on Dome Creek. The BLM could not ensure that the historic ORV would be maintained. Gold Run flows into a stream that feeds the North Fork (classified as a “wild” river) but it is separated from the North Fork by approximately nine miles of streams under private ownership. In addition, there is not widespread federal, public, state, Tribal, local, or other interests in these designations. State and many local groups are opposed to designation. For these reasons, Dome Creek and Gold Run Creek were not recommended as suitable for designation under Alternative E.

### 2.7.3. Comparison of Alternatives: Fortymile Subunit

Table 2.10, “Fortymile Subunit: Summary of Action Alternatives” provides a **comparison of major allocation decisions and decisions which vary by action alternative (Alternatives B, C, D, and E)**. There are additional decisions that are common to all action alternatives that are not displayed in these tables. For decisions that do not vary by action alternative, see section 2.6. Decisions may be paraphrased to save space. All acreage figures are approximate and rounded to the nearest 1,000 acres. Under Alternative A, “not addressed” means that the Fortymile Management Framework Plan (BLM 1983) did not include any direction for the given resource or resource use. For the full text of all decisions, see section 2.6 Management Common to All Subunits and All Action Alternatives, section 2.7 Fortymile Subunit, Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*, and Appendix H, *Recreation Management Zones*.

**Table 2.10. Fortymile Subunit: Summary of Action Alternatives**

<b>Program or Resource</b>	<b>Alternative A (No Action)</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>	<b>Alternative E (Proposed RMP)</b>
<b>Fish and Aquatic Species</b>	Riparian Conservation Areas (RCA) not addressed.	Manage 10 watersheds as RCAs (Map 6).	Manage one watershed as a RCA (Map 7).	Manage one watershed as a RCA (Map 7).	Same as Alternative B (Map 6)
	Watershed assessments not addressed.	Complete watershed assessments before opening lands to mining.	Complete watershed assessments as necessary for management.		
	High Priority Restoration Watersheds not addressed.	Manage two watersheds as high priority for restoration (Maps 6 and 7).			
<b>Visual Resources</b>	VRM not addressed.	Assign all BLM-managed lands to VRM Classes. Manage according to the VRM class objectives described in section 2.6.2.9. Proposed VRM Classes are displayed on Maps 15, 16, 17 and 18.			
	WSR managed as VRM Class I by policy.	144,000 acres VRM Class I (“wild” segments of the Fortymile WSR).			
	VRM not addressed.	913,000 acres VRM Class II (“scenic” segments Fortymile WSR, ACEC, and SRMA).	461,000 acres VRM Class II (“scenic” segments Fortymile WSR and core of ACEC).	0 acres VRM Class II.	481,000 acres VRM Class II
	VRM not addressed.	4,000 acres VRM Class III (“recreational” segments of the Fortymile WSR).	0 acres VRM Class III.	100,000 acres VRM Class III (“scenic” segments of the Fortymile WSR).	11,000 acres VRM Class III
	VRM not addressed.	815,000 acres VRM Class IV (other BLM lands).	1,271,000 acres VRM Class IV (“recreational” segments Fortymile WSR and other BLM lands).	1,631,000 acres VRM Class IV (“recreational” segments Fortymile WSR and other BLM lands).	1,241,000 acres VRM Class IV
<b>Wetlands and Floodplains</b>	Watershed management planning not addressed.	Within five years of signing the ROD, or by management direction, undertake development of a Watershed Management Plan for the Fortymile Wild and Scenic River watershed.			

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Wilderness Characteristics</b>	<b>Areas managed to protect wilderness characteristics as a priority over other resource values and multiple uses</b>				
	Wilderness characteristics not addressed.	None	None	None	None
	<b>Acres and Areas managed to emphasize other resource values and multiple uses while applying management restrictions to reduce impacts to wilderness characteristics</b>				
	Wilderness characteristics not addressed.	949,000 acres (51%) Fortymile ACEC; sections of the Fortymile WSR that are non-navigable and have no mining claims	494,000 acres (26%) Core of Fortymile ACEC; parts of the Fortymile WSR (Semi-Primitive recreation management zones and West Fork of the Fortymile Backcountry recreation management zone)	53,000 acres (3%) Middle Fork Fortymile WSR Semi-Primitive recreation management zone	556,000 acres (30%) Fortymile and Mosquito Flats ACECs and parts of the Fortymile WSR (Semi-Primitive and some Backcountry recreation management zones)
	<b>Acres managed to emphasize other resource values and multiple uses as a priority over protecting wilderness characteristics</b>				
Wilderness characteristics not addressed.	927,000 acres (49%)	1,382,000 acres (74%)	1,823,000 acres (97%)	1,321,000 acres (70%)	
<b>Wildlife</b>	Use of pack animals not addressed.	The use of domestic goats, alpacas, llamas, and other similar species in conjunction with BLM-authorized activities would not be allowed in Dall sheep habitat.			
	Use of pack animals not addressed.	Domestic sheep, goats, and camelids are not allowed in Dall sheep habitat.	Not addressed.		Domestic sheep, goats, and camelids are not allowed in Dall sheep habitat.
<b>Forest and Woodland Products</b>	BLM issues permits for personal use of timber, but not addressed in the MFP.	Personal use of timber would be allowed on all lands (1,627,000 acres), except within the Fortymile WSR Corridor, Eagle Recreational withdrawal, and Fort Egbert Historic Site (249,000 acres).	Personal use of timber would be allowed on all lands (1,730,000 acres), except within the "wild" segments of the Fortymile WSR Corridor, Eagle Recreational withdrawal, and the Fort Egbert Historic Site (146,000 acres).	Personal use timber would be allowed on all lands (1,875,000 acres), except within the Eagle Recreational withdrawal and Fort Egbert Historic Site (1,000 acres).	Personal use of timber would be allowed on all lands.
	Timber salvage sales not addressed by the MFP, but BLM considers applications for these	Commercial timber salvage sales would be considered on all lands (1,627,000	Commercial timber salvage sales would be considered throughout the Fortymile Subunit. (1,876,000 acres)		

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	uses on a case-by-case basis.	acres), except within the Fortymile WSR Corridor, Eagle Recreational withdrawal, and Fort Egbert Historic Site (249,000 acres).			
	Commercial timber sales not addressed in the MFP, but BLM considers applications for these uses on a case-by-case basis.	Commercial timber sales would be considered on all lands (1,627,000 acres), except within the Fortymile WSR Corridor, Eagle Recreational withdrawal, and Fort Egbert Historic Site (249,000 acres).			Commercial timber sales considered on 992,000 acres. Fortymile WSR, Eagle Recreational withdrawal, crucial habitat, Fort Egbert Historic Site, and ACECs closed (884,000 acres).
	Personal or commercial use of forest products not addressed in the MFP, but BLM considers applications for these uses on a case-by-case basis.	Allow harvest of forest products for personal use on all lands throughout the subunit.			
		Commercial use of forest products would be considered on all lands (1,627,000 acres), except within the Fortymile WSR Corridor, Eagle Recreational withdrawal, and Fort Egbert Historic Site (249,000 acres).	Commercial use of forest products would be considered on all lands (1,730,000 acres), except within the "wild" segments of the Fortymile WSR Corridor, Eagle Recreational withdrawal, and Fort Egbert Historic Site (146,000 acres).	Commercial use of forest products would be considered on all lands (1,875,000 acres), except within the Fort Egbert Historic Site (1,000 acres).	Commercial use of forest products would be considered on all lands (1,876,000 acres).
<b>Land Tenure</b>	Disposal and retention of land is not addressed.	Lands identified in Appendix L would be available for disposal through sale or exchange. Lands within ACECs would be retained, subject to conveyance of state- and native-selected lands. The Fortymile WSR corridor would be retained. BLM would consider acquisition of parcels in these areas on a willing seller basis. On remaining lands, consider exchange for purposes of land consolidation.			

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Land Use Authorizations</b>	BLM issues permits for long-term camping in support of nearby state mining claims in “scenic” and “recreational” segments of the Fortymile WSR. Not addressed in the MFP.	Do not allow long-term camping in support of nearby state mining claims in the “wild,” “scenic,” or “recreational” segments of the Fortymile WSR.	Same as Alternative A. Long-term camping in support of nearby state mining claims allowed by permit in the “scenic” and “recreational” segments of the Fortymile WSR.	Long-term camping in support of nearby state mining claims allowed by permit in the “wild,” “scenic,” and “recreational” segments of the Fortymile WSR.	Same as Alternative D.
	ROW avoidance areas are not addressed.	The Fortymile WSR Corridor and Fortymile ACEC would be ROW avoidance areas.	There would be no ROW avoidance areas.		
<b>Fluid Leasable Minerals</b> (e.g., oil and gas)	Fortymile Subunit is closed to mineral leasing through public land orders.	800,000 acres open with standard stipulations; 1,076,000 acres closed (Map 26)	155,000 acres open with minor constraints; 1,098,000 acres open with standard stipulations; 623,000 acres closed (Map 27).	515,000 acres open with minor constraints; 1,196,000 acres open with standard stipulations; 165,000 acres closed (Map 29).	201,000 acres open with minor constraints; 932,000 acres open with Standard Lease Terms and SOPs (Appendix A); 745,000 acres closed (Map 31).
<b>Solid Leasable Minerals</b>	Fortymile Subunit is closed to mineral leasing through public land orders.	800,000 acres open; 1,076,000 acres closed (Map 26).	155,000 acres open with minor constraints; 1,098,000 acres open with standard stipulations; 623,000 acres closed (Map 27).	515,000 acres open with minor constraints; 1,196,000 acres open with standard stipulations; 165,000 acres closed (Map 29).	201,000 acres open with minor constraints; 932,000 acres open with Standard Lease Terms and SOPs (Appendix A); 745,000 acres closed (Map 31).
		Coal leasing is deferred because the coal screening process (43 CFR 3420.1-4) has not been completed. A RMP amendment would be needed before coal leasing could occur. Only those BLM-managed public lands that have development potential may be identified as acceptable for further consideration for coal leasing.			
<b>Locatable Minerals</b> (e.g., gold)	Fortymile Subunit is withdrawn from mineral entry and locations by ANCSA17(d)(1) withdrawals.	800,000 acres recommended open to locatable minerals; 1,076,000 acres closed (Map 26). <sup>a</sup>	1,253,000 acres recommended open; 623,000 acres closed (Map 28). <sup>a</sup>	1,713,000 acres recommended open; 163,000 acres closed (Map 30). <sup>a</sup>	1,132,000 acres recommended open; 745,000 acres closed (Map 31). <sup>a</sup>
<b>Salable Minerals</b> (e.g., gravel)	MFP does not address salable minerals. No areas are closed to mineral sales.	1,625,000 acres open to salable minerals; 251,000 acres closed.	145,000 acres open to salable minerals; 1,731,000 acres closed.	Same as Alternatives B and C	

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Recreation</b>	Recreation management areas not addressed, although the BLM manages the Fortymile WSR corridor is as such.	Designate 798,000 acres as the Fortymile Special Recreation Management Area (SRMA) (Fortymile WSR and associated lands).	Designate 248,00 acres as the Fortymile SRMA (Fortymile WSR Corridor and lands surrounding the town of Eagle).		
	Recreation management zones not addressed.	Divide the SRMA into 7 Recreation Management Zones (Appendix H and Map 44).	Divide the SRMA into 9 Recreation Management Zones (Appendix H and Map 45).	Divide the SRMA into 10 Recreation Management Zones (Appendix H and Map 46).	Divide the SRMA into 5 Recreation Management Zones (Appendix H and Map 47)
<b>Travel Management</b>	MFP does not address OHV area designations.	OHV area designation of limited.			
	Fortymile WSR Corridor (248,000 acres): OHV use of vehicles greater than 1,500 pounds gross vehicle weight (GVWR) are prohibited with out a permit. Remainder (1,628,000 acres): Vehicles greater than 6,000 pounds GVWR a permit.	1,250,000 acres limited to existing routes, weight, and width (summer).	1,732,000 acres limited to existing routes, weight, and width (summer).	1,822,000 acres limited by width and weight (summer).	Interim management same as A except change from GVWR to curb weight and 1,500 pound curb weight limitation on lands outside the Fortymile WSR corridor. Winter only travel in the Mosquito Flats ACEC. Develop travel management plan within five years of the ROD.
		626,000 acres (Semi-Primitive RMZs) limited by season of use (no summer OHV use).	144,000 acres (Semi-Primitive RMZs) limited by season of use (no summer OHV use).	54,000 acres (Semi-Primitive RMZs) limited by season of use (no summer OHV use).	
		1,876,000 acres (all lands) limited by width and weight (winter).			
Within the Fortymile WSR Corridor: Motorized boats not allowed on non-navigable "wild" segments, except for access to valid mining claims.	Fortymile WSR: Motorboat use allowed without authorization. Airboats, hovercraft, and personal watercraft would not be permitted in the following non-navigable river segments: the North Fork above the Kink, the Middle Fork, Champion Creek, Joseph Creek, Mosquito Fork above Ingle Creek, and Gold Creek.	Fortymile WSR: Motorboat use allowed without authorization. Airboats, hovercraft, and personal watercraft would not be permitted in the following non-navigable river segments: the North Fork above the Kink, the Middle Fork, Champion Creek, Joseph Creek, and Mosquito Fork above Ingle Creek.		Interim management same as A. Except motorboats, hovercraft, and airboats are allowed. Develop travel management plan within five years of the ROD.	

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Withdrawals</b>	PLO 3432 not addressed.	Recommend retaining PLO 3432, Eagle Recreational withdrawal.	Recommend modifying PLO 3432 to allow expansion of Eagle Gravel Pit. Retain the remainder of the withdrawal. Review status of Fort Egbert parcel. If not withdrawn, recommend new FLPMA withdrawal of the historic site.	Recommend revoking PLO 3482 and make lands available for disposal.	Same as C
	Modification of ANCSA withdrawals is not addressed.	Recommend partial revocation of ANCSA withdrawals to open 812,000 acres to mining. Recommend retaining ANCSA withdrawals for 1,064,000 acres until a new FLPMA withdrawal is approved.	Recommend partial revocation of ANCSA withdrawals to open 1,266,000 acres to mining. Recommend retaining ANCSA withdrawals for 610,000 acres until a new FLPMA withdrawal is approved.	Recommend partial revocation of ANCSA withdrawals to open 1,727,000 acres to mining. Recommend retaining ANCSA withdrawals for 149,000 acres until a new FLPMA withdrawal is approved.	Recommend partial revocation of ANCSA withdrawals to open 1,130,000 acres to mining. Recommend retaining ANCSA withdrawals for 649,000 acres until a new FLPMA withdrawal is approved.
	No lands are identified for disposal.	Recommend modification of public land orders to allow for disposal of Land tenure Zone 3 lands (Appendix G) while keeping them closed to mineral entry and mineral leasing.			Recommend modification of PLOs as needed to open Land tenure Zone 3 lands to mining and leasing.
<b>Areas of Critical Environmental Concern</b>	No ACECs are designated.	Designate the Fortymile ACEC (690,000 acres).	Designate the Fortymile ACEC (554,000 acres).	Designate the Fortymile ACEC (554,000 acres).	Designate the Fortymile ACEC (362,000 acres) and the Mosquito Flats ACEC (37,000 acres).
<b>Wild and Scenic Rivers</b>	ORVs have not been identified.	Identify Outstandingly Remarkable Values (ORVs) for the Fortymile WSR as scenic, recreation, geologic, historic, and wildlife. Specific ORVs are identified by river segment in Appendix E.			
	Other rivers have not been studied for eligibility or suitability.	Gold Run (four miles) recommended suitable for classification as "wild."	No rivers recommended suitable.		
		Dome Creek (five miles) recommended suitable for classification as "recreational."	No rivers recommended suitable.		

<sup>a</sup>RMP recommends open or closed. To implement this recommendation requires action by the Secretary of the Interior

## 2.8. Steese Subunit

### 2.8.1. Alternative A: No Action Alternative

Current management in the Steese National Conservation Area is directed by the Record of Decision and Resource Management Plan for the Steese National Conservation Area (BLM 1986a) which was approved in February 1986. Throughout this section, this plan will be referred to as the Steese RMP (BLM 1986a). Additional management guidance is provided by special rules published in the *Federal Register* (FR 1988a) and the Birch Creek River Management Plan (BLM 1983b). Other lands within the Steese Subunit as defined in the Eastern Interior RMP (Map 3) are not currently covered by any land use plan. Current management is described in the following sections.

#### 2.8.1.1. Resources

##### 2.8.1.1.1. Cultural and Paleontological Resources

Class III site-specific archaeological inventories are generally conducted prior to any development action in order to identify, protect, or mitigate potentially adverse impacts to significant cultural resources. The likelihood of the presence of paleontological resources in such circumstances is evaluated, and recommendations for protecting or mitigating potentially adverse effects are provided.

##### 2.8.1.1.2. Fish and Aquatic Species

Fish habitat will be managed to maintain the present quality of habitat in the tributary streams of Birch Creek that are largely undisturbed, including the South Fork of Birch Creek and its tributaries, Clums Fork, Sheep Creek, and Harrington Fork. Primary management emphasis will be placed on Arctic grayling. The primary management tool used to reduce the impact of development on the fishery resource is the enforcement of stipulations, which are attached to authorizing documents.

In cases where upland gravel sources are not available, or where their use would cause greater environmental damage than the use of riparian sources, riparian sources may be used. The gravel will be extracted in such a manner as to minimize the loss of fish and wildlife and their habitats.

Special stipulations will be placed on development activities in crucial habitats, such as fish spawning and overwintering areas (Table 2.11, "Crucial Wildlife and Fish Habitats in the Steese RMP, Alternative A"). These stipulations could require an alteration in the timing of activities to avoid disturbing or disrupting spawning activity, or the selection of an alternate site.

All surface-disturbing activities are required to meet State of Alaska Water Quality Standards.

All placer mines and other surface disturbances are required to be rehabilitated in such a way as to minimize future erosion.

### **2.8.1.1.3. Special Status Species**

Inventories for sensitive and rare plants are conducted as needed for clearances of proposed surface-disturbing activities. Sites are protected by modifying proposed actions which threaten sensitive or rare plant habitats or by denying those actions which cannot be modified. If actions cannot be modified or denied, plant material salvage will be attempted.

### **2.8.1.1.4. Visual Resource Management**

Scenic quality is maintained by adhering to visual resource management objectives while implementing a program of visual assessment of all surface-disturbing activities, such as, new access trails, mining activities, and recreational facilities. Current VRM classes for the Steese National Conservation Area are displayed on Map 19.

Birch Creek WSR is managed as VRM Class I and the river view shed is managed as VRM Class II. The Primitive Management Unit, inclusive of the Mount Prindle RNA, is managed as VRM Class II. The Semi-Primitive Motorized Restricted Management Unit, the Semi-Primitive Motorized Special Management Unit (inclusive of Big Windy Hot Springs RNA), and the Semi-Primitive Motorized Management Unit are managed as VRM Class III.

All BLM-managed lands not within the Steese National Conservation Area or Birch Creek WSR Corridor would require an inventory determination and management class identification for all surface-disturbing activities.

### **2.8.1.1.5. Water**

One of the primary focuses of management is to improve water quality in Birch Creek. This would be accomplished by: (1) reducing the amount of sediment released into Birch Creek and its tributaries by placer mines, including those mines outside of the Steese National Conservation Area's boundaries and (2) requiring reclamation of ground disturbed by mining to prevent stream sedimentation caused by erosion.

The BLM cooperates closely with the ADEC and the U.S. Environmental Protection Agency for the purpose of establishing water quality standards and for preventing, eliminating or diminishing the pollution of state waters consistent with the Federal Clean Water Act, the purpose for which the Wild and Scenic Rivers were established under the Wild and Scenic Rivers Act, and State of Alaska Water Quality Standards.

Water quality is monitored to ensure that State of Alaska Water Quality Standards are met. The information gained is used to determine whether or not Fluid Mineral Leasing Stipulations attached to mining plans of operation are adequate to protect water quality and whether or not the operator is in compliance.

A sufficient instream flow will be maintained in Birch Creek to meet the purposes for which it was designated as a WSR. An instream flow study was completed and an application for Birch Creek Instream Flow Water Rights was submitted in January 2001 to the ADNDR.

### 2.8.1.1.6. Wildland Fire Ecology and Management

Guidance for wildland fire management is provided by the BLM Alaska Land Use Plan Amendment for Wildland Fire and Fuels Management (BLM 2004b, 2005c). The decisions are described under section 2.6.2.12. Wildland Fire Ecology and Management, Management Common to All Subunits and Action Alternatives.

### 2.8.1.1.7. Wildlife

The primary emphasis of the wildlife habitat management program is habitat protection, maintenance and improvement. Priority species are caribou, Dall sheep, fish, and peregrine falcon. In the Steese National Conservation Area, present and historical caribou habitat is managed as a primary land use. The wildlife habitat management is implemented in cooperation with the ADF&G and USFWS.

Identification and monitoring of wildlife distribution, movements, and use areas is done, by the use of ground and aerial surveys. The information is used to assess the effects of various land use activities, to determine habitat condition and trends, and to formulate measures to mitigate possible adverse effects on wildlife from land uses such as mining, roads, and trails.

Habitat protection emphasizes the protection of crucial habitats (Table 2.11, “Crucial Wildlife and Fish Habitats in the Steese RMP, Alternative A”). Crucial habitats are protected by the avoidance or mitigation of possible adverse effects of land use activities and by closing specific areas to mineral development. The Steese RMP (BLM 1986a) recommended opening some areas to mineral entry. This decision was never implemented, so the entire Steese National Conservation Area is currently closed to mineral entry except on valid existing claims.

**Table 2.11. Crucial Wildlife and Fish Habitats in the Steese RMP, Alternative A**

Species/group	Crucial Use Area
Caribou	Caribou calving (present and historical), movement routes (present and historical)
Dall Sheep	Dall Sheep mineral licks, movement routes, lambing, associated escape terrain, winter range
Moose	Moose late winter range, mineral licks
Grizzly Bear/Black Bear	Grizzly Bear/Black Bear denning (winter), seasonal high use/high prey density
Peregrine Falcon/Other Raptor	Peregrine Falcon/other raptor nesting, prey gathering
Furbearer	Furbearer denning (reproduction), seasonal high use/high prey density
Waterfowl	Waterfowl nesting, overwintering (potential)
Small Game	Small game winter concentrations
Land/Shore Birds and Mammals	Land/shore birds and mammals concentrations which are crucial for predator/prey gathering
Fish	Fish spawning areas, overwintering areas

When land use actions are proposed, mitigating measures to avoid or minimize possible adverse effects are developed through the environmental assessment process. These sometimes result in the restriction or alteration of timing, location, and extent of a proposed land use activity in order to avoid or minimize adverse effects. Table 2.12, “Possible Surface Use and Occupancy Restrictions in Crucial Habitats, Alternative A” shows habitats and time frames where aerial and surface use restrictions may be required. Rehabilitation of disturbed areas will be required to facilitate stabilization and recovery of vegetation.

Caribou range was identified by Congress as a special value to be considered in planning and management of the Steese National Conservation Area. Emphasis is placed on managing the area to maintain the opportunity for the Fortymile caribou herd to utilize both present and historical use areas. In addition to previously mentioned habitat protection measures, future access routes, when feasible, will be consolidated with existing roads and trails within existing transportation corridors. These corridors will be intensively managed to minimize any potential "barrier effect" on caribou movements. Transportation corridors may also be subject to surface use restrictions to avoid conflicts with caribou movements at crucial times.

Habitat improvement for moose and other species is provided by management of wildfire. Prescribed burns may be used to reestablish or improve habitat for moose and other species.

Emphasis is placed on managing the Semi-Primitive Motorized Special Management Unit (Map 48), to maintain the opportunity for caribou and Dall sheep to utilize present and historical use areas. Proposals for land use within this area will be required to include a mitigation plan that describes discrete phases and actions for the proposed activity. Possible mitigating measures include restriction or alteration of the timing, location, and extent of the proposed land use activity.

**Table 2.12. Possible Surface Use and Occupancy Restrictions in Crucial Habitats, Alternative A**

Species	Crucial Use Area	Dates
Caribou	calving, migration routes	May 1 - June 15; August 15 - September 30
Dall Sheep	lambing, movements	May 1-31
Dall Sheep	mineral licks	May 15 - July 15
Dall Sheep	winter range	October 1 - May 1
Grizzly Bear/Black Bear	denning	November 1 - April 31
Peregrine Falcon/Other Raptor	nesting, prey gathering	May 1 - June 15
Furbearer	denning	May 1 - June 15
Fish	spawning	May 1 - September 1
Fish	overwintering	December 1 - April 15

## 2.8.1.2. Resource Uses

### 2.8.1.2.1. Forest Management

Forest products are reserved for local use only. No commercial timber harvest is allowed. Personal use of timber under a Free Use Permit is allowed throughout the subunit.

### 2.8.1.2.2. Lands and Realty Actions

Four transportation corridors were established by the Steese RMP in the Steese National Conservation Area (Map 19). There are two corridors in the North Steese National Conservation Area Unit. One corridor follows the existing Montana Creek trail to Preacher Creek, the other extends from the end of the Porcupine Creek Road to Loper Creek. There are also two corridors in the South Steese National Conservation Area Unit. The corridors were established to provide access to the south side of Birch Creek; one at Great Unknown Creek and one at Portage Creek/Buckley Bar. Both transportation corridors follow existing trails into the Birch Creek WSR Corridor and both cross the river.

In accordance with Section 1107 of ANILCA, any authorized transportation system within the river corridor must be compatible with WSR values and shall be constructed in a manner that does not interfere with or impede stream flow or transportation on the river. Location and construction techniques will be selected to minimize adverse effects on scenic, recreational, fish, and wildlife and other values of the river area.

In order to prevent proliferation of rights-of-way, all rights-of-way will, to the extent possible, be located in one of these four corridors. If it were to become necessary for a right-of-way to extend beyond a corridor, existing trails would be followed whenever possible. Several users might be required to use the same right-of-way and to jointly maintain it. Holders of rights-of-way for roads or trails will be required to allow public access for recreation, unless there is a compelling reason to deny such access.

Engineering studies for route selections within the transportation corridors will be conducted in order to identify road and trail locations, river crossings, geologic hazards and other important resource values prior to any construction.

Approximately 15,000 acres of State lands within the boundaries of the Steese National Conservation Area is identified for acquisition by exchange.

Other realty actions would be allowed if compatible with the land uses designated in the Steese RMP (BLM 1986a).

### **2.8.1.2.3. Minerals Management**

All BLM-managed lands in the Steese National Conservation Area are currently withdrawn from mineral leasing and entry by a variety of PLOs and federal laws. The locatable mineral withdrawal enacted in Section 402(b) of ANILCA will remain in effect. The Birch Creek WSR Corridor (within one-half mile of the banks) is withdrawn from mineral entry and leasing under ANILCA 606(a)(2) and administered pursuant to the Wild and Scenic Rivers Act. Other lands in the subunit are withdrawn by PLOs or segregated (closed to mining) due to State- or Native-selections. Mining is occurring on some valid existing claims that existed before the withdrawals were enacted.

No lands within the Steese Subunit are open to leasing of either fluid minerals (oil and gas) or solid minerals (coal). There are no existing mineral leases.

Locatable mineral activity is limited to valid existing claims. The following requirements apply to valid existing claims:

- Each operator in the Steese National Conservation Area will be required to file a Plan of Operation or notice depending on location and acreage disturbed.
- An operator who disturbs more than five acres per year or who is operating in an area closed to further mineral location is required to file a Plan of Operation.
- A reclamation plan must be included as a part of the Plan of Operation or Notice of Intent.
- All operations in the Steese National Conservation Area must be reclaimed to the satisfaction of the Authorized Officer (AO).

Within the Steese National Conservation Area, wintertime cross-country moves are preferred for the transport of equipment onto claims. Any cross-country movement of heavy equipment must be approved in advance by the AO.

All operators producing water-borne effluent must obtain a National Pollutant Discharge Elimination System permit and meet the requirements of that permit. The BLM monitors water quality in cooperation with ADEC and the Environmental Protection Agency (EPA) to ensure compliance with permits.

Disposal of sand, gravel, rock, and other salable minerals is considered, and is based on need and on conformance with the Steese RMP (BLM 1986).

#### **2.8.1.2.4. Recreation**

In the Steese Subunit, the Eastern Interior Field Office follows the BLM program direction for managing recreation on public lands. Recreation management is focused on the Steese National Conservation Area and Birch Creek WSR.

The BLM provides public outreach in a variety of ways, including the establishment and maintenance of information kiosks; maintenance of a website; and use of volunteers to provide visitor contact assistance.

The BLM issues special recreation permits as appropriate for commercial, competitive, and special events.

Established waysides and trails are maintained. Periodic accessibility, safety, and condition assessments are conducted at developed recreation sites and available funding prioritized to resolve maintenance needs.

#### **2.8.1.2.5. Travel Management**

The current OHV area designation for the Steese National Conservation Area is Limited, except for Research Natural Areas (RNAs), which are Closed (Map 48). A Notice of designated OHV areas for the Steese National Conservation Area was published in the *Federal Register* July 15, 1988.

All forms of non-motorized use are allowed. Aircraft use is unrestricted.

The use of hovercraft or airboats is prohibited in the Steese National Conservation Area (FR 1988a).

The Steese National Conservation Area contains the following management units (Map 48): Primitive, Semi-Primitive Motorized Restricted, Semi-Primitive Motorized Special, Semi-Primitive Motorized, and Birch Creek WSR Corridor. Limitations on motorized use for each management unit are described below.

Pinnell Mountain National Recreation Trail: The Pinnell Mountain Trail is closed to motorized use.

Primitive Management Unit: This management unit (73,000 acres) is closed to summer use of OHVs. Authorization is required for the use of any motorized vehicle other than a snowmobile off a valid right-of-way. The use of snowmobiles of less than 1,500 pounds GVWR is allowed without authorization.

Semi-Primitive Management Unit: In the Semi-Primitive Management Unit (1,066,000 acres) no permit is required for vehicles of less than 1,500 pounds GVWR. A permit is required for the use of OHVs of greater than 1,500 pounds GVWR off a valid right-of-way.

The use of vehicles of greater than 1,500 pounds GVWR off a valid ROW is allowed by authorization only. Such authorization is generally given only when necessary to provide access to inholdings or for other purposes, based on analysis of need and compatibility with the Steese RMP (BLM 1986a). Approval is subject to conditions designed to minimize the impact to the environment or other land uses.

The use of vehicles of greater than 1,500 pounds GVWR off a valid existing right-of-way is limited to winter months with adequate snow cover and is limited to existing trails, where practical. Under certain circumstances, the AO may authorize summer moves. These include (but are not limited to) the following when:

1. A winter move would be impractical;
2. A summer move would not result in undue or unnecessary impacts to other resources as defined in 43 CFR 3809;
3. An existing trail would be used, and the proposed use would not damage the trail to the extent that it becomes unusable by recreational OHVs;
4. Specialized equipment such as low ground pressure vehicles would be used which would minimize impacts to within acceptable limits; and,
5. A specified limited number of trips over a trail would result in impacts within acceptable limits.

Permanent use restrictions on OHVs require an order signed by the AO and publication in the *Federal Register*. Where the AO determines that OHVs are causing, or will cause, considerable adverse effects on resource values or other authorized uses, he/she shall immediately close the area or route/trail/road affected to the type of vehicle causing the adverse effect until that effect is eliminated and measures have been implemented to prevent a recurrence, in accordance with 43 CFR 8341.2.

Birch Creek WSR Corridor: The Steese RMP (BLM 1986a) amended the Birch Creek River Management Plan related to OHV use within the river corridor. OHV use is prohibited within the Birch Creek WSR Corridor, except:

1. During the winter months, when snowmobiles of less than 1,500 pounds GVWR are allowed;
2. For OHVs used to access inholdings, which can be authorized under a mining plan of operation, with permit, or by other appropriate means.
3. If there are no economically feasible and prudent alternatives for crossing the corridor.

Use of motorized boats is allowed without specific authorization. Hovercraft and airboats will not be allowed.

Research Natural Areas: The Mount Prindle and Big Windy Hot Springs research natural areas are closed to OHV use (3,000 acres).

#### **2.8.1.2.6. Withdrawals**

The entire subunit is closed to locatable mineral entry and mineral leasing by various withdrawals and segregations. The primary PLOs affecting this subunit are PLO 5179, 5180, and 5184. There are approximately 2,000 acres of valid existing federal mining claims outside the National

Conservation Area that predate the PLOs. Mining is occurring on some of these claims. There are numerous other withdrawals for other federal agencies. Existing withdrawals are described in section 3.3.8 Withdrawals.

The Steese National Conservation Area (including those portions of Birch Creek within the National Conservation Area) is closed to locatable mineral entry and leasing under Section 402(b) of ANILCA. There are approximately 5,000 acres of existing federal mining claims within the Steese National Conservation Area that predate ANILCA and the PLOs. Mining is occurring on some of these claims. The Birch Creek WSR Corridor (within one-half mile of the banks) is closed to mineral entry and leasing by ANILCA pursuant to the Wild and Scenic Rivers Act.

### **2.8.1.3. Special Designations**

The two designated Research Natural Areas (RNAs) are: the Mount Prindle RNA (2,800 acres) and Big Windy Hot Springs RNA (150 acres). With the exception of hiking trails, no surface-disturbing activities are allowed, except BLM-authorized research projects. These areas are closed to OHVs and camping to avoid disturbing research projects. Natural processes, including wildfire, are allowed to continue with as little interference as possible. Primitive campsites could be established outside the RNA boundaries. Access into the RNA can then be gained by developed trails and helispots. Hiking, hunting, and nature appreciation are allowed. The RNAs are closed to mineral entry.

Birch Creek WSR is covered by an approved River Management Plan, which became effective May 1, 1984. The Birch Creek River Management Plan (BLM 1984b) provides a detailed description of the boundaries of the corridor, major issues and concerns for management of the corridor, and management actions. Part III of the River Management Plan, entitled The Management Program, is the multiple use management prescription. The prescription is designed to preserve the river and its immediate environment in its natural, Primitive condition, in accordance with the Wild and Scenic Rivers Act (P.L. 90-542). The Steese RMP amended the Birch Creek River Management Plan as it relates to OHV use within the river corridor (section 2.8.1.2.5 Travel Management). The river corridor is closed to mineral leasing and location.

One eligible river in the Steese subunit has been identified in the Wild and Scenic Rivers Classification Findings for Eligible Rivers (Table E.3). Big Windy Creek is found to have characteristics eligible for a tentative classification of Wild. This tentative classification would be maintained through mitigation standards through NEPA review until suitability can be evaluated.

### **2.8.1.4. Subsistence**

The BLM analyzes all proposed actions to ensure compliance with Section 810 of ANILCA. Measures to reduce impacts to subsistence are developed on a project-specific basis. Subsistence values in the Steese National Conservation Area include the Birch Creek fishery and the Fortymile caribou herd.

## **2.8.2. Action Alternatives Steese Subunit**

The following sections list decisions for Alternatives B, C, and D.

## 2.8.2.1. Alternative B: Steese Subunit

### 2.8.2.1.1. Resources

#### 2.8.2.1.1.1. Cave and Karst Resources

GOAL: Manage significant cave and karst systems to protect and maintain their resource, educational, scientific, and recreational values in accordance with the Federal Caves Resource Protection Act of 1988 and 43 CFR 37.11.

#### DECISIONS:

Manage Sheep Cave, #AK-028-003, as a significant cave.

Management objective: Preserve Sheep Cave, #AK-028-003, for scientific use and values.

Setting Prescription: Primitive

Administrative designation: Located within the Steese ACEC (Map 64). No additional designation recommended.

#### 2.8.2.1.1.2. Cultural Resources

#### DECISIONS:

All cultural sites are designated for scientific use.

#### 2.8.2.1.1.3. Fish and Aquatic Species

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.2.3, the following decisions would apply under Alternative B:

The following 21 watersheds would be managed as RCAs (Map 8).

1. Birch Creek (HUC # 190404020207)
2. Birch Creek (HUC # 190404020212)
3. Birch Creek (HUC # 190404020601)
4. Birch Creek (HUC # 190404020606)
5. Fourteenmile Creek-Yukon River (HUC # 190404011906)
6. George Creek-Birch Creek (HUC # 190404020903)
7. Headwaters North Fork Preacher Creek (HUC # 190404021102)
8. Loper Creek (HUC # 190404021201)
9. Lower North Fork Preacher Creek (HUC # 190404021105)
10. McLean Creek-Birch Creek (HUC # 190404020401)
11. Middle Preacher Creek (HUC # 190404021202)
12. Middle North Fork Preacher Creek (HUC # 190404021104)
13. Ninety-eight Pup-Preacher Creek (HUC # 190404021009)
14. Pitkas Bar (HUC # 190404020408)
15. Preacher Creek (HUC # 190404021005)

16. Puzzle Gulch (HUC # 190404020506)
17. Sheep Creek (HUC # 190404020407)
18. Thomas Creek-Birch Creek (HUC # 190404020403)
19. Upper North Fork Preacher Creek (HUC # 190404021103)
20. Yukon River (HUC # 190404011903)
21. Yukon River (HUC # 190404011904)

The following watersheds would be identified as High Priority Restoration Watersheds and be managed for active restoration.

1. Harrison Creek (HUC # 190404020406)
2. Twelve-mile Creek (HUC # 190404020205)
3. North Fork Birch Creek (HUC # 190404020206)
4. Volcano-Clums Fork (HUC # 190404020306)

Management of High Priority Restoration and Conservation Watersheds is described in section 2.6.2.3 Fish and Aquatic Species.

Complete watershed assessments Section I.5, "Watershed Assessment Process" prior to opening lands to locatable mineral location and entry, using the following priorities:

1. Watersheds containing areas of high/moderate locatable mineral potential.
2. Watersheds identified as RCAs.
3. Other watersheds.

#### **2.8.2.1.1.4. Visual Resources**

Proposed VRM classes for Alternative B are displayed on Map 20. Recreation Management Zones are displayed on Map 49. Areas where wilderness characteristics would be maintained are displayed on Map 74.

#### **DECISIONS:**

Birch Creek RMZ (inclusive of Birch Creek WSR) with an RSC Class of Semi-Primitive would be managed as VRM Class I. The Pinnell Mountain, Mount Prindle RNA, and Big Windy RNA RMZs with a RSC Class of Primitive would also be managed as VRM Class I. Management of VRM Class I areas is to preserve the existing characteristics of the landscape, but allow for limited management activities where changes should be very low and must not attract the attention of the casual observer.

The Preacher Creek and Wolf Creek RMZs with a RSC Class of Primitive and Harrison Creek RMZ with a RSC of Backcountry would be managed as VRM Class II. In VRM Class II areas, developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with minor changes to landform and vegetation.

Areas to be managed for wilderness characteristics associated with Birch Creek, Pinnell Mountain, Mount Prindle RNA and Big Windy RNA RMZs would be managed as VRM Class I while those associated with Preacher Creek and Wolf Creek RMZs would be managed as VRM Class II.

All remaining BLM lands not within the Steese Recreation Management Area (inclusive of the Steese National Conservation Area and Birch Creek WSR Corridor) would be assigned a VRM Class IV. In VRM Class IV areas, management actions would be taken to protect the wild and

scenic river view shed and adjacent VRM Classes. Development activities would be designed to harmonize with the visually dominating elements of the surrounding landscape characteristics of line, form, color and texture. Major modification of the natural landscape would be allowed.

#### **2.8.2.1.1.5. Wilderness Characteristics**

##### **OBJECTIVE:**

Allow for multiple use while maintaining naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on 1,199,000 acres so that these lands retain their wilderness characteristics for the life of the RMP.

##### **DECISIONS:**

Consistent with allocation decisions in the RMP, allow other multiple-uses on lands where wilderness characteristics would be maintained, while applying management restrictions (such as conditions of use or mitigation measures) to avoid or minimize impacts to wilderness characteristics and meet the objective retaining wilderness characteristics over the life of the RMP.

Under Alternative B, wilderness characteristics would be maintained on 1,199,000 acres (95 percent of the lands with wilderness characteristics in this subunit). These lands include the Steese National Conservation Area and upper Birch Creek WSR Corridor (Map 74).

**RATIONALE:** Wilderness characteristics would be maintained by decisions in this alternative to close these areas to mineral leasing and to retain existing ANILCA mining closures, manage for VRM class I or II, retain lands in federal management, manage for Primitive and Semi-Primitive recreation settings, and set OHV designations. Additionally, BLM-authorized uses would be further analyzed through the NEPA process for impacts to size, naturalness, primitive recreation, and solitude, and stipulated mitigation measures would be applied where needed to minimize impacts. Management of the Steese National Conservation Area to protect Birch Creek and caribou range, while emphasizing Primitive, Semi-Primitive, and Backcountry recreational opportunities would be consistent with maintenance of wilderness characteristics.

#### **2.8.2.1.1.6. Wildlife**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.2.13, the following decisions would apply under Alternative B. Additional wildlife related decisions are found in section 2.8.2.1.3 Special Designations.

In the Steese National Conservation Area, manage present and historical caribou habitat as a primary land use. Emphasis would be placed on managing the area to maintain the opportunity for the Fortymile caribou herd to utilize both present and historical use areas.

Domestic sheep, goats, and camelids (including alpaca & llama) are not allowed in Dall sheep habitat.

In caribou winter range, plan travel management and development of facilities (such as maintained trails and cabins), in a manner that would result in a level of off-trail over-snow vehicular travel that would maintain continued availability of the area for use by wintering caribou. Develop

adaptive management standards and strategies. Monitor over-snow motorized use in these areas and, if it approaches a level which may result in reduced use by wintering caribou, implement changes in maintained trails. If necessary, limited area or season closures may be enacted.

Manage the caribou migration corridor on BLM-managed lands (Map 68) as follows:

- Closed to mineral location, entry, and leasing.
- Limit summer motorized travel to existing routes or designated trails. Route density would be limited to ensure free movement of caribou between upper Birch Creek, the north Steese National Conservation Area, and the White Mountains NRA.
- Consider impacts of developments in the corridor, including state and private land, and ensure it does not significantly impact the ability of caribou to migrate to historically used and biologically important habitats. Through activity level planning, develop a management threshold density goal for BLM lands, limiting linear disturbance per unit area. Propose a cooperative effort with ADNR and ADF&G to develop a plan to maintain connectivity of habitat in the area.

## **2.8.2.1.2. Resource Uses**

### **2.8.2.1.2.1. Forest and Woodland Products**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.1, the following decisions would apply under Alternative B:

#### **DECISIONS:**

Personal use of timber would be allowed on all lands, except within the Steese SRMA (inclusive of the Steese National Conservation Area and Birch Creek WSR).

Commercial timber salvage sales would be allowed on all lands, except within the Steese SRMA (inclusive of the Steese National Conservation Area and Birch Creek WSR).

Commercial timber sales (large or small) would be allowed on all lands, except within the Steese SRMA (inclusive of the Steese National Conservation Area and Birch Creek WSR).

Commercial use of forest products (such as mushrooms, berries, or bark) would be allowed on all lands, except within the Steese SRMA (inclusive of the Steese National Conservation Area and Birch Creek WSR).

### **2.8.2.1.2.2. Land Tenure**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.2, the following decisions would apply under Alternative B:

#### **DECISIONS:**

#### **Zone 1 lands (lands identified for retention or acquisition):**

Lands within the Steese National Conservation Area would be retained in accordance with Section 402(b) of ANILCA; Recommend retaining Birch Creek WSR Corridor and Central Administrative Site (PLO 519).

Consider acquisition of private land inholdings from willing sellers within areas identified as Zone 1.

Consider acquisition of state inholdings within the proclaimed boundary of the Steese National Conservation Area, including approximately 15,000 acres of State lands located within the boundaries of the Steese National Conservation Area (FM, T. 7N., R.8E., and FM, T. 10N., R. 13E.).

Consider acquisition of lands conveyed to the State between the southern boundary of the North Steese National Conservation Area Unit and the Pinnell Mountain Trail (FM, T. 7N, R. 9E., T.8N., R. 9E., and T. 8N, R.10E).

#### Zone 2 lands:

Consider acquisition, or disposal, including exchange, of scattered parcels around Circle for the purposes of consolidation.

#### Zone 3 lands (lands identified for disposal):

If federal mining claims located outside of the Steese National Conservation Area and Birch Creek WSR Corridor become null and void, and are not conveyed to the State, consider these lands for disposal or exchange. If needed, modify existing public land orders to allow for disposal.

### **2.8.2.1.2.3. Land Use Authorizations**

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.3, the following decisions would apply under Alternative B:

Retain two of the existing transportation and right-of-way corridors in the Steese National Conservation Area and manage consistent with BLM Manual 6220: the Montana Creek to Preacher Creek Corridor in the North Steese National Conservation Area Unit and the Great Unknown Creek Corridor in the South Steese National Conservation Area Unit (Map 49).

In order to prevent proliferation of rights-of-way, all rights-of-way would, as far as possible, be located in one of these two corridors. If it were to become necessary for a right-of-way to extend beyond a corridor, existing trails would be followed whenever possible. Several users might be required to use the same right-of-way and to jointly maintain it. Holders of rights-of-way for roads or trails would be required to allow public access for recreation, unless there is a compelling reason to deny such access.

The Steese ACEC, Mount Prindle RNA, Big Windy Hot Springs RNA, and Birch Creek WSR Corridor would be designated as rights-of-way avoidance areas, except within the designated transportation corridors.

### **2.8.2.1.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals.

### **2.8.2.1.2.4.1. Fluid Leasable Minerals**

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.1, the following decisions would apply under Alternative B:

Approximately 1,233,000 acres in the following areas would be closed to fluid leasable minerals (Map 33):

- The Steese SRMA (inclusive of the Steese National Conservation Area and Birch Creek WSR)
- Zone 3 disposal land (federal mining claims outside Steese National Conservation Area and Birch Creek WSR)
- BLM's Central Administrative Site

Approximately 31,000 acres would be open to fluid mineral leasing, subject to major constraints, such as no surface occupancy (Map 33).

The remainder of the subunit, approximately 3,000 acres, would be open to leasing, subject to Standard Lease Terms.

### **2.8.2.1.2.4.2. Solid Leasable Minerals**

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.2, the following decisions would apply under Alternative B:

The same areas that are closed to fluid leasable minerals, approximately 1,233,000 acres, would also be closed to solid leasable minerals (Map 33):

Approximately 31,000 acres would be open to solid mineral leasing, subject to major constraints, such as no surface occupancy (Map 33).

The remainder of the subunit, approximately 3,000 acres, would be open to leasing, subject to standard leasing stipulations.

### **2.8.2.1.2.4.3. Locatable Minerals**

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.3, the following decisions would apply under Alternative B:

Approximately 1,233,000 acres in the following areas would be closed to locatable mineral entry (Map 32):

- The Steese SRMA (inclusive of the Steese National Conservation Area and Birch Creek WSR)
- Zone 3 disposal land (federal mining claims outside the Steese National Conservation Area and Birch Creek WSR)
- BLM's Central Administrative Site

All remaining lands in the Steese Subunit, approximately 34,000 acres, would be open to locatable mineral entry. This includes scattered parcels near Circle.

#### 2.8.2.1.2.4.4. Salable Minerals

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.4, the following decisions would apply under Alternative B:

The Steese Special Recreation Management Area (Map 44) would be closed to salable minerals (1,233,000 acres).

All remaining lands in the Steese Subunit would be open to salable minerals.

#### 2.8.2.1.2.5. Recreation

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.6, the following decisions would apply under Alternative B:

##### Recreation Management Areas

The Steese SRMA would include 1,246,000 acres of lands including the Steese National Conservation Area, the Birch Creek WSR, and lands adjacent to the WSR corridor (Map 49). The SRMA includes approximately 15,000 acres of state inholdings. Under this alternative, the Steese SRMA would include seven Recreation Management Zones (RMZ), the management of which are described in Section H.2.1, "Steese Alternative B".

**Table 2.13. Steese Recreation Management Zones, RSC Settings and OHV Designations, Alternative B**

Name	Acres	RSC Setting <sup>a b</sup>	OHV Designation
Birch Creek RMZ	87,000	Semi-Primitive	LIMITED
Pinnell Mountain Trail RMZ	16,000	Primitive	LIMITED
Mount Prindle RNA RMZ	3,000	Primitive	CLOSED
Big Windy RNA RMZ	160	Primitive	CLOSED
Preacher Creek RMZ	519,000	Primitive	LIMITED
Harrison Creek RMZ	124,000	Backcountry	LIMITED
Wolf Creek RMZ	497,000	Primitive	LIMITED
Other BLM lands	36,000	N/A	LIMITED

<sup>a</sup>Table 2.5

<sup>b</sup>RSC are descriptive conditions describing management parameters at the implementation level. These are not land use planning decisions

#### 2.8.2.1.2.6. Travel Management

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative B.

## DECISIONS:

Under Alternative B, the entire Steese Subunit would be delineated as a Travel Management Area. For lands within the SRMA, specific Travel Management Zones (TMZs) have also been delineated and are the same polygons used to define the Recreation Management Zones (RMZs) and subsequent Recreation Opportunity Spectrum (RSC) settings for this alternative. Each TMZ also contains a specific OHV designation of Open, Limited, or Closed (Table 2.13, "Steese Recreation Management Zones, RSC Settings and OHV Designations, Alternative B").

It is not practical to define and delineate a comprehensive travel management network for the Steese subunit in this plan due to incomplete route data, size and the complexity of the area. A map of preliminary (existing) routes (Map 49) and interim management prescriptions would be utilized (see below) until such time as a Comprehensive Travel Management Plan could be completed.

Accurate route information is needed to complete a comprehensive travel management network. This data would be acquired utilizing a combination of methods, including overflights and on-the-ground mapping with GPS. Once the signed ROD for the RMP is released, additional data would be collected and a Comprehensive Travel Management Plan would be completed through interagency and public collaboration.

The OHV prescriptions vary by Recreation Management Zone and are described below. Under this alternative, snowmobiles are limited to 50 inches or less in width and 1,000 pounds or less curb weight.

### Interim Travel Management Prescriptions Common to All Lands

Two transportation and rights-of-way corridors would be utilized (Montana Creek to Preacher Creek Corridor and Great Unknown Creek Corridor).

All forms of non-motorized use would be allowed, except for the use of pack goats in Dall Sheep habitat.

Aircraft use would be unrestricted (except in Primitive Zones), with the following provisions: Minimal clearing of rocks, downed logs, and brush would be allowed; and use of gravel bars and winter snow areas would be allowed, subject to reasonable provisions to protect the values of "wild" river segments; construction or formal improvements of landing areas would require a permit.

New restrictions could be developed for the purposes of site protection, visitor safety, and/or enhancing recreational opportunities, experiences and outcomes.

In areas designated as Limited, subject to reasonable regulations and with a free permit, Federally Qualified Subsistence Users may be permitted to use OHVs 50 inches or less in width, and 1,000 pounds curb weight and less for subsistence purposes (ANILCA 811) during the summer. Permits would be free and widely available.

### Interim Travel Management Prescriptions for All Primitive Zones

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles 50 inches or less in width, and weighing 1,000 pounds curb weight and less would be allowed, except in Research Natural Areas which are closed to OHV use.

A permit or approved Plan of Operations would be required for all other OHV use.

The Pinnell Mountain National Recreation Trail is closed to motorized use. BLM has installed trail structures along the trail, such as boardwalks and switchbacks, to facilitate hikers in the summer. These structures could be damaged by OHV use.

Aircraft landings would be allowed within the Primitive Zones, with the following provisions: No clearing of vegetation would be allowed without a permit.

The use of hovercraft, airboats, and personal watercraft would not be allowed.

In areas with a Closed OHV designation (Research Natural Areas) subject to reasonable regulations, a free permit may be issued for access via snowmobiles for traditional activities and for travel to and from villages and homesites (ANILCA Sec. 1110). Similarly, federally Qualified Subsistence Users, subject to reasonable regulations and with a free permit, can use snowmobiles or other means of surface transportation traditionally employed for subsistence purposes (ANILCA Sec. 811) in areas with use limitations for casual users. Free permits may be obtained in person, by mail, and by phone from the BLM Fairbanks District Office and other appropriate locations.

**RATIONALE:** The federal government established a system of Research Natural Areas (RNAs) in 1927. RNAs are tracts of federal land and water established and managed for the primary purpose of research and education (43 CFR 8223.0-1). RNAs were selected to contain examples of significant natural ecosystems, areas suitable for ecological study, and rare species of plants and animals. Federal and state agencies have cooperated in Alaska since 1973 in selecting, documenting, and describing RNAs.

Four RNAs were designated in the planning area in 1986 (BLM 1986a and 1986b). The RNAs were designated to provide areas where natural ecosystems and processes are undisturbed so that they can be studied and understood, and to provide an undisturbed area for comparison with other areas so that effects of management and use can be assessed. The principle of maintaining reference conditions for scientific comparison is basic to the purposes of the system of RNAs.

Motorized vehicle access in the RNAs, including snowmobile use in winter, has the potential to damage vegetation, geologic structures, and soils. Any such disturbance has the potential to reduce the value of the area for future research by altering natural conditions. Although specific natural features were identified prior to designation and in reports for each RNA, other features could be equally valuable in future research. In other words, it is not possible now to identify what resources will be most valuable later for scientific study.

Although snow cover and frozen ground is considered adequate to protect vegetation and soils from snowmobiles in most areas, effects on vegetation do often occur from such use. Shrubs and small trees near or above the snow surface can be damaged and broken. The spinning of a snowmobile track can quickly remove considerable snow cover, especially high-power machines with paddle tracks. On steep slopes (typical in many of the RNAs), high snow depths may be required to avoid impacting low vegetation and ground cover. Repeated travel on trails can pack snowcover, decreasing insulation value of the snow, and in some places cause subsurface water flow to occur on the surface and "glaciating" to occur. The later melt of this ice in spring can impact vegetation growth and change vegetation type.

#### Interim Travel Management Prescriptions for All Semi-Primitive, and Backcountry Zones

Same as Management Common to All Lands, with the following additions:

All forms of non-motorized use allowed. Motorboat use allowed without specific authorization consistent with ANILCA Sections 1110(a) and 811. However, airboats, hovercraft, and personal watercraft would not be permitted on non-navigable segments above the confluence of Birch Creek and an unnamed creek in T. 6N., R. 17E., Section 8.

Cross-country winter use (October 15 through April 30) of snowmobiles 50 inches or less in width, and weighing 1,000 pounds curb weight and less would be allowed, except in Research Natural Areas which are closed to OHV use.

A permit or approved Plan of Operations would be required for all other OHV use.

**RATIONALE:** The Wild and Scenic Rivers Act states that rivers classified as “wild” are generally inaccessible except by trail, and are to represent vestiges of primitive America (Wild and Scenic Rivers Act, Section 2). Birch Creek WSR has outstandingly remarkable recreational value as an accessible, freshwater and whitewater, wild river providing a multi-day Primitive floating and camping experience which is considered unique. Birch Creek has been managed for a primitive experience for the past 30 years since its designation and classification as a “wild” river. Airboats, hovercraft and personal watercraft generate noise levels which are disruptive to some recreationists and would diminish the Semi-Primitive experience managed for and expected by those recreationists on a “wild” river. These types of use are not considered compatible with the values for which the “wild” river is to be managed.

Birch Creek has outstandingly remarkable fish values due to its high species diversity and high quality habitat. Prohibiting the use of hovercraft, airboats, and personal watercraft would protect and enhance these outstandingly remarkable values. It would also reduce disturbance of sensitive wildlife species, such as nesting peregrine falcons.

Prohibiting the use of hovercraft, airboats, and personal watercraft in the Steese National Conservation Area would also help protect Semi-Primitive and Backcountry recreational settings by reducing noise and motorized use levels.

#### Interim Travel Management Prescriptions for Other BLM lands Outside the SRMA

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles 50 inches or less in width, and weighing 1,000 pounds curb weight and less would be allowed, except in Research Natural Areas which are closed to OHV use.

A permit or approved Plan of Operations would be required for all other OHV use.

#### **2.8.2.1.2.7. Withdrawals**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.8, the following decisions would apply under Alternative B:

Recommend retaining PLO 519, for a BLM administrative site (7.11 acres) at Central, Alaska.

Recommend retaining the ANILCA withdrawal in the Steese National Conservation Area, keeping the area closed to locatable mineral entry and mineral leasing.

Outside of the Steese National Conservation Area, approximately 1,600 acres would be closed to locatable mineral entry to include any lands that are within the Birch Creek WSR Corridor that are not withdrawn under ANILCA or by the WSR Act, for the purposes of protecting the water quality and Outstandingly Remarkable Values of the river.

Outside of the Steese National Conservation Area, approximately 16,400 acres would be closed to locatable mineral entry in those parts of the Birch Creek, Pinnell Mountain Trail, and Preacher Creek RMZs that are outside of the ANILCA withdrawals.

Land tenure Zone 3 lands (Appendix G, *Land Tenure*) will be closed to mineral leasing and location to prevent encumbrance. As needed, recommend modification of public land orders to allow for disposal of these parcels while keeping them closed to mineral entry and mineral leasing.

### **2.8.2.1.3. Special Designations**

#### **2.8.2.1.3.1. Areas of Critical Environmental Concern**

##### DECISIONS:

Approximately 924,000 acres would be designated as the Steese ACEC (Map 64) to protect the relevant and important values, which include current and historical calving and postcalving habitat for the Fortymile caribou herd and Dall Sheep habitat. This is the same area designated in Alternative C. Management of the area, however, varies from that proposed in Alternative C.

The ACEC would remain closed to locatable and leasable mineral entry subject to valid existing rights. A mining Plan of Operations would be required on any mining activity within an ACEC (43 CFR 3809.11).

Ungulate mineral licks: Within a distance of one mile of designated ungulate mineral licks, limit all permitted uses and development of facilities for permitted uses, from May 10 through August 31 to activities which would not reduce sheep use of licks.

Allowed uses would be managed to maintain caribou and Dall sheep habitat. The area is and would remain generally free of summer motorized vehicle use (May 1 through October 14 sheep habitat; May 10 through July 15 remainder). (For example, summer motorized vehicle use, in the few areas of the ACEC where allowed, would be restricted to a limited set of trails.) In locations where summer motorized use is currently allowed and vehicle trails are currently established, motorized vehicle use would be limited to select existing routes (or as determined through future travel management planning). Where the ACEC overlays Middlecountry RMZs and OHV trail construction and other development may be planned; manage the area to maintain its value as caribou and Dall sheep habitat as well as to meet the objectives for that RMZ. Designated trails and other developments may be established in this Zone if limited in density and compatible with caribou and Dall sheep habitat.

Winter motorized use in Dall sheep habitat is currently minimal, but would be monitored and, if use begins to approach a level which may result in altered distribution of Dall sheep, such use may be restricted in the future through alteration of maintained trails or, if necessary, closures of limited areas and/or time periods.

## SUMMARY OF MANAGEMENT IN THE ACEC

The following summarizes other management decisions that would apply within the ACEC. No salable mineral disposal would be authorized within the ACEC. The ACEC would be retained in federal land status (land tenure Zone 1) and would be a right-of-way avoidance area. Land use permits and leases would be considered, subject to constraints for ungulate mineral licks. Standard Operating Procedures (Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) would apply to activities requiring a permit from BLM.

The ACEC includes Primitive, Semi-Primitive, and Backcountry RMZs. The OHV designation is closed in the Primitive Zones and limited in the other zones. No motorized use is allowed in the Primitive Zones except by permit. Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed in Semi-Primitive and Backcountry Zones. Summer use of OHVs would not be allowed in the Semi-Primitive and Backcountry Zones except by permit. A full description of the OHV limitations can be found in section 2.8.2.1.2.6 Travel Management.

### **2.8.2.1.3.2. Research Natural Areas**

#### DECISIONS:

Under Alternative B, the two existing Research Natural Areas (RNAs) would be maintained: the Mount Prindle RNA (2,800 acres) and Big Windy Hot Springs RNA (160 acres).

Management would be similar to Alternative A with the following additions: RNAs would be designated as rights-of-way avoidance areas and closed to salable minerals. As in Alternative A, the RNAs would be closed to off-road vehicles and camping to avoid disturbing research projects. Natural processes, including wildland fire, would be allowed to continue with as little interference as possible. Primitive campsites could be established outside the RNA boundaries. Access into the RNA could then be gained by developed trails. Hiking, hunting, and nature appreciation would be allowed. The RNAs would be closed to mineral entry and mineral leasing. No surface-disturbing activities allowed except BLM-authorized research projects and primitive hiking trails.

### **2.8.2.1.3.3. Wild and Scenic Rivers**

#### DECISIONS:

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

The outstandingly remarkable values for Birch Creek WSR are scenic, recreation, and fish as described in Section E.2.1, "Outstanding Remarkable Values for Birch Creek".

Under Alternative B, Big Windy Creek would be recommended as suitable for designation according to its eligibility class.

River Name	Classification	Outstandingly Remarkable Values	Miles
Big Windy Creek	"wild"	scenic, wildlife, and geologic	14

RATIONALE: Big Windy Creek is free-flowing and possesses outstandingly remarkable values as described in Section E.1.1, “Determining Eligibility”. All eligible rivers are recommended suitable in one alternative for the purpose of analyzing impacts of designation.

## **2.8.2.2. Alternative C: Steese Subunit**

### **2.8.2.2.1. Resources**

#### **2.8.2.2.1.1. Cave and Karst Resources**

GOAL: Manage significant cave and karst systems to protect and maintain their resource, educational, scientific, and recreational values in accordance with the Federal Caves Resource Protection Act of 1988 and 43 CFR 37.11.

#### DECISIONS:

Manage Sheep Cave, AK-028-003, as a significant cave.

Management objective: Preserve Sheep Cave for scientific use and values.

Setting Prescription: Semi-Primitive

Administrative designation: Located within the Steese ACEC (Map 64). No additional designation recommended.

#### **2.8.2.2.1.2. Cultural Resources**

#### DECISIONS:

Same as Alternative B, all cultural sites are designated for scientific use.

#### **2.8.2.2.1.3. Fish and Aquatic Species**

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.2.3, the following decisions would apply under Alternative C:

The following 18 watersheds would be managed as RCAs (Map 9):

1. Birch Creek (HUC # 190404020212)
2. Birch Creek (HUC # 190404020207)
3. Birch Creek (HUC # 190404020601)
4. Birch Creek (HUC # 190404020606)
5. Fourteenmile Creek-Yukon River (HUC # 190404011906)
6. George Creek-Birch Creek (HUC # 190404020903)
7. Headwaters North Fork Preacher Creek (HUC # 190404021102)
8. Lower North Fork Preacher Creek (HUC # 190404021105)
9. McLean Creek-Birch Creek (HUC # 190404020401)

10. Middle Preacher Creek (HUC # 190404021202)
11. Middle North Fork Preacher Creek (HUC # 190404021104)
12. Ninety-eight Pup-Preacher Creek (HUC # 190404021009)
13. Pitkas Bar (HUC # 190404020408)
14. Preacher Creek (HUC # 190404021005)
15. Thomas Creek-Birch Creek (HUC # 190404020403)
16. Upper North Fork Preacher Creek (HUC # 190404021103)
17. Yukon River (HUC # 190404011903)
18. Yukon River (HUC # 190404011904)

Same as Alternative B, the following watersheds would be identified as a High Priority Restoration Watershed and be emphasized for active restoration.

1. Harrison Creek (HUC # 190404020406)
2. Twelve-mile Creek (HUC # 190404020205)
3. North Fork Birch Creek (HUC # 190404020206)
4. Volcano-Clums Fork (HUC # 190404020306)

Complete watershed assessments Section I.5, "Watershed Assessment Process" as necessary for management.

#### **2.8.2.2.1.4. Visual Resources**

Proposed VRM classes for Alternative C are displayed on Map 21. Recreation Management Zones are displayed on Map 50. Areas where wilderness characteristics would be maintained are displayed on Map 75.

#### **DECISIONS:**

Birch Creek RMZ (inclusive of Birch Creek WSR) with an RSC Class of Semi-Primitive would be managed as VRM Class I. The Mount Prindle RNA, and Big Windy RNA RMZs with a RSC Class of Primitive would also be managed as VRM Class I. Management of VRM Class I areas is to preserve the existing characteristics of the landscape, but allow for limited management activities where changes should be very low and must not attract the attention of the casual observer.

The Pinnell Mountain, Wolf Creek and Rock Creek RMZs with a RSC Class of Semi-Primitive would be managed as VRM Class II. The Rocky Mountain Uplands RMZ (RSC of Backcountry) would also be managed as VRM Class II. In VRM Class II areas, developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with minor changes to landform and vegetation.

The Preacher Creek and Clums RMZs with a RSC Class of Middlecountry and Harrison Creek RMZ with a RSC Class of Frontcountry would be managed as VRM Class IV.

Areas to be managed for wilderness characteristics associated with Birch Creek, Mount Prindle RNA and Big Windy RNA RMZs would be managed as VRM Class I; while those areas associated with Pinnell Mountain, Wolf Creek, Rock Creek and Rocky Mountain Uplands would be managed as VRM Class II.

All remaining BLM-managed lands not within the Steese Special Recreation Management Area (inclusive of the Steese National Conservation Area and Birch Creek WSR Corridor) would be assigned a VRM Class IV. In VRM Class IV areas, management actions would be taken to protect

the Wild and Scenic River view shed and adjacent VRM Classes. Development activities would be designed to harmonize with the visually dominating elements of the surrounding landscape characteristics of line, form, color and texture. Major modification of the natural landscape would be allowed.

#### **2.8.2.2.1.5. Wilderness Characteristics**

##### **OBJECTIVE:**

Allow for multiple use while maintaining naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on 647,000 acres so that these lands retain their wilderness characteristics for the life of the RMP.

##### **DECISIONS:**

Consistent with allocation decisions in the RMP, allow other multiple-uses on lands where wilderness characteristics would be maintained, while applying management restrictions (such as conditions of use or mitigation measures) to avoid or minimize impacts to wilderness characteristics and meet the objective retaining wilderness characteristics over the life of the RMP.

Wilderness characteristics would be maintained on 647,000 acres (51 percent of the lands with wilderness characteristics in this subunit). These lands occur within the Primitive, Semi-Primitive, and Backcountry Recreation Management Zones within the Steese National Conservation Area and upper Birch Creek WSR Corridor (Map 75).

**RATIONALE:** Wilderness characteristics would be maintained by decisions in this alternative to close these areas to mineral leasing, retain existing ANILCA mining closures, manage for VRM class I or II, retain lands in federal management, manage for Primitive, Semi-Primitive and Backcountry recreational settings, and set OHV designations. Additionally, BLM-authorized uses would be further analyzed through the NEPA process for impacts to size, naturalness, primitive recreation, and solitude, and stipulated mitigation measures would be applied where needed to minimize impacts. Management of these areas to protect Birch Creek and caribou range, while emphasizing primitive, semi-primitive, and backcountry recreational opportunities would be consistent with maintenance of wilderness characteristics. Due to the high cost of resource extraction and limited access in the Steese Subunit, it is likely that wilderness characteristics would remain on more than 51 percent of the lands over the life of the plan.

#### **2.8.2.2.1.6. Wildlife**

In addition to the decisions listed as Common To All Subunits in section 2.6.2.13, the following decisions would apply under Alternative C. Additional wildlife related decisions are found in section 2.8.2.2.3 Special Designations.

##### **DECISIONS:**

Same as Alternative B, except for the following:

Only portions of the caribou migration corridor are closed to mineral location, entry, and leasing.

Casual use of domestic sheep, goats, and camelids (including alpaca & llama), would not be prohibited in Dall sheep habitat.

## **2.8.2.2.2. Resource Uses**

### **2.8.2.2.2.1. Forest and Woodland Products**

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.1, the following decisions would apply under Alternative C:

Personal use of timber would be allowed on all lands, except within the Birch Creek WSR Corridor, Mount Prindle RNA, and Big Windy Hot Springs RNA.

Commercial timber salvage sales would be allowed on all lands (including the Steese National Conservation Area).

Commercial timber sales (large or small) would be allowed on all lands, except within the Birch Creek WSR Corridor, Mount Prindle RNA, and Big Windy Hot Springs RNA.

Commercial use of forest products would be allowed on all lands, except within the Mount Prindle and Big Windy Hot Springs RNAs.

### **2.8.2.2.2.2. Land Tenure**

#### DECISIONS:

Land tenure decisions would be the same as Alternative B.

### **2.8.2.2.2.3. Land Use Authorizations**

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.3, the following decisions would apply under Alternative C:

Same as Alternative B, two transportation corridors would be retained and managed consistent with BLM Manual 6220: the Montana Creek to Preacher Creek Corridor in the North Steese National Conservation Area Unit and the Great Unknown Creek Corridor in the South Steese National Conservation Area Unit.

There would be no rights-of-way avoidance areas.

### **2.8.2.2.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals.

#### **2.8.2.2.2.4.1. Fluid Leasable Minerals**

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.1, the following decisions would apply under Alternative C:

Approximately 993,000 acres in the following areas would be closed to fluid leasable minerals (Map 35):

- The Mount Prindle and Big Windy Hot Springs RNAs
- The Birch Creek, Rock Creek, Wolf Creek, Pinnell Mountain Trail, and Rocky Mountain Uplands RMZs
- That portion of the Clums RMZ that overlaps with the Steese ACEC
- The Bachelor Creek portion of the Preacher Creek RMZ
- The Steese ACEC
- All Riparian Conservation Areas
- Zone 3 disposal land (federal mining claims outside the Steese National Conservation Area and Birch Creek WSR Corridor)
- BLM's Central Administrative Site

Approximately 203,000 acres would be open to leasing, subject to minor constraints. This includes that portion of the Clums RMZ that does not overlap with the Steese ACEC, that portion of the Preacher RMZ that is not closed, and lands near Circle (Map 35).

All remaining lands, approximately 71,000 acres, would be open to leasing, subject to Standard Lease Terms. This includes part of the Harrison RMZ (Map 35).

#### **2.8.2.2.4.2. Solid Leasable Minerals**

DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.2, the following decisions would apply under Alternative C:

The same areas that are closed to fluid leasable minerals under this alternative, approximately 993,000 acres, would also be closed to solid leasable minerals (Map 35). The same areas open to fluid leasable minerals, would also be open to solid leasable minerals subject to the same constraints.

#### **2.8.2.2.4.3. Locatable Minerals**

DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.3, the following decisions would apply under Alternative C:

Approximately 993,000 acres in the following areas would be closed to locatable mineral entry (Map 34):

- The Mount Prindle and Big Windy Hot Springs RNAs
- The Birch Creek, Rock Creek, Wolf Creek, Pinnell Mountain Trail, and Rocky Mountain Uplands RMZs
- That portion of the Clums RMZ that overlaps with the Steese ACEC
- The Bachelor Creek portion of the Preacher Creek RMZ
- The Steese ACEC
- All Riparian Conservation Areas

- Zone 3 disposal land (federal mining claims outside the Steese National Conservation Area and Birch Creek WSR Corridor)
- BLM's Central Administrative Site
- Harrison Creek reclamation area

All remaining lands in the Steese Subunit, approximately 274,000 acres, would be open to locatable mineral entry. Within the Steese National Conservation Area, this includes most of the Harrison RMZ, part of Preacher Creek RMZ, and Clums RMZ (except that part that is within the Steese ACEC).

#### 2.8.2.2.2.4.4. Salable Minerals

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.4, the following decisions would apply under Alternative C:

Approximately 69,000 acres in the Birch Creek WSR Corridor would be closed to salable mineral.

All remaining lands in the Steese Subunit, 1,198,000 acres including the Steese National Conservation Area outside of the river corridor, would be open to salable minerals.

#### 2.8.2.2.2.5. Recreation

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.6, the following decisions would apply under Alternative C:

The Steese SRMA would include 1,246,000 acres of lands including the Steese National Conservation Area, the Birch Creek WSR Corridor and lands adjacent to the WSR corridor (Map 50). The SRMA includes 15,000 acres of state inholdings. Under this alternative, the SRMA would include 10 Recreation Management Zones (RMZs), the management of which are described in Section H.2.2, "Steese Alternative C".

**Table 2.14. Steese Recreation Management Zones, RSC Settings and OHV Designations, Alternative C**

Name	Acres	RSC Setting <sup>a b</sup>	OHV Designation
Birch Creek RMZ	99,000	Semi-Primitive	LIMITED
Pinnell Mountain Trail RMZ	16,000	Semi-Primitive	LIMITED
Mount Prindle RNA RMZ	3,000	Primitive	CLOSED
Big Windy RNA RMZ	160	Primitive	CLOSED
Preacher Creek RMZ	282,000	Middlecountry	LIMITED
Harrison Creek RMZ	114,000	Frontcountry	LIMITED
Wolf Creek RMZ	325,000	Semi-Primitive	LIMITED
Rock Creek RMZ	83,000	Semi-Primitive	LIMITED
Clums RMZ	170,000	Middlecountry	LIMITED
Rocky Mountain Uplands RMZ	154,000	Backcountry	LIMITED
Other BLM lands	36,000	N/A	LIMITED

<sup>a</sup>Table 2.5

<sup>b</sup>RSC are descriptive conditions describing management parameters at the implementation level. These are not land use planning decisions

### **2.8.2.2.2.6. Travel Management**

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative C.

#### **DECISIONS:**

Under Alternative C, the entire Steese Subunit would be delineated as a Travel Management Area. For lands within the SRMA, specific Travel Management Zones (TMZs) have also been delineated and are the same polygons defining Recreation Management Zones (RMZ) and Recreation Opportunity Spectrum (RSC) settings for this alternative. Each TMZ also contains a specific OHV designation of Open, Limited, or Closed (Table 2.14, “Steese Recreation Management Zones, RSC Settings and OHV Designations, Alternative C”).

It is not practical to define and delineate a comprehensive travel management network for the Steese Subunit in this plan due to incomplete route data, size and the complexity of the area. Instead, a map of preliminary (existing) routes (see Map 50) and interim management prescriptions would be utilized until such time as a Comprehensive Travel Management Plan could be completed.

Accurate route information is needed to complete a comprehensive travel management network. This data would be acquired utilizing a combination of methods, including overflights and on-the-ground mapping with GPS. Once the signed ROD for the RMP is released, additional data would be collected and a Comprehensive Travel Management Plan would be completed, using interagency and public collaboration.

The OHV prescriptions vary by Recreation Management Zone and are described below. Under this alternative, snowmobiles are limited to 50 inches or less in width and 1,000 pounds or less curb weight.

#### Interim Travel Management Prescriptions Common to All Lands

Two transportation and right-of-way corridors would be utilized (Montana Creek to Preacher Creek Corridor and Great Unknown Creek Corridor).

All forms of non-motorized use would be allowed.

Aircraft use would be unrestricted (except in Primitive Zones), with the following provisions: Minimal clearing of rocks, downed logs, and brush would be allowed; construction or formal improvement of landing areas would occur by permit only; and use of gravel bars and winter snow areas would be allowed, subject to reasonable provisions to protect the values of “wild” river segments.

New restrictions could be developed for the purposes of site protection, visitor safety, and/or enhancing recreational opportunities, experiences and outcomes.

#### Interim Travel Management Prescriptions for All Primitive Zones

Same as Management Common to All Lands, with the following additions:

A permit or approved Plan of Operations would be required for all OHV use.

Aircraft landings would be allowed within the Primitive Zones, with the following provisions: No clearing of vegetation would be allowed without a permit.

The use of hovercraft, airboats, and personal watercraft would not be allowed.

In areas with a Closed OHV designation (Research Natural Areas) subject to reasonable regulations, a free permit may be issued for access via snowmobiles for traditional activities and for travel to and from villages and homesites (ANILCA Sec. 1110). Similarly, federally Qualified Subsistence Users, subject to reasonable regulations and with a free permit, can use snowmobiles or other means of surface transportation traditionally employed for subsistence purposes (ANILCA Sec. 811) in areas with use limitations for casual users. Free permits may be obtained in person, by mail, and by phone from the BLM Fairbanks District Office and other appropriate locations.

**RATIONALE:** The federal government established a system of Research Natural Areas (RNAs) in 1927. RNAs are tracts of federal land and water established and managed for the primary purpose of research and education (43 CFR 8223.0-1). RNAs were selected to contain examples of significant natural ecosystems, areas suitable for ecological study, and rare species of plants and animals. Federal and state agencies have cooperated in Alaska since 1973 in selecting, documenting, and describing RNAs.

Four RNAs were designated in the planning area in 1986 (BLM 1986a and 1986b). The RNAs were designated to provide areas where natural ecosystems and processes are undisturbed so that they can be studied and understood, and to provide an undisturbed area for comparison with other areas so that effects of management and use can be assessed. The principle of maintaining reference conditions for scientific comparison is basic to the purposes of the system of RNAs.

Motorized vehicle access in the RNAs, including snowmobile use in winter, has the potential to damage vegetation, geologic structures, and soils. Any such disturbance has the potential to reduce the value of the area for future research by altering natural conditions. Although specific natural features were identified prior to designation and in reports for each RNA, other features could be equally valuable in future research. In other words, it is not possible now to identify what resources will be most valuable later for scientific study.

Although snow cover and frozen ground is considered adequate to protect vegetation and soils from snowmobiles in most areas, effects on vegetation do often occur from such use. Shrubs and small trees near or above the snow surface can be damaged and broken. The spinning of a snowmobile track can quickly remove considerable snow cover, especially high-power machines with paddle tracks. On steep slopes (typical in many of the RNAs), high snow depths may be required to avoid impacting low vegetation and ground cover. Repeated travel on trails can pack snowcover, decreasing insulation value of the snow, and in some places cause subsurface water flow to occur on the surface and “glaciering” to occur. The later melt of this ice in spring can impact vegetation growth and change vegetation type.

#### Interim Travel Management Prescriptions for All Semi-Primitive and Backcountry Zones

Same as Management Common to All Lands, with the following addition:

Same as Alternative B, all forms of non-motorized use allowed. Motorboat use allowed without specific authorization consistent with ANILCA Sections 1110(a) and 811. However, airboats,

hovercraft, and personal watercraft would not be permitted on non-navigable segments above the confluence of Birch Creek and an unnamed creek in T. 6N., R. 17E., Section 8.

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

The Pinnell Mountain Trail is closed to motorized use.

**RATIONALE:** The Wild and Scenic Rivers Act (16 U.S.C. 1271-1287; P.L. 90-542 as amended) classifies rivers as “wild” which are generally inaccessible except by trail and are to represent vestiges of primitive America (Wild and Scenic Rivers Act, Section 2). Birch Creek WSR has outstandingly remarkable recreational value as a “wild” river. It is an accessible, freshwater, and whitewater river providing a unique multi-day Primitive floating and camping experience. Birch Creek has been managed for a Primitive experience for the past 30 years, since Congress designated it as a Wild and Scenic River and classified it as a “wild” river. Airboats, hovercraft and personal watercraft generate noise levels which are disruptive to some recreationists and would diminish the Semi-Primitive experience managed for and expected by those recreationists on a “wild” river. These types of use are not considered compatible with the values for which the “wild” river is to be managed.

Birch Creek has outstandingly remarkable fish values due to its high species diversity and high quality habitat. Prohibiting the use of hovercraft, airboats, and personal watercraft would protect and enhance these outstandingly remarkable values. It would also reduce disturbance of sensitive wildlife species, such as nesting peregrine falcons.

Prohibiting the use of hovercraft, airboats, and personal watercraft in the Steese National Conservation Area would also help protect Semi-Primitive and Backcountry recreational settings by reducing noise and motorized use levels.

#### Interim Travel Management Prescriptions for All Middlecountry, and Frontcountry Zones

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

Summer use (May 1 through October 14) of OHVs up to 50 inches in width, and weighing 1,000 pounds curb weight and less would be allowed on existing routes only (Map 50), except for game retrieval.

Summer use (May 1 through October 14) of highway vehicles weighing up to 10,000 pounds curb weight would be allowed on existing roads only (Map 50).

A permit or approved Plan of Operations would be required for all other OHV use (new user-created routes and cross-country travel off existing routes for any other purpose than game retrieval would not be allowed).

The use of hovercraft, airboats, and personal watercraft would not be allowed.

#### Interim Travel Management Prescriptions for Other BLM lands Outside the SRMA

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

Summer use (May 1 through October 14) of OHVs up to 50 inches in width, and weighing 1,000 pounds curb weight and less would be allowed on existing routes only (Map 50), except for game retrieval.

Summer use (May 1 through October 14) of highway vehicles weighing up to 10,000 pounds curb weight would be allowed on existing roads only (Map 50).

A permit or approved Plan of Operations would be required for all other OHV use (new user-created routes and cross-country travel off existing routes for any other purpose than game retrieval would not be allowed).

RATIONALE: Limiting the use of OHVs by weight, seasonal closure, and/or to existing routes would help maintain the appropriate recreational setting, reduce impacts to stream beds, soil, water, vegetation, fish, and wildlife; and, would help protect the National Conservation Area's scenic, scientific, and cultural resources. Prohibiting the use of hovercraft, airboats, and personal watercraft in the Steese National Conservation Area would also help protect Primitive and Backcountry recreational settings by reducing noise and motorized use.

#### **2.8.2.2.2.7. Withdrawals**

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.8, the following decisions would apply under Alternative C:

Recommend retaining the ANILCA withdrawal in the Steese National Conservation Area in the following areas (Map 34), keeping approximately 993,000 acres closed to locatable mineral entry and mineral leasing:

- Big Windy Hot Springs and Mount Prindle Research Natural Areas
- Birch Creek, Pinnell Mountain Trail, Wolf Creek, Rock Creek, and Rocky Mountains Uplands RMZs
- Steese ACEC, including that portion of the ACEC that overlaps with the Clums RMZ
- Bachelor Creek portion of the Preacher Creek RMZ
- All Riparian Conservation Areas
- 3,500 acres in the following areas in Harrison Creek to avoid new mining disturbance to lands that have been reclaimed by the BLM.
  - FM, T. 6N., R.13 E., Sec. 1, SE ¼; Sec. 10 SW ¼ and E ½; Secs. 11-12; Sec. 14 N ½ ; and Sec. 15 NE ¼.
  - FM, T. 6N., R. 14E., Sec. 5 W ½ and E ½ E ½; Sec. 6 SW ¼ and E ½; and Sec. 7 NW ¼.

Pursuant to ANILCA 402(b) recommend opening approximately 274,000 acres to locatable mineral entry and mineral leasing in the Steese National Conservation Area (Map 34).

Outside of the Steese National Conservation Area, approximately 1,600 acres would be closed to locatable mineral entry to include any lands that are within the Birch Creek WSR Corridor,

that are not withdrawn under ANILCA or by the WSR Act, for the purposes of protecting the water quality and Outstandingly Remarkable Values of the river.

Outside of the Steese National Conservation Area, approximately 16,400 acres would be recommended for withdrawal from locatable mineral entry in those parts of Birch Creek, Pinnell Mountain Trail, and Rock Creek RMZs that are outside of the ANILCA withdrawals.

Land tenure Zone 3 lands (Appendix G, *Land Tenure*) would be closed to mineral leasing and recommended for withdrawal from mineral location to prevent encumbrance. As needed, recommend modification of public land orders to allow for disposal of these parcels while keeping them closed to mineral entry and mineral leasing.

**RATIONALE:** Section 402(b) of ANILCA (43 U.S.C. 1716) allows the Secretary of the Interior to open lands in the Steese National Conservation Area to mineral leasing and development and mineral entry and location where consistent with the land use plan for the area. ANILCA 402(c) further states that mining shall be subject to reasonable regulations to assure that mining will, to the extent practicable, be consistent with the protection of the scenic, scientific, cultural, and other resources of the area. ANILCA 401(b) identifies caribou range and Birch Creek as two special values of the Steese National Conservation Area to be considered in planning and management of the area. Under Alternative C, these values would be protected by a variety of planning decisions.

The Birch Creek Recreation Management Zone (RMZ), which includes the entire Birch Creek WSR Corridor and approximately 15,000 acres of adjacent lands, would be closed to mineral entry, location, and leasing and managed for a Semi-Primitive recreational setting (Map 50). The RMZ would be managed as a VRM Class I area (Map 21). Caribou range would be protected by the designation of the Steese ACEC (Map 65), which includes current and recent historic calving and postcalving habitat for the Fortymile caribou herd and current habitat for the White Mountains caribou herd. The ACEC would remain closed to mineral entry, location, and leasing (subject to valid existing rights) and managed for a Semi-Primitive to Backcountry recreation setting. Mining activities would be subject to reasonable regulations, including the Standard Operating Procedures and Fluid Mineral Leasing Stipulations (Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) to protect caribou range and Birch Creek.

### **2.8.2.2.3. Special Designations**

#### **2.8.2.2.3.1. Areas of Critical Environmental Concern**

##### **DECISIONS:**

Under Alternative C, approximately 457,000 acres would be designated as the Steese ACEC (Map 65) to protect relevant and important values which include current and recent historic calving and postcalving habitat for the Fortymile caribou herd and Dall sheep habitat.

The ACEC would be closed to locatable mineral entry and mineral leasing subject to valid existing rights. A mining Plan of Operations would be required on any mining activity within an ACEC (43 CFR 3809.11(c)(3)).

**Ungulate mineral licks:** Within a distance of one mile of designated ungulate mineral licks, limit all permitted uses and development of facilities for permitted uses, from May 10 through August 31 to activities which would not reduce sheep use of licks.

Allowed uses would be managed to maintain caribou and Dall sheep habitat. The area is (and would remain) generally free of summer motorized vehicle use (May 1 through October 14 sheep habitat; May 10 through July 15 remainder). (For example, summer motorized vehicle use in the few areas of the ACEC where allowed (Middlecountry RMZ), would be restricted to a limited set of trails.) In locations where summer motorized use is currently allowed and vehicle trails are currently established, motorized vehicle use would be limited to select existing routes (or as determined through future travel management planning). Where the ACEC overlays Middlecountry RMZs (and OHV trail construction and other development may be planned), manage the area to maintain its value as caribou and Dall sheep habitat as well as to meet the objectives for that RMZ. Designated trails and other developments may be established in this Zone if limited in density and compatible with caribou and Dall sheep habitat.

Winter motorized use in Dall sheep habitat is currently minimal, but would be monitored and, if it begins to approach a level which may result in altered distribution of Dall sheep, such use may be restricted in the future (through alteration of maintained trails or, if necessary, closures of limited areas and/or time periods).

### SUMMARY OF MANAGEMENT IN THE ACEC

The following is a summary of other management decisions that would apply within the ACEC. Salable mineral disposal could be authorized within the ACEC. The ACEC would be retained in federal land status (land tenure Zone 1). Land use permits and leases would be considered, subject to constraints for ungulate mineral licks. Standard Operating Procedures (Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) would apply to activities requiring a permit from BLM.

The ACEC includes Primitive, Semi-Primitive, Backcountry, and Middlecountry Recreation Management Zones (RMZs). The OHV designation is closed in the Primitive Zones and limited in the other zones. No motorized use is allowed in the Primitive Zones (the RNAs) except by permit. Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed in all other zones. Summer use of OHVs would not be allowed in the Semi-Primitive and Backcountry Zones except by permit. Summer use (May 1 through October 14) of OHVs weighing 1,000 pounds curb weight and less would be allowed on existing routes only (Map 50). A full description of the OHV limitations can be found in section 2.8.2.2.2.6 Travel Management.

#### **2.8.2.2.3.2. Research Natural Areas**

##### DECISIONS:

Under Alternative C, the two designated Research Natural Areas (RNAs) are: the Mount Prindle RNA (2,800 acres) and Big Windy Hot Springs RNA (160 acres).

Management would be similar to Alternative A. The RNAs would be closed to off-road vehicles. Natural processes, including wildland fire, would be allowed to continue with as little interference as possible. Hiking, hunting, and nature appreciation would be allowed. The RNAs would be closed to mineral entry and mineral leasing. No surface-disturbing activities allowed except BLM-authorized research projects and primitive hiking trails.

Under this alternative Primitive camping and hiking trails would be allowed in the RNAs.

### **2.8.2.2.3.3. Wild and Scenic Rivers**

#### DECISIONS:

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

Under Alternative C, no river segments would be recommended as suitable for designation.

**RATIONALE:** There is no known federal, public, state, Tribal, local, or other interests in the designation. The State is opposed to the designation. Big Windy is within the Steese National Conservation Area and in all alternatives in this EIS, this area would be closed to mineral entry and would have a suite of management decisions that would protect the ORVs of this river. Because of these reasons, Big Windy has been determined to be not suitable for designation under Alternatives C and D.

### **2.8.2.3. Alternative D: Steese Subunit**

#### **2.8.2.3.1. Resources**

##### **2.8.2.3.1.1. Cave and Karst Resources**

**GOAL:** Manage significant cave and karst systems to protect and maintain their resource, educational, scientific, and recreational values in accordance with the Federal Caves Resource Protection Act of 1988 and 43 CFR 37.11.

#### DECISIONS:

Manage Sheep Cave, #AK-028-003, as a significant cave.

Management objective: Preserve Sheep Cave #AK-028-003 for scientific use and values.

Setting Prescription: Backcountry

Administrative designation: Located within the Steese ACEC (at a mineral lick). No additional designation is recommended.

##### **2.8.2.3.1.2. Cultural Resources**

#### DECISIONS:

Same as Alternative B.

##### **2.8.2.3.1.3. Fish and Aquatic Species**

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.2.3, the following decisions would apply under Alternative D:

The following eight watersheds would be managed as Riparian Conservation Areas (Map 10):

1. Birch Creek (HUC # 190404020212)

2. Birch Creek (HUC # 190404020601)
3. Birch Creek (HUC # 190404020606)
4. Birch Creek (HUC # 190404020207)
5. George Creek-Birch Creek (HUC # 190404020903)
6. McLean Creek-Birch Creek (HUC # 190404020401)
7. Pitkas Bar (HUC # 190404020408)
8. Thomas Creek-Birch Creek (HUC # 190404020403)

Same as Alternative B, the following watersheds would be identified as High Priority Restoration Watersheds and be emphasized for active restoration.

1. Harrison Creek (HUC # 190404020406)
2. Twelve-mile Creek (HUC # 190404020205)
3. North Fork Birch Creek (HUC # 190404020206)
4. Volcano-Clums Fork (HUC # 190404020306)

Complete watershed assessments Section I.5, "Watershed Assessment Process" as necessary for management.

#### **2.8.2.3.1.4. Visual Resources**

Proposed VRM classes for Alternative D are displayed on Map 22. Recreation Management Zones (RMZ) are displayed on Map 51. Areas where wilderness characteristics would be maintained are displayed on Map 76.

#### **DECISIONS:**

Birch Creek RMZ (inclusive of Birch Creek WSR) with an RSC Class of Semi-Primitive would be managed as VRM Class I. The Mount Prindle RNA, and Big Windy RNA RMZs with a RSC Class of Primitive would also be managed as VRM Class I. Management of VRM Class I areas is to preserve the existing characteristics of the landscape, but allow for limited management activities where changes should be very low and must not attract the attention of the casual observer.

The Pinnell Mountain RMZ with a RSC Class of Semi-Primitive would be managed as VRM Class II. The Rocky Mountain Uplands and Wolf Creek RMZs with a RSC of Backcountry would also be managed as VRM Class II. In VRM Class II areas, developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with minor changes to landform and vegetation.

The Preacher Creek and Clums RMZs with a RSC Class of Middlecountry and Harrison Creek RMZ with a RSC Class of Frontcountry would be managed as VRM Class IV.

Areas to be managed for wilderness characteristics associated with Birch Creek, Mount Prindle and Big Windy RNA RMZs would be managed as VRM Class I; while those associated with the Pinnell Mountain, Rocky Mountain Uplands and Wolf Creek RMZs would be managed as VRM Class II.

All remaining BLM-managed lands not within the Steese Special Recreation Management Area (inclusive of the Steese National Conservation Area and Birch Creek WSR Corridor) would be assigned a VRM Class IV. In VRM Class IV areas, management actions would be taken to protect the Wild and Scenic River view shed and adjacent VRM Classes. Development activities would be designed to harmonize with the visually dominating elements of the surrounding landscape

characteristics of line, form, color and texture. Major modification of the natural landscape would be allowed.

#### **2.8.2.3.1.5. Wilderness Characteristics**

##### **OBJECTIVE:**

Allow for multiple use while maintaining naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on 483,000 acres so that these lands retain their wilderness characteristics for the life of the RMP.

##### **DECISIONS:**

Consistent with allocation decisions in the RMP, allow other multiple-uses on lands where wilderness characteristics would be maintained, while applying management restrictions (such as conditions of use or mitigation measures) to avoid or minimize impacts to wilderness characteristics and meet the objective retaining wilderness characteristics over the life of the RMP.

Under Alternative D, Wilderness characteristics would be maintained on 483,000 acres (38 percent of the lands with wilderness characteristics in this subunit). These lands occur within the Primitive, Semi-Primitive and Backcountry Recreation Management Zones in the Steese National Conservation Area (Map 76).

**RATIONALE:** Wilderness characteristics would be maintained by decisions in this alternative to close these areas to mineral leasing, retain existing ANILCA closures to mining, manage for VRM class I or II, retain lands in federal management, manage for Primitive, Semi-Primitive and Backcountry recreational settings, and set OHV designations. Management to protect Birch Creek and caribou range, while providing for semi-primitive and backcountry recreational opportunities would be consistent with maintenance of wilderness characteristics. Due to the high cost of resource extraction and limited access in the Steese Subunit, it is likely that wilderness characteristics would remain on more than 38 percent of the lands over the life of the plan.

#### **2.8.2.3.1.6. Wildlife**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.2.13, the following decisions would apply under Alternative D. Additional wildlife related decisions are found in section 2.8.2.3.3 Special Designations.

Management of the caribou migration corridor (Map 68) on BLM lands would be the same as Alternative C, except the corridor would be maintained by addressing potential effects on caribou migration prior to BLM authorizations for use within the corridor, rather than limiting motorized use to existing or designated routes or developing management threshold density goals and a cooperative plan to maintain connectivity of the corridor as described in Alternative B.

## **2.8.2.3.2. Resource Uses**

### **2.8.2.3.2.1. Forest and Woodland Products**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.1, the following decisions would apply under Alternative D:

#### DECISIONS:

Personal use of timber would be allowed on all lands (including the Steese National Conservation Area).

Commercial timber salvage sales would be allowed on all lands (including the Steese National Conservation Area).

Commercial timber sales (large or small) would be allowed on all lands, except within the Birch Creek WSR Corridor, Mount Prindle RNA, and Big Windy Hot Springs RNA.

Commercial use of forest products would be allowed on all lands, except within the Mount Prindle and Big Windy Hot Springs RNAs.

### **2.8.2.3.2.2. Land Tenure**

#### DECISIONS:

Same as Alternative B.

### **2.8.2.3.2.3. Land Use Authorizations**

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.3, the following decisions would apply under Alternative D:

There would be no rights-of-way avoidance areas or designated transportation corridors under this alternative.

### **2.8.2.3.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals.

#### **2.8.2.3.2.4.1. Fluid Leasable Minerals**

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.1, the following decisions would apply under Alternative D:

Approximately 585,000 acres in the following areas would be closed to fluid leasable minerals (Map 37).

- The Mount Prindle and Big Windy Hot Springs RNAs
- The Birch Creek, Wolf Creek, Pinnell Mountain Trail, and Rocky Mountain Uplands RMZs
- The Steese ACEC/ungulate mineral licks
- Zone 3 disposal land (federal mining claims outside Steese National Conservation Area and Birch Creek WSR Corridor)
- BLM's Central Administrative Site

Approximately 524,000 acres would be open to leasing, subject to minor constraints. Within the Steese National Conservation Area, this includes that portion of the Clums RMZ that does not overlap with the Steese ACEC and the Preacher RMZ (Map 37).

All remaining lands, approximately 158,000 acres, would be open to leasing, subject to Standard Lease Terms. This includes the Harrison RMZ, BLM lands near Circle, and any remaining lands.

#### **2.8.2.3.2.4.2. Solid Leasable Minerals**

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.2, the following decisions would apply under Alternative D:

The same areas that are closed to fluid leasable minerals under this alternative, approximately 585,000 acres, would also be closed to solid leasable minerals (Map 37). The same areas that are open to fluid leasable minerals, 682,000 acres, would also be open to solid leasable minerals subject to the same constraints.

#### **2.8.2.3.2.4.3. Locatable Minerals**

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.3, the following decisions would apply under Alternative D:

Approximately 585,000 acres in the following areas would be closed to locatable mineral entry (Map 36).

- The Mount Prindle and Big Windy Hot Springs RNAs
- The Birch Creek, Wolf Creek, Pinnell Mountain Trail, and Rocky Mountain Uplands RMZ
- The Steese ACEC/ungulate mineral licks
- Zone 3 disposal land (federal mining claims outside Steese National Conservation Area and Birch Creek WSR Corridor)
- BLM's Central Administrative Site

All remaining lands in the Steese Subunit, approximately 682,000 acres, would be open to locatable mineral entry. Within the Steese National Conservation Area, this includes Harrison RMZ, Preacher Creek RMZ, and the Clums RMZ (except that portion that is within the Steese ACEC).

#### **2.8.2.3.2.4.4. Salable Minerals**

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.4, the following decisions would apply under Alternative D:

The entire subunit, approximately 1,267,000 acres would be open to salable minerals.

### 2.8.2.3.2.5. Recreation

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.6, the following decisions would apply under Alternative D:

#### Recreation Management Areas

The Steese SRMA would include 1,246,000 acres of lands including the Steese National Conservation Area, the Birch Creek WSR Corridor and lands adjacent to the WSR corridor (Map 51). The SRMA includes approximately 15,000 acres of state inholdings. Under this alternative, the Steese SRMA would include nine Recreation Management Zones (RMZs), the management of which are described in Section H.2.3, “Steese Alternative D”.

**Table 2.15. Steese Recreation Management Zones, RSC Settings and OHV Designations, Alternative D**

Name	Acres	RSC Setting <sup>a b</sup>	OHV Designation
Birch Creek RMZ	87,000	Semi-Primitive	LIMITED
Pinnell Mountain Trail RMZ	16,000	Semi-Primitive	LIMITED
Mount Prindle RNA RMZ	3,000	Primitive	CLOSED
Big Windy RNA RMZ	160	Primitive	CLOSED
Preacher Creek RMZ	437,000	Middlecountry	LIMITED
Harrison Creek RMZ	124,000	Frontcountry	LIMITED
Wolf Creek RMZ	325,000	Backcountry	LIMITED
Clums RMZ	172,000	Middlecountry	LIMITED
Rocky Mountain Uplands RMZ	82,000	Backcountry	LIMITED
Other BLM lands	36,000	N/A	LIMITED

<sup>a</sup>Table 2.5

<sup>b</sup>RSC are descriptive conditions describing management parameters at the implementation level. These are not land use planning decisions

### 2.8.2.3.2.6. Travel Management

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative D.

#### DECISIONS:

Under Alternative D, the entire Steese Subunit would be delineated as a Travel Management Area. For lands within the SRMA, specific Travel Management Zones (TMZs) have also been delineated and are the same polygons used for Recreation Management Zone (RMZ) delineations and subsequent Recreation Opportunity Spectrum (RSC) settings for this alternative. Each TMZ also contains a specific OHV designation of Open, Limited, or Closed (Table 2.15, “Steese Recreation Management Zones, RSC Settings and OHV Designations, Alternative D”).

It is not practical to define and delineate a comprehensive travel management network for the Steese subunit in this plan due to incomplete route data, size and the complexity of the area. Instead, a map of preliminary (existing) routes (see Map 51) and interim management prescriptions would be utilized until such time as a Comprehensive Travel Management Plan could be completed.

Accurate route information is needed to complete a comprehensive travel management network. This data would be acquired utilizing a combination of methods, including overflights and on-the-ground GPS mapping. Once the signed ROD for the RMP is released, additional data would be collected and a Comprehensive Travel Management Plan would be completed, using interagency and public collaboration.

The OHV prescriptions vary by Recreation Management Zone and are described below. Under this alternative, snowmobiles are limited to 50 inches or less in width and 1,000 pounds or less curb weight.

#### Interim Travel Management Prescriptions Common to All Lands

All forms of non-motorized use would be allowed.

Aircraft use would be unrestricted (except in Primitive Zones), with the following provisions: Minimal clearing of rocks, downed logs, and brush would be allowed; Construction or formal improvement of landing areas would occur by permit only; Use of gravel bars and winter snow areas would be allowed, subject to reasonable provisions to protect the values of "wild," river segments.

New restrictions could be developed for the purposes of site protection, visitor safety, and/or enhancing recreational opportunities, experiences and outcomes.

#### Interim Travel Management Prescriptions for All Primitive Zones

Same as Management Common to All Lands, with the following additions:

A permit or approved Plan of Operations would be required for all OHV use.

Aircraft landings would be allowed within the Primitive Zones, with the following provisions: No clearing of vegetation would be allowed without a permit.

The use of hovercraft, airboats, and personal watercraft would not be allowed.

In areas with a Closed OHV designation (Research Natural Areas) subject to reasonable regulations, a free permit may be issued for access via snowmobiles for traditional activities and for travel to and from villages and homesites (ANILCA Sec. 1110). Similarly, federally Qualified Subsistence Users, subject to reasonable regulations and with a free permit, can use snowmobiles or other means of surface transportation traditionally employed for subsistence purposes (ANILCA Sec. 811) in areas with use limitations for casual users. Free permits may be obtained in person, by mail, and by phone from the BLM Fairbanks District Office and other appropriate locations.

**RATIONALE:** The federal government established a system of Research Natural Areas (RNAs) in 1927. RNAs are tracts of federal land and water established and managed for the primary purpose of research and education (43 CFR 8223.0-1). RNAs were selected to contain examples of significant natural ecosystems, areas suitable for ecological study, and rare species of plants

and animals. Federal and state agencies have cooperated in Alaska since 1973 in selecting, documenting, and describing RNAs.

Four RNAs were designated in the planning area in 1986 (BLM 1986a and 1986b). The RNAs were designated to provide areas where natural ecosystems and processes are undisturbed so that they can be studied and understood, and to provide an undisturbed area for comparison with other areas so that effects of management and use can be assessed. The principle of maintaining reference conditions for scientific comparison is basic to the purposes of the system of RNAs.

Motorized vehicle access in the RNAs, including snowmobile use in winter, has the potential to damage vegetation, geologic structures, and soils. Any such disturbance has the potential to reduce the value of the area for future research by altering natural conditions. Although specific natural features were identified prior to designation and in reports for each RNA, other features could be equally valuable in future research. In other words, it is not possible now to identify what resources will be most valuable later for scientific study.

Although snow cover and frozen ground is considered adequate to protect vegetation and soils from snowmobiles in most areas, effects on vegetation do often occur from such use. Shrubs and small trees near or above the snow surface can be damaged and broken. The spinning of a snowmobile track can quickly remove considerable snow cover, especially high-power machines with paddle tracks. On steep slopes (typical in many of the RNAs), high snow depths may be required to avoid impacting low vegetation and ground cover. Repeated travel on trails can pack snowcover, decreasing insulation value of the snow, and in some places cause subsurface water flow to occur on the surface and “glaciering” to occur. The later melt of this ice in spring can impact vegetation growth and change vegetation type.

#### Interim Travel Management Prescriptions for All Semi-Primitive and Backcountry Zones

Same as Management Common to All Lands, with the following additions:

Same as Alternative B, all forms of non-motorized use allowed. Motorboat use allowed without specific authorization consistent with ANILCA Sections 1110(a) and 811. However, airboats, hovercraft, and personal watercraft would not be permitted on non-navigable segments above the confluence of Birch Creek and an unnamed creek in T. 6N., R. 17E., Section 8.

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

The Pinnell Mountain Trail is closed to motorized use.

**RATIONALE:** The Wild and Scenic Rivers Act states that rivers classified as “wild” are generally inaccessible except by trail, and are to represent vestiges of primitive America (Wild and Scenic Rivers Act, Section 2). Birch Creek WSR has outstandingly remarkable recreational value as an accessible, freshwater and whitewater, wild river providing a multi-day Primitive floating and camping experience which is considered unique. Birch Creek has been managed for a Primitive experience for the past 30 years since its designation and classification as a “wild” river. Airboats, hovercraft and personal watercraft generate noise levels which are disruptive to some recreationists and would diminish the Semi-Primitive experience managed for and expected by those recreationists on a “wild” river. These types of use are not considered compatible with the values for which the “wild” river is to be managed.

Birch Creek has outstandingly remarkable fish values due to its high species diversity and high quality habitat. Prohibiting the use of hovercraft, airboats, and personal watercraft would protect and enhance these outstandingly remarkable values. It would also reduce disturbance of sensitive wildlife species, such as nesting peregrine falcons.

Prohibiting the use of hovercraft, airboats, and personal watercraft in the Steese National Conservation Area would also help protect Semi-Primitive and Backcountry recreational settings by reducing noise and motorized use levels.

#### Interim Travel Management Prescriptions for All Middlecountry, and Frontcountry Zones

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

Cross-country summer use (May 1 through October 14) of OHVs 50 inches or less in width, and weighing 1,000 pounds curb weight and less would be allowed.

Highway vehicles weighing up to 10,000 pounds curb weight would be allowed on existing roads (Map 51).

A permit or approved Plan of Operations would be required for all other OHV use.

The use of hovercraft, airboats, and personal watercraft would not be allowed.

#### Interim Travel Management Prescriptions for Other BLM lands Outside the SRMA

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

Cross-country summer use (May 1 through October 14) of OHVs 50 inches or less in width, and weighing 1,000 pounds curb weight and less would be allowed.

Highway vehicles weighing up to 10,000 pounds curb weight would be allowed on existing roads (Map 51).

A permit or approved Plan of Operations would be required for all other OHV use.

**RATIONALE:** Limiting the use of OHVs by weight, seasonal closure, and/or to existing routes would help maintain the appropriate recreational setting. Allowing for cross-country travel by ATV would increase impacts to natural resources but would provide additional opportunity for motorized recreation, consistent with recreation opportunity settings. Prohibiting the use of hovercraft, airboats, and personal watercraft in the Steese National Conservation Area would also help protect recreational settings by reducing noise and motorized use. Additionally, limitations on the types of motorized use would reduce impacts to stream bed, soil, water, vegetation, fish, and wildlife; and, would help protect the National Conservation Area's scenic, scientific, and cultural resources.

### 2.8.2.3.2.7. Withdrawals

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.8, the following decisions would apply under Alternative D:

Recommend retaining the ANILCA withdrawal in the Steese National Conservation Area in the following areas (Map 36), keeping approximately 585,000 acres closed to locatable mineral entry and mineral leasing:

- Birch Creek, Wolf Creek, Pinnell Mountain Trail, Rock Creek, and Rocky Mountain Uplands RMZs
- Big Windy Hot Springs and Mount Prindle RNAs
- Steese ACEC, including that portion of the ACEC that overlaps with the Clums RMZ

Pursuant to ANILCA 402(b), recommend opening approximately 646,000 acres to locatable mineral entry and mineral leasing in the Steese National Conservation Area in the following areas (Map 36).

- Harrison RMZ
- Preacher Creek RMZ
- Clums RMZ (except that part within the Steese ACEC)

Outside of the National Conservation Area, approximately 1,600 acres would be recommended withdrawn from locatable mineral entry, to include lands within the Birch WSR Corridor that are not withdrawn under ANILCA or the WSR Act, for the purposes of protecting the water quality and Outstandingly Remarkable Values of the river.

Outside of the National Conservation Area, approximately 15,200 acres would be recommended withdrawn from locatable mineral entry in those parts of Birch Creek and Pinnell Mountain Trail RMZs that are not withdrawn under ANILCA.

Land tenure Zone 3 lands (Appendix G, *Land Tenure and Withdrawals*) would be closed to mineral leasing and recommended withdrawn from location to prevent encumbrance. As needed, recommend modification of public land orders to allow for disposal of these parcels while keeping them closed to mineral entry and mineral leasing.

RATIONALE: Under Alternative D, caribou range and Birch Creek would be protected by a variety of planning decisions. The Birch Creek RMZ, which includes the entire Birch Creek WSR Corridor and 15,130 acres of adjacent lands, would be closed to mineral entry, location, and leasing and managed for a Semi-Primitive recreational setting (Map 51). The RMZ would be managed as a VRM Class I area (Map 22). Caribou range would be protected by the designation of the Steese ACEC (Map 66), which includes current and recent historic calving and postcalving habitat for the Fortymile caribou herd and current habitat for the White Mountains caribou herd. The ACEC would remain closed to mineral entry, location, and leasing (Maps 36 and 37) and would be managed for a Backcountry recreation setting (Map 51). Mining activities would be subject to reasonable regulations, including the Standard Operating Procedures and Fluid Mineral Leasing Stipulations (Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) to protect caribou range and Birch Creek.

### 2.8.2.3.3. Special Designations

#### 2.8.2.3.3.1. Areas of Critical Environmental Concern

##### DECISIONS:

Under Alternative D, approximately 193,000 acres would be designated as the Steese ACEC (Map 66) to protect relevant and important values which include core current and Clums Fork calving habitat for the Fortymile caribou herd and Dall sheep mineral licks.

The ACEC would remain closed to locatable and leasable mineral entry subject to valid existing rights. A mining Plan of Operations would be required on any mining activity within an ACEC (43 CFR 3809.11(c)(3)).

Ungulate mineral licks: Within a distance of one-half mile of designated ungulate mineral licks, limit all permitted uses and development of facilities for permitted uses, from May 10 through August 31 to activities which would not reduce sheep use of licks.

Allowed uses would be managed to maintain caribou and Dall sheep habitat. The majority of the ACEC is and would remain generally free of summer motorized vehicle use (May 1 through October 14 sheep habitat; May 10 through July 15 remainder), i.e., summer motorized vehicle use, in the few areas of the ACEC where allowed (Middlecountry RMZ), would be restricted to a limited set of trails. In locations where summer motorized use is currently allowed and vehicle trails are currently established, motorized vehicle use would be limited to select existing routes (or as determined through future travel management planning). Where the ACEC overlays Middlecountry RMZs (and OHV trail construction and other development may be planned), manage the area to maintain its value as caribou and Dall sheep habitat as well as to meet the objectives for that RMZ. Designated trails and other developments may be established in this Zone if limited in density and compatible with caribou and Dall sheep habitat.

Winter motorized use in Dall sheep habitat is currently minimal, but would be monitored and, if use begins to approach a level which may result in altered distribution of Dall sheep, such use may be restricted in the future (through alteration of maintained trails or, if necessary, closures of limited areas and/or time periods).

##### SUMMARY OF MANAGEMENT IN THE ACEC

The following is a summary of other management decisions that would apply within the ACEC.

Salable mineral disposal could be authorized within the ACEC. The ACEC would be retained in federal land status (land tenure Zone 1). Land use permits and leases would be considered, subject to constraints for ungulate mineral licks. Standard Operating Procedures (Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) would apply to activities requiring a permit from BLM.

A full description of the OHV limitations can be found in section 2.8.2.3.2.6 Travel Management. The OHV designation is Limited. The ACEC includes Backcountry and Middlecountry Recreation Management Zones (RMZs). Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed in all zones. Summer use of OHVs would not be allowed in the Backcountry Zones (Map 51) except by

permit. Summer use (May 1 through October 14) of OHVs weighing 1,000 pounds curb weight and less would be allowed in the Middlecountry Zones.

### **2.8.2.3.3.2. Research Natural Areas**

#### **DECISIONS:**

Under Alternative D, the two existing Research Natural Areas (RNAs) would be maintained: the Mount Prindle RNA (2,800 acres) and Big Windy Hot Springs RNA (160 acres). Management of the RNAs would be the same as Alternative C.

### **2.8.2.3.3.3. Wild and Scenic Rivers**

#### **DECISIONS:**

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

**RATIONALE:** There is no known federal, public, state, Tribal, local, or other interests in the designation. The State is opposed to the designation. Big Windy is within the Steese National Conservation Area and in all alternatives in this EIS, this area would be closed to mineral entry and would have a suite of management decisions that would protect the ORVs of this river. Because of these reasons, Big Windy has been determined to be not suitable for designation under Alternative D

## **2.8.2.4. Alternative E (Proposed RMP): Steese Subunit**

### **2.8.2.4.1. Resources**

#### **2.8.2.4.1.1. Cave and Karst Resources**

**GOAL:** Manage significant cave and karst systems to protect and maintain their resource, educational, scientific, and recreational values in accordance with the Federal Caves Resource Protection Act of 1988 and 43 CFR 37.11.

#### **DECISIONS:**

Manage Sheep Cave, AK-028-003, as a significant cave.

Management objective: Preserve Sheep Cave for scientific use and values.

Setting Prescription: Semi-Primitive

Administrative designation: Located within the Steese National Conservation Area (Map 67). No additional designation recommended.

#### **2.8.2.4.1.2. Cultural Resources**

#### **DECISIONS:**

Same as Alternative B.

### 2.8.2.4.1.3. Fish and Aquatic Species

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.2.3, the following decisions would apply under Alternative E:

The following watersheds would be managed as RCAs (Map 8). These are the same as Alternative B.

1. Birch Creek (HUC # 190404020207)
2. Birch Creek (HUC # 190404020212)
3. Birch Creek (HUC # 190404020601)
4. Birch Creek (HUC # 190404020606)
5. Fourteenmile Creek-Yukon River (HUC # 190404011906)
6. George Creek-Birch Creek (HUC # 190404020903)
7. Headwaters North Fork Preacher Creek (HUC # 190404021102)
8. Loper Creek (HUC # 190404021201)
9. Lower North Fork Preacher Creek (HUC # 190404021105)
10. McLean Creek-Birch Creek (HUC # 190404020401)
11. Middle Preacher Creek (HUC # 190404021202)
12. Middle North Fork Preacher Creek (HUC # 190404021104)
13. Ninety-eight Pup-Preacher Creek (HUC # 190404021009)
14. Pitkas Bar (HUC # 190404020408)
15. Preacher Creek (HUC # 190404021005)
16. Puzzle Gulch (HUC # 190404020506)
17. Sheep Creek (HUC # 190404020407)
18. Thomas Creek-Birch Creek (HUC # 190404020403)
19. Upper North Fork Preacher Creek (HUC # 190404021103)
20. Yukon River (HUC # 190404011903)
21. Yukon River (HUC # 190404011904)

The following watersheds would be identified as a High Priority Restoration Watershed and be emphasized for active restoration.

1. Harrison Creek (HUC # 190404020406)
2. Twelve-mile Creek (HUC # 190404020205)
3. North Fork Birch Creek (HUC # 190404020206)
4. Volcano Creek-Clums Fork (190404020306)

Complete watershed assessments Section I.5, "Watershed Assessment Process" as necessary for management.

### 2.8.2.4.1.4. Visual Resources

Proposed VRM classes for Alternative E are displayed on Map 23. Recreation Management Zones are displayed on Map 52.

#### DECISIONS:

Management of VRM Class I areas is to preserve the existing characteristics of the landscape, but allow for limited management activities where changes should be very low and must not attract the attention of the casual observer.

In VRM Class II areas, developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with minor changes to landform and vegetation.

In VRM Class IV areas, management actions would be taken to protect the Wild and Scenic River view shed and adjacent VRM Classes. Development activities would be designed to harmonize with the visually dominating elements of the surrounding landscape characteristics of line, form, color and texture. Major modification of the natural landscape would be allowed.

<b>Alternative E Visual Resource Management Allocations for the Steese Subunit (Maps 23 and 52)</b>			
<b>Area</b>	<b>RSC Class</b>	<b>VRM Class</b>	<b>Acres</b>
Mount Prindle RNA, and Big Windy RNA RMZs	Primitive	I	3,000
Birch Creek RMZ (inclusive of Birch Creek WSR)	Semi-Primitive	I	100,000
Pinnell Mountain and Wolf Creek RMZs	Semi-Primitive	II	421,000
Preacher Creek RMZ	Backcountry	II	488,000
Bachelor Creek and Clums RMZs	Middlecountry	IV	120,000
Harrison Creek RMZ	Frontcountry	IV	114,000
Remaining BLM lands	N/A	IV	36,000

#### **2.8.2.4.1.5. Wetlands and Floodplains**

In addition to the Water Resource decisions listed as Common To All Subunits in section 2.6.2.10, the following decisions would apply under Alternative E:

##### **DECISIONS:**

Within five years of signing the ROD or by management direction, undertake development of a step-down Watershed Management Plan (WMP) for Birch Creek Wild and Scenic River watershed, Steese South National Conservation Area, and Preacher Creek watershed, Steese North National Conservation Area. Watershed planning helps address water quality problems in a holistic manner by fully assessing the potential contributing causes and sources of pollution including uplands, then prioritizing restoration and protection strategies to address these problems. Site specific soil and water management determinations (e.g., watershed, floodplain-wetland, or riparian rehabilitation techniques, monitoring techniques and schedule, and the design and placement of improvements) will be developed in the interdisciplinary Watershed Management Planning phase for resource programs. The "Watershed Assessment Matrix" (Table I.1), depicting range of desired conditions for aquatic habitats would be incorporated in the Watershed Management Plan as well as other science-based watershed assessment tools. Relevant new science and new empirical water resource data would also be incorporated in the WMPs. Additional SOPs and Fluid Mineral Leasing Stipulations for land uses may be developed through the step-down watershed management plan.

Restoration and enhancement of floodplain areas should be approached through management of the entire watershed rather than just focusing on a narrow floodplain-riparian zone. Prior to initiating restoration measures, a determination must be made of site potential and the primary causes of a degraded ecological condition. The natural recovery processes operating in an area should be evaluated prior to considering structural measures. While stream systems and watersheds are undergoing major geomorphic or hydrological adjustment, structural measures

should not be initiated. Consider implementing structural measures only if (1) proper management prescriptions will not achieve management objectives within the desired time frame, (2) costs incurred to achieve accelerated rehabilitation are justified by the benefits to be achieved, and (3) natural recovery has not progressed to a point that will stabilize stream banks and/or wetlands basins.

In setting reclamation priorities for floodplain-wetland areas, consider the extent to which the floodplain-wetland may deteriorate if restoration or improvement action is not immediately implemented. Floodplain-wetland areas that may suffer substantial further degradation and have high potential for improvement should be given top priority. Those that have been degraded but appear stable may be given lower priority for restoration and improvement. Other factors, such as special status species, water quality, competing water uses, fisheries, and recreation values should also be considered when establishing priorities.

#### **2.8.2.4.1.6. Wilderness Characteristics**

**OBJECTIVE:** Reduce impacts of multiple-use activities to maintain naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on approximately 1,009,000 acres.

#### **DECISIONS:**

The BLM would manage approximately 258,000 acres for other multiple uses as a priority over protecting wilderness characteristics.

The BLM would manage approximately 1,009,000 acres to emphasize other resources values and multiple uses while applying management restrictions to reduce impacts to wilderness characteristics. These lands are located within the crucial caribou and Dall sheep habitat, and Primitive, Semi-Primitive, and Backcountry recreation management zones (Map 77).

The BLM would not manage any lands to protect wilderness characteristics as a priority over other resource values and multiple uses.

The types of activities/projects that could potentially affect wilderness characteristics would require further NEPA analysis. The BLM will monitor wilderness characteristics through this NEPA process. In addition, on-the-ground or aerial monitoring will be done in conjunction with monitoring for other resources.

**RATIONALE:** Under BLM Manual 6320 the BLM can manage areas to emphasize other resource values and multiple uses while applying management restrictions to protect wilderness characteristics. Given the large size of most of wilderness inventory units in the Steese Subunit, many land uses could occur that would not impact naturalness, solitude, or primitive recreation on a landscape scale, or the size of the units. Management for other resource drivers such as recreation, wild and scenic rivers, and wildlife are complementary to maintaining wilderness characteristics. Under Alternative E, management decisions to protect caribou and Dall sheep habitat, riparian habitat, and Birch Creek WSR would result in maintenance of wilderness characteristics in these areas. Additionally, when the RMP is implemented uses proposed in these areas would be further analyzed through the NEPA process for impacts to size, naturalness and solitude and stipulated mitigation measures would be applied where needed to minimize impacts.

### 2.8.2.4.1.7. Wildlife

In addition to the goals and decisions listed as Common to All Subunits in section 2.6.2.13, the following would apply under Alternative E.

**GOALS:** Priority will be given to maintaining the value of crucial caribou and Dall sheep habitat and ungulate mineral licks.

**DECISIONS:**

Decisions are the same as in Alternative B, with the addition of the following decisions.

Manage the caribou migration corridor on BLM-managed lands (Map 68) as follows:

- Closed to mineral location, entry, and leasing.
- Manage OHV use to ensure free movement of caribou between upper Birch Creek, the north Steese National Conservation Area, and the White Mountains NRA.
- Consider impacts of developments in the corridor, including state and private land, and ensure it does not significantly impact the ability of caribou to migrate to historically used and biologically important habitats. Through activity level planning, develop a management threshold density goal for BLM lands, limiting linear disturbance per unit area. Propose a cooperative effort with ADNR and ADF&G to develop a plan (such as a Habitat Management Plan) to maintain connectivity and effectiveness of habitat in the area.

Domestic sheep, goats, and camelids (including alpaca and llama) are prohibited in Dall sheep habitat and adjacent lands.

Delineate approximately 457,000 acres as crucial caribou and Dall sheep habitat (map 67) to protect caribou calving and postcalving habitat, Dall sheep habitat, and ungulate mineral licks. Management of these areas will give priority to maintaining habitat effectiveness—the ability of habitats to support Dall sheep and caribou—including the following management:

Ungulate mineral licks: Within a distance of one mile of designated ungulate mineral licks, limit all permitted uses and development of facilities for permitted uses, from May 10 through August 31 to activities which would not reduce sheep use of licks.

Limit density of trails within crucial caribou and Dall sheep habitat to protect values for which they were designated.

Within crucial caribou and Dall sheep habitat cross-country winter use of vehicles weighing more than 1,500 pounds curb weight will not be allowed without a permit. Cross-country Summer OHV use will not be allowed without a permit. Summer OHV travel on BLM approved routes may be allowed where it is

compatible with maintenance of caribou and Dall sheep habitat effectiveness. These approved routes will be determined through travel management planning.

Winter motorized use in Dall sheep habitat would be monitored and, if use begins to approach a level which may result in altered distribution of Dall sheep, such use may be restricted in the future (through alteration of maintained trails or, if necessary, limited closures, e.g., limited areas and/or time periods).

Additional management prescriptions in crucial caribou and Dall sheep habitat for activities requiring a permit from the BLM:

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.

Permanent roads will generally not be allowed, although long-term temporary roads may be, and roads will generally not be open to the public. Decisions subject to the ANILCA Title XI process in the Steese National Conservation Area will be made on a case-by-case basis pursuant to Title XI. 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 crucial caribou and Dall sheep habitat 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 above ground level, 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.

The footprint of facilities will be minimized. Permittees may be required to co-locate facilities and access to minimize habitat loss.

Reclamation and revegetation of disturbed areas will be required to meet performance standards set in site-specific reclamation plans with a goal of restoration of caribou and/or Dall sheep habitat, such as a required plant cover (percent) within a certain number of years before a performance bond is released.

## **2.8.2.4.2. Resource Uses**

### **2.8.2.4.2.1. Forest and Woodland Products**

#### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.1, the following decisions would apply under Alternative E:

Personal use of timber would be allowed on all lands.

Commercial timber salvage sales would be allowed on all lands (including the Steese National Conservation Area).

Commercial timber sales (large or small) would be allowed on all lands, except within the Birch Creek WSR Corridor, Mount Prindle RNA, Big Windy Hot Springs RNA, and crucial caribou and Dall sheep habitat (Map 67).

Commercial use of forest products would be considered on all lands.

#### **2.8.2.4.2.2. Land Tenure**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.2, the following decisions would apply under Alternative E. This is the same as Alternative B.

##### **DECISIONS:**

##### Zone 1 lands (lands identified for retention or acquisition):

Lands within the Steese National Conservation Area would be retained in accordance with Section 402(b) of ANILCA; Recommend retaining Birch Creek WSR Corridor and Central Administrative Site (PLO 519).

Consider acquisition of private land inholdings from willing sellers within areas identified as Zone 1.

Consider acquisition of state inholdings within the proclaimed boundary of the Steese National Conservation Area, including approximately 15,000 acres of State lands located within the boundaries of the Steese National Conservation Area (FM, T. 7N., R.8E., and FM, T. 10N., R. 13E.).

Consider acquisition of lands conveyed to the State between the southern boundary of the North Steese National Conservation Area Unit and the Pinnell Mountain Trail (FM, T. 7N, R. 9E., T.8N., R. 9E., and T. 8N, R.10E).

##### Zone 2 lands:

Consider acquisition, or disposal, including exchange, of scattered parcels around Circle for the purposes of consolidation.

##### Zone 3 lands (lands identified for disposal):

If federal mining claims located outside of the Steese National Conservation Area and Birch Creek WSR Corridor become null and void, and are not conveyed to the State, consider these lands for disposal or exchange. If needed, modify existing public land orders to allow for disposal.

#### **2.8.2.4.2.3. Land Use Authorizations**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.3, the following decisions would apply under Alternative E.

No transportation corridors would be retained in the Steese National Conservation Area.

There would be no rights-of-way avoidance areas.

#### **2.8.2.4.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals.

#### **2.8.2.4.2.4.1. Fluid Leasable Minerals**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.1, the following decisions would apply under Alternative E. Fluid leasable minerals are defined by the Mineral Leasing Act and include oil, gas, coalbed natural gas, and geothermal resources.

Approximately 1,237,000 acres in the Steese National Conservation Area, Birch Creek WSR, and riparian conservation areas would be closed to fluid leasable minerals (Map 38):

All remaining lands, approximately 30,000 acres, would be open to leasing, subject to Standard Lease Terms, Fluid Mineral Leasing Stipulations, and Standard Operating Procedures.

#### **2.8.2.4.2.4.2. Solid Leasable Minerals**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.2, the following decisions would apply under Alternative E. Solid leasable minerals are defined by the Mineral Leasing Act and include coal, oil shale, native asphalt, phosphate, sodium, potash, potassium, and sulfur.

The same areas that are closed to fluid leasable minerals under this alternative, approximately 1,237,000 acres, would also be closed to solid leasable minerals (Map 38), including coal.

The remainder of the subunit, 30,000 acres would be open to solid leasable minerals subject to leasing stipulations and standard operating procedures.

As stated in section 2.6.3.5.2 Common to All Alternatives, coal leasing is deferred because the coal screening process (as identified by 43 CFR 3420.1-4) has not been completed in the planning area. A RMP amendment would be needed before coal leasing could occur. Only those BLM-managed public lands that have development potential may be identified as acceptable for further consideration for coal leasing.

#### **2.8.2.4.2.4.3. Locatable Minerals**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.3, the following decisions would apply under Alternative E. Locatable minerals are minerals for which the right to explore, develop, and extract mineral resources is established by the staking of mining claims, under the General Mining Law of 1872. Examples of locatable minerals include gold, silver, copper, zinc, certain limestones, and gypsum.

Approximately 1,237,000 acres in the Steese National Conservation Area, Birch Creek WSR, and riparian conservation areas would remain closed to locatable mineral entry (Map 38).

All remaining lands in the Steese Subunit, approximately 30,000 acres, would be open to locatable mineral entry.

#### 2.8.2.4.2.4.4. Salable Minerals

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.5.4, the following decisions would apply under Alternative E. Salable minerals, also called mineral materials, include sand, gravel, dirt, and rock.

Approximately 69,000 acres in the Birch Creek WSR Corridor would be closed to salable mineral.

All remaining lands in the Steese Subunit, including the Steese National Conservation Area outside of the river corridor, would be open to salable minerals.

#### 2.8.2.4.2.5. Recreation

##### OBJECTIVE:

SRMA specific outcomes-focused objectives, proposed recreation setting characteristics and the management framework for each RMZ can be found in Appendix H.

##### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.6, the following decisions would apply under Alternative E:

Designate 1,246,000 acres of lands including the Steese National Conservation Area, the Birch Creek WSR Corridor and lands adjacent to the WSR corridor as the Steese SRMA (Map 52). The SRMA includes 15,000 acres of state inholdings. Under this alternative, the SRMA would include nine Recreation Management Zones (RMZs).

**Table 2.16. Steese Recreation Management Zones, RSC Settings and OHV Designations, Alternative E (Map 52)**

Name	Acres	RSC Setting <sup>a b</sup>	OHV Designation
Birch Creek RMZ	100,000	Semi-Primitive	LIMITED
Pinnell Mountain Trail RMZ	16,000	Semi-Primitive	LIMITED
Mount Prindle RNA RMZ	3,000	Primitive	LIMITED
Big Windy RNA RMZ	160	Primitive	LIMITED
Preacher Creek RMZ	488,000	Backcountry	LIMITED
Harrison Creek RMZ	114,000	Frontcountry	LIMITED
Wolf Creek RMZ	405,000	Semi-Primitive	LIMITED
Bachelor Creek RMZ	31,000	Middlecountry	LIMITED
Clums RMZ	89,000	Middlecountry	LIMITED
Other BLM lands	36,000	N/A	LIMITED

<sup>a</sup>Table 2.5

<sup>b</sup>RSC are descriptive conditions describing management parameters at the implementation level. These are not land use planning decisions

#### 2.8.2.4.2.6. Travel Management

The table above describes the Recreation Management Zones in the Steese SRMA under Alternative E (Map 52). The OHV prescriptions are described below.

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative E.

#### DECISIONS:

A comprehensive travel management plan for the Steese Subunit will be deferred until the completion of the RMP. Once the ROD for the RMP is released, additional data would be collected and a comprehensive travel management plan would be developed using a public process, allowing for additional public and agency input. This process will include publishing a *Federal Register* Notice, public scoping meetings and if any closures are proposed, a formal hearing to address the closure procedures under 43 CFR 36.11 (h) as well as limitations affecting ANILCA provisions listed in Title VIII and Title XI.

Interim management prescriptions until completion of the Travel Management Plan: Current management outlined in Alternative A, No Action Alternative with the addition of the following:

1,000 pound curb weight and 50 inch width limitation for snowmobiles to replace 1,500 pound GVWR limitation in the Steese National Conservation Area and Birch Creek WSR corridor.

1,000 pound curb weight limitation and 50 inch width for summer OHVs to replace 1,500 pound GVWR limitation in the Steese National Conservation Area .

Birch Creek WSR: Use of motorboats, hovercraft, and airboats is allowed without specific authorization.

The Mount Prindle and Big Windy Hot Springs RNAs include limitations on OHV use (Map 52). The OHV area designation would change from Closed to Limited in this alternative. The RNAs would be limited to winter OHV use only by snowmobiles 1,000 pounds or less in weight and 50 inches or less in width.

#### Limitations on Travel Management Planning:

The step-down travel management plan will be developed within 5 years of the Record of Decision. Wildlife management decisions will set sideboards on what can be considered in the travel management plan.

Wildlife management prescriptions in crucial caribou and Dall sheep habitat (Map 67) include limitations on OHV use. These will be implemented through travel management planning. Cross-country summer OHV use will not be allowed without a permit.

Wildlife decision identified in Alternative E have management prescriptions that include non-motorized travel management prescriptions. Domestic sheep, goats and camelids (including alpaca and llama) are prohibited in Dall sheep habitat and adjacent lands.

Rationale: Limiting the use of OHVs by weight, seasonal closure, and/or to existing routes or in some cases considering dispersed cross-country travel will help maintain the appropriate recreational setting, reduce impacts to stream beds, soil, water, vegetation, fish and wildlife, scenic, scientific and cultural resources. These decisions will be analyzed in the travel management plan.

Weight limitation changes from pounds GVWR to curb weight allows for the same types and sizes of vehicles allowed under Alternative A. Curb weight is consistent with the generally allowed uses on adjacent State lands.

### **2.8.2.4.2.7. Withdrawals**

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.8, the following decisions would apply under Alternative E (Map 93).

Recommend retaining the ANILCA section 404 (b) withdrawal in the Steese National Conservation Area, keeping this area withdrawn from location, entry, and patent under the U.S. mining laws.

Recommend to the Secretary of the Interior that ANCSA 17(d)(1) withdrawals within the Steese National Conservation Area be partially revoked to remove duplicate withdrawals.

Recommend to the Secretary of the Interior that ANCSA 17(d)(1) withdrawals be retained on 24,000 acres in the following areas until a new FLPMA withdrawal from the mining laws is approved.

- Approximately 17,000 acres on upper and lower Birch Creek including all lands that are within the Birch Creek WSR Corridor, but outside of the one-half mile withdrawn by the WSR Act pursuant to ANILCA and areas of lower Birch Creek outside the WSR Corridor.
- Approximately 6,000 acres within riparian conservation areas.
- Parcels adjacent to the Steese National Conservation Area that are within the special recreation management area, 1,000 acres.

Recommend to the Secretary of the Interior that ANCSA 17(d)(1) withdrawals be partially revoked to open approximately 28,000 acres outside the Steese National Conservation Area to locatable mineral entry and mineral leasing laws in the areas shown on Map 38.

### **2.8.2.4.3. Special Designations**

#### **2.8.2.4.3.1. Areas of Critical Environmental Concern**

##### DECISIONS:

No ACECs would be designated.

#### **2.8.2.4.3.2. Research Natural Areas**

##### DECISIONS:

Under Alternative E, the two designated Research Natural Areas (RNAs) are: the Mount Prindle RNA (2,800 acres) and Big Windy Hot Springs RNA (160 acres).

The RNAs would be limited to winter OHV use only; summer use of OHVs is prohibited. Natural processes, including wildland fire, would be allowed to continue with as little interference as possible. Hiking, hunting, and nature appreciation would be allowed. The RNAs would be closed to mineral entry and mineral leasing. No surface-disturbing activities allowed except BLM-authorized research projects and primitive hiking trails.

Under this alternative primitive camping and hiking trails would be allowed in the RNAs.

### 2.8.2.4.3.3. Wild and Scenic Rivers

#### DECISIONS:

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

Same as Alternative C, no river segments would be recommended as suitable for designation.

**RATIONALE:** There is no known federal, public, state, Tribal, local, or other interests in the designation. The State is opposed to the designation. Big Windy is within the Steese National Conservation Area and in all alternatives in this EIS, this area would be closed to mineral entry and would have a suite of management decisions that would protect river values of this river. Because of these reasons, Big Windy has been determined to be not suitable for designation under Alternatives C, D, and E.

### 2.8.3. Comparison of Alternatives: Steese Subunit

Table 2.17, “Steese Subunit: Summary of Alternatives” provides a **comparison of major allocation decisions and decisions which vary by action alternative (Alternatives B, C, D, and E)**. There are additional decisions that are common to all action alternatives that are not displayed in these tables. For decisions that do not vary by action alternative, see section 2.6. Decisions may be paraphrased to save space. All acres are approximate and rounded to the nearest 1,000 acres. For the full text of all decisions, see Management Common to All Subunits and All Action Alternatives, section 2.6 Steese Subunit, Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*, and Appendix H, *Recreation Management Zones*.

**Table 2.17. Steese Subunit: Summary of Alternatives**

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Fish and Aquatic Species</b>	Riparian Conservation Arcas (RCAs) not addressed.	Manage 21 watersheds (Map 8) as RCAs.	Manage 18 watersheds (Map 9) as RCAs.	Manage eight watersheds (Map 10) as RCAs.	Same as Alternative B.
	Watershed assessments not addressed.	Complete watershed assessments prior to opening lands to mining.	Complete watershed assessments as necessary for management.		
	high priority restoration watersheds not addressed.	Manage four watersheds as high priority for restoration (Map 8).			
<b>Visual Resources</b>	Assign all BLM-managed lands to VRM Classes. Manage according to the VRM class objectives described in section 2.6.2.9 Proposed VRM Classes are displayed on Maps 20, 21, 22, and 23.				
	69,000 acres VRM Class I (Birch Creek WSR Corridor)	106,000 acres VRM Class I (Birch Creek RMZ, Pinnell Mountain Trail and RNAs).	102,000 acres VRM Class I (Birch Creek RMZ and RNAs).	90,000 acres VRM Class I (Birch Creek RMZ and RNAs).	Same as C; 102,000 acres
	76,000 acres VRM Class II (RNAs and Primitive Management Unit). Also view shed of Birch Creek.	1,140,000 acres VRM Class II (remainder Steese National Conservation Area).	578,000 acres VRM Class II (Backcountry and Semi-Primitive RMZs in the Steese National Conservation Area).	423,000 acres VRM Class II (Backcountry and Semi-Primitive RMZs in the Steese National Conservation Area).	910,000 acres VRM Class II (Semi-Primitive and Backcountry RMZ in the Steese National Conservation Area).
	1,066,000 acres VRM Class III (Semi-Primitive Management Units)	0 acres VRM Class III.			
	Lands outside of the Steese National Conservation Area and Birch Creek no VRM classes identified (approximately 36,000 acres).	36,000 acres VRM Class IV (other BLM lands)	602,000 acres VRM Class IV (Middlecountry and Frontcountry RMZs in the Steese National Conservation Area and other BLM lands).	769,000 acres VRM Class IV (Middlecountry and Frontcountry RMZs in the Steese National Conservation Area, and other BLM lands).	270,000 acres VRM Class IV (Middlecountry and Frontcountry RMZs in the Steese National Conservation Area, and other BLM lands).
<b>Wetlands and Floodplains</b>	Watershed management planning not addressed.	Within five years of signing the ROD, or by management direction, undertake development of a Watershed Management Plan for the Steese Wild and Scenic River watershed.			

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Wilderness Characteristics</b>	<b>Areas managed to protect wilderness characteristics as a priority over other resource values and multiple uses</b>				
	Wilderness characteristics not addressed.	None	None	None	None
	<b>Acres and Areas managed to emphasize other resource values and multiple uses while applying management restrictions to reduce impacts to wilderness characteristics</b>				
	Wilderness characteristics not addressed.	1,199,000 acres (94%)	647,000 acres (51%)	483,000 acres (38%)	1,009,000 acres (80%)
		Steese National Conservation Area	Steese ACEC, and Primitive, Semi-Primitive, and Backcountry recreation management zones	Steese ACEC and Primitive, Semi-Primitive, and Backcountry recreation management zones	Crucial caribou and Dall sheep habitat, and Primitive, Semi-Primitive, and Backcountry recreation management zones
	<b>Acres managed to emphasize other resource values and multiple uses as a priority over protecting wilderness characteristics</b>				
Wilderness characteristics not addressed.	68,000 acres (6%)	620,000 acres (49 %)	784,000 acres (62%)	258,000 acres (20%)	
<b>Wildlife</b>	Use of pack animals not addressed. No limits on types of pack animals for either casual or permitted use.	The use of domestic goats, alpacas, llamas, and other similar species would not be allowed in conjunction with BLM-authorized activities in Dall sheep habitat.			
		Domestic sheep, goats, and camelids (including alpaca and llama) are not allowed in Dall sheep habitat.	No prohibitions on casual use of Domestic sheep, goats, and camelids (including alpaca and llama).	Domestic sheep, goats, and camelids are not allowed in Dall sheep habitat.	
	Motorized use in caribou winter habitat not addressed.	In caribou winter range, plan travel management and development of facilities (such as maintained trails and cabins), in a manner that would result in a level of off-trail over-snow vehicular travel that would maintain continued availability of the area for use by wintering caribou. Develop adaptive management standards and strategies. Monitor over-snow motorized use in these areas and, if it approaches a level which may result in reduced use by wintering caribou, implement changes in maintained trails. If necessary, limited area or season closures may be enacted.			
	Caribou migration areas identified as crucial habitat and protected by the avoidance or mitigation of possible adverse effects of land use activities. Caribou range identified by Congress as a special value	The caribou migration corridor on BLM lands (Map 68) remains closed to mineral location, entry, and leasing. Limit summer motorized travel to existing routes or designated trails. Limit route density to ensure	Management of the caribou migration corridor on BLM lands would be the same as Alternative B, except only portions of the corridor on BLM lands would be closed to mineral location, entry, and leasing.	Management of the caribou migration corridor on BLM lands would be the same as Alternative C, except the corridor would be maintained by addressing potential effects on caribou migration prior to	Management of the caribou migration corridor on BLM lands would be the same as Alternative B, except route designation would be deferred to a travel management plan.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>considered in Steese National Conservation Area. Emphasis is placed on managing the area to maintain the opportunity for the Fortymile caribou herd to utilize both present and historical use areas. When feasible consolidate future access routes with existing roads and trails within transportation corridors. These corridors will be intensively managed to minimize potential "barrier effect" on caribou movements. Transportation corridors may also be subject to surface use restrictions to avoid conflicts with caribou movements at crucial times.</p>	<p>free movement of caribou between upper Birch Creek, the north Steese, and the White Mountains. Consider impacts of developments in the corridor, including state and private land, and ensure it does not significantly impact the ability of caribou to migrate to historically used and biologically important habitats. Develop a management threshold density goal for BLM lands, limiting linear disturbance per unit area. Propose a cooperative effort with State of Alaska to develop a plan to maintain connectivity of habitat in the area.</p>		<p>BLM authorizations for use within the corridor, rather than limiting motorized use to existing or designated routes or developing management threshold density goals and a cooperative plan to maintain connectivity of the corridor as described in Alternative B.</p>	
<p><b>Forest and Woodland Products</b></p>	<p>Personal use of timber is allowed on all lands.</p>	<p>Personal use of timber: allowed on 36,000 acres; not allowed within the Steese SRMA (1,231,000 acres), including the Steese National Conservation Area</p>	<p>Personal use of timber: allowed on 1,195,000 acres including most of the Steese National Conservation Area; not allowed within the Birch Creek WSR Corridor and RNAs (72,000 acres).</p>	<p>Personal use of timber: allowed on all lands, including the Steese National Conservation Area (1,267,000 acres).</p>	
	<p>No commercial timber harvest is allowed within the Steese National Conservation Area. Not prohibited outside the National Conservation Area.</p>	<p>Commercial timber salvage sales: considered on 36,000 acres; not allowed within the Steese SRMA (1,231,000 acres), including the Steese National Conservation Area.</p>	<p>Commercial timber salvage sales: considered on all lands (1,267,000 acres), including the Steese National Conservation Area.</p>		

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	No commercial timber harvest is allowed within the Steese National Conservation Area. Not prohibited outside the National Conservation Area.	Commercial timber sales: considered on 36,000 acres; not allowed within the Steese SRMA (1,231,000 acres), including the Steese National Conservation Area.	Commercial timber sales: considered on 1,195,000 acres, including most of the Steese National Conservation Area; not allowed within the Birch Creek WSR Corridor and RNAs (72,000 acres).		Commercial timber sales would be considered on 741,000 acres; Not allowed within the Birch Creek WSR Corridor, research natural areas, and crucial caribou and Dall sheep habitats (526,000 acres).
	Forest products are reserved for local use within the Steese National Conservation Area.	Allow harvest of forest products for personal use on all lands throughout the subunit.			
	Consider commercial use of forest products outside the Steese National Conservation Area.	Commercial use of forest products: Considered on 36,000 acres; not allowed within the Steese SRMA (1,231,000 acres), including the Steese National Conservation Area.	Commercial use of forest products: Considered on 1,264,000 acres including most of the Steese National Conservation Area; not allowed within the RNAs (3,000 acres).		Commercial use of forest products: Considered on all lands (1,267,000 acres).
<b>Land Tenure</b>	Consider land exchange to acquire approximately 15,000 acres of State lands within the boundaries of the National Conservation Area.	Retain lands in the Steese National Conservation Area and Birch Creek. Consider acquisition of inholdings in these areas. Consider acquisition of lands conveyed to the State between the southern boundary of the North Steese National Conservation Area Unit and the Pinnell Mountain Trail. Consider acquisition, or disposal, including exchange, of scattered parcels around Circle for the purposes of consolidation. If federal mining claims located outside of the Steese National Conservation Area and Birch Creek WSR Corridor become null and void, and are not conveyed to the State, consider these lands for disposal or exchange.			
<b>Land Use Authorizations</b>	Four transportation corridors are identified. Two in the North Steese and two in the South Steese (Map 19)	Retain the Montana Creek to Preacher Creek Transportation Corridor in the North Steese National Conservation Area and the Great Unknown Creek Corridor in the South Steese National Conservation Area (Map 50).		None of the existing transportation corridors would be retained and no new transportation corridors would be designated.	
	No ROW avoidance areas are identified.	The Steese ACEC, RNAs, and Birch Creek WSR Corridor would be ROW avoidance areas.	There would be no ROW avoidance areas.		

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Fluid Leasable Minerals</b> (e.g., oil and gas)	The Steese subunit (1,267,000 acres) is closed to mineral leasing by public land orders. 1986 RMP recommended opening some areas, but decision was not implemented.	31,000 acres open with no surface occupancy; 3,000 acres open with standard stipulations; 1,233,000 acres closed (Map 33). The Steese National Conservation Area would be closed.	203,000 acres open with minor constraints; 71,000 acres open with standard stipulations; 993,000 acres closed (Map 35). 80% of the Steese National Conservation Area would be closed.	524,000 acres open with minor constraints; 158,000 acres open with standard stipulations; 585,000 acres closed (Map 37). 54% of the Steese National Conservation Area would be closed.	30,000 acres open; 1,237,000 acres closed, subject to Standard Lease Terms, Fluid Mineral Leasing Stipulations, and Standard Operating Procedures. (Map 38)
<b>Solid Leasable Minerals</b>	The Steese subunit (1,267,000 acres) is closed to mineral leasing by public land orders. 1986 RMP recommended opening some areas, but decision was not implemented.	34,000 acres open to solid leasable minerals; 1,233,000 acres closed (Map 33). The Steese National Conservation Area would be closed.	274,000 acres open; 993,000 acres closed (Map 35). 80% of the Steese National Conservation Area would be closed.	682,000 acres open; 585,000 acres closed (Map 37). 54% of the Steese National Conservation Area would be closed.	30,000 acres open; 1,237,000 acres closed. (Map 38)
		Coal leasing is deferred because the coal screening process (43 CFR 3420.1-4) has not been completed. A RMP amendment would be needed before coal leasing could occur. Only those BLM-managed public lands that have development potential may be identified as acceptable for further consideration for coal leasing.			
<b>Locatable Minerals</b> (e.g., gold)	The Steese subunit (1,267,000 acres) is withdrawn from mineral entry and location by of public land orders and the Steese National Conservation Area is closed by ANILCA.	34,000 acres open; 1,233,000 acres closed (Map 32). The Steese National Conservation Area would be closed.	274,000 acres open; 993,000 acres closed (Map 34). 80% of the Steese National Conservation Area would be closed.	682,000 acres open; 585,000 acres closed (Map 36). 54% of the Steese National Conservation Area would be closed.	30,000 acres open; 1,237,000 acres closed. The Steese National Conservation Area and Birch Creek WSR corridor would be closed (Map 38).
<b>Salable Minerals</b> (e.g., gravel)	1,267,000 acres open to disposal of sand, gravel, rock, and other saleable minerals if compatible with other provisions of the plan.	34,000 acres open to salable minerals; 1,233,000 acres closed.	1,198,000 acres open; 69,000 acres closed (Birch Creek WSR corridor).	1,276,000 acres open; 0 acres closed.	Same as Alternative C

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Recreation</b>	Plan does not identify the Steesc National Conservation Area as a SRMA, but it is managed as such.	Designate 1,246,000 acres as the Steese Special Recreation Management Area (Steese National Conservation Area and Birch Creek). Establish desired recreation setting character classes (Table 2.5, "Recreation Setting Character Matrix for the Eastern Interior Planning Area").			
	Four recreation management units: Primitive, Semi-Primitive Motorized, Wild and Scenic River, and Research Natural Areas (Map 48)	Divide the SRMA into seven Recreation Management Zones (Appendix H and Map 49).	Divide the SRMA into 10 Recreation Management Zones (Appendix H and Map 50).	Divide the SRMA into nine Recreation Management Zones (Appendix H and Map 51).	Divide the SRMA into nine Recreation Management Zones (Appendix H and Map 52).
<b>Travel Management</b>	OHV area designations: 3,000 acres Closed; 1,210,000 acres Limited; 54,000 acres undesignated	OHV area designations: 3,000 acres Closed; 1,264,000 acres Limited			OHV area designations: 1,267,000 acres Limited
	Research Natural Areas (RNAs) in the Steese National Conservation Area (3,000 acres) closed to motorized OHV use, including snowmobiles.				Interim Management same as A except: change from GVWR to curb weight; RNAs classified as LIMITED and open to winter snowmobile travel; airboats and hovercraft allowed.
	142,000 acres (Birch Creek, and Primitive management units – Map 48) limited by season of use (no summer OHV use).	All BLM-managed lands– 1,267,000 acres (Primitive, Semi-Primitive, Backcountry RMZs in the Steese National Conservation Area and Birch Creek, and other BLM lands outside the SRMA) limited by season of use (no summer OHV use).	680,000 acres (Primitive, Semi-Primitive and Backcountry RMZs in the Steesc National Conservation Area and Birch Creek) limited by season (no summer OHV use).	513,000 acres (Primitive, Semi-Primitive and Backcountry RMZs in the Steese National Conservation Area and Birch Creek) limited by season (no summer OHV use).	
1,066,000 acres (Semi-Primitive motorized unit –Map 48) limited by weight (summer). Cross-country use of vehicles 1,500 pounds gross vehicle weight rating (GVWR) allowed.	Not applicable	566,000 acres limited to existing trails (summer), including the Middlecountry and Frontcountry RMZs in the Steesc National Conservation Area and other BLM lands outside the SRMA.	733,000 acres (Middlecountry, Frontcountry RMZs and other BLM lands outside the SRMA) limited by weight (summer).	Deferred to Travel Management Plan within five years of the ROD.	

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	Winter OHV use limited to snowmobiles 1,500 pounds or less GVWR.	Winter OHV use limited to snowmobiles weighing 1,000 pounds or less on 1,264,000 acres; all areas except research natural areas (3,000 acres).			
	Birch Creek WSR: All forms of non-motorized use allowed. Motorboat use allowed without specific authorization.				
	Airboats and hovercraft prohibited in Steese National Conservation Area.	Airboats, hovercraft, and personal watercraft would not be permitted on non-navigable segments above the confluence of Birch Creek and an unnamed creek in T. 6N., R. 17E., Section 8.			Airboats and hovercraft allowed under interim management.
<b>Withdrawals</b>	100% of the Steese National Conservation Area withdrawn by ANILCA and additional public land orders under ANCSA.	Recommend retaining the ANILCA withdrawal on 100% of the Steese National Conservation Area.	Recommend retaining the ANILCA withdrawal on 80% of the Steese National Conservation Area; recommend issuing an opening order for 241,000 acres (20% of the National Conservation Area).	Recommend retaining the ANILCA withdrawal on 46% of the Steese National Conservation Area; recommend issuing an opening order for 646,000 acres (54% of the National Conservation Area).	Same as Alternative B
		Recommend partial revocation of ANCSA withdrawals to remove overlapping withdrawals within the Steese National Conservation Area.			
	All lands currently withdrawn by ANCSA withdrawals. Revocation or modification of withdrawals not addressed.	Recommend partial revocation of ANCSA withdrawals to open 36,000 acres to mining outside of the Steese National Conservation Area.			Recommend partial revocation of ANCSA withdrawals to open 28,000 acres to mining outside of the Steese National Conservation Area
		In addition to lands withdrawn under ANILCA pursuant to the WSR Act, an additional 1,600 acres within the Birch Creek WSR Corridor would be recommended for withdrawal from the mining laws under the authority of FLPMA.			
	All lands currently withdrawn by ANCSA withdrawals. Revocation or modification of withdrawals not addressed.	Approximately 16,400 acres outside of the Steese National Conservation Area but adjacent to the Birch Creek WSR Corridor would be recommended for withdrawal from the mining laws under the authority of FLPMA.		Approximately 15,200 acres outside of the Steese National Conservation Area would be recommended for withdrawal from the mining laws under the authority of FLPMA.	Approximately 33,000 acres outside of the Steese National Conservation Area would be recommended for withdrawal from the mining laws under the authority of FLPMA.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	Modification of these public land orders for land disposal not addressed	Recommend modification of public land orders to allow for disposal of Land tenure Zone 3 lands (Appendix G) while keeping them closed to mineral entry and mineral leasing.			Recommend modification of public land orders to allow for disposal and revoke ANCSA withdrawals on these lands.
<b>Areas of Critical Environmental Concern</b>	No ACECs are designated.	Designate the Steese ACEC (924,000 acres) within the Steese National Conservation Area.	Designate the Steese ACEC (457,000 acres) within the Steese National Conservation Area.	Designate the Steese ACEC (193,000 acres) within the Steese National Conservation Area.	No ACECs designated.
<b>Research Natural Areas</b>	Big Windy Hot Springs (160 acres) and Mount Prindle (2,800 acres) within the Steese National Conservation Area are designated as RNAs. These areas would be managed to maintain a Primitive recreation setting and would be closed to mineral location and mineral leasing.				
	No surface-disturbing activities allowed except BLM-authorized research projects. RNAs would be closed to camping. Primitive campsites may be established outside the RNA boundaries and improved access in the form of trails could be developed. Closed to OHV use.	No surface-disturbing activities allowed except BLM-authorized research projects and primitive hiking trails. Primitive camping would be allowed in the RNAs. Closed to OHV use.		No surface-disturbing activities allowed except BLM-authorized research projects and primitive hiking trails. Primitive camping would be allowed. Limited to winter OHV use; no summer OHV use.	
<b>Wild and Scenic Rivers</b>	ORVs are not identified for Birch Creek.	Identify Outstandingly Remarkable Values (ORVs) for Birch Creek WSR as scenic, recreation, and fisheries.			
	Other rivers in area have not been studied for eligibility or suitability.	Big Windy Creek (14 miles) recommended suitable for classification as "wild."	No rivers recommended suitable.		

## **2.9. Upper Black River Subunit**

### **2.9.1. Alternative A: No Action Alternative**

There is no existing land use plan for the Upper Black River Subunit. Applications for activities or use of BLM-managed lands are considered on a case-by-case basis. The entire subunit is currently withdrawn from mineral location and mineral leasing pursuant to ANCSA 17(d)(1). There are no existing federal mining claims or mineral leases. Existing withdrawals in the planning area are described more fully in section 3.3.8 Withdrawals.

There are no OHV designations in place and the use of motorized vehicles and mechanized equipment, motorized water craft, and aircraft is unrestricted. No recreation management areas have been identified. The subunit is extremely remote and ongoing uses of BLM-managed lands consist primarily of subsistence or casual recreational use.

Visual resource management is considered on a project-specific basis as applications for development or permits activities or use of BLM-managed lands are received.

There are no special designations such as ACECs, or WSRs within the subunit. One eligible river in the Upper Black River subunit has been identified in the Wild and Scenic Rivers Classification Findings for Eligible Rivers (Table E.3). Salmon Fork of the Black River is found to have characteristics eligible for a tentative classification of Wild. This tentative classifications would be maintained through mitigation standards through NEPA review until suitability can be evaluated.

Guidance for wildland fire management is provided by the BLM Alaska Land Use Plan Amendment for Wildland Fire and Fuels Management (BLM 2004b, 2005c). The decisions are described under section 2.6.2.12 Wildland Fire Ecology and Management, Management Common to All Subunits and Action Alternatives.

### **2.9.2. Action Alternatives: Upper Black River Subunit**

In addition to those decisions listed as Common To All Subunits under section 2.6, the following decisions would apply under the Upper Black River Subunit.

#### **2.9.2.1. Alternative B: Upper Black River Subunit**

##### **2.9.2.1.1. Resources**

###### **2.9.2.1.1.1. Cave and Karst Resources**

GOAL: Manage significant cave and karst systems to protect and maintain their resource, educational, scientific, and recreational values.

DECISIONS:

There are two significant caves in the Upper Black River Subunit: Fort Creek Cave (#AK-028-001) and Cave #AK-028-002. These caves are within the proposed Salmon Fork ACEC and no additional administrative designation is recommended.

Setting Prescription: Primitive

Management Objectives: Significant caves would be managed to prevent resource damage and to provide for visitor health and safety.

### **2.9.2.1.1.2. Cultural Resources**

DECISIONS:

In addition to those decision listed as Common To All Subunits in section 2.6.2.2, the following decision would apply under Alternative B:

All cultural sites are designated for scientific use.

### **2.9.2.1.1.3. Fish and Aquatic Species**

DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.2.3, the following decisions would apply under Alternative B:

The following 28 watersheds would be managed as RCAs (Map 11).

1. Bear Mountain Creek (HUC # 190402040404)
2. Black River (HUC # 190402040802)
3. Big Duck Lake-Black River (HUC # 190402040804)
4. Big Sitdown Creek (HUC # 190404010903)
5. Fourteenmile Creek-Yukon River (HUC # 190404011906)
6. Grayling Fork Black River (HUC # 190402040504)
7. Grayling Fork Black River (HUC # 190402040502)
8. Grayling Fork Black River (HUC # 190402040705)
9. Grayling Fork Black River (HUC # 190402040701)
10. Headwaters Little Black River (HUC # 190402060105)
11. Headwaters Kandik River (HUC # 190404010902)
12. Indian Grave Creek (HUC # 190404010906)
13. Kandik River (HUC # 190404010908)
14. Little Black River (HUC # 190402060106)
15. Little Black River (HUC # 190402060109)
16. Little Black River (HUC # 190402060404)
17. Lower Kevinjik Creek (HUC # 190402041309)
18. Outlet Runt Creek (HUC # 190402041005)
19. Salmon Fork Black River (HUC # 190402041107)
20. Salmon Fork Black River (HUC # 190402041403)
21. Salmon Fork Black River (HUC # 190402041105)
22. Tetthajik Creek (HUC # 190402041207)
23. Unnamed Tributary - Upper Black River (HUC # 190402040704)
24. Unnamed Tributary - Upper Black River (HUC # 190402040702)
25. Unnamed Tributary - Upper Black River (HUC # 1190402040703)
26. Unnamed Tributary - Kandik (HUC # 190404010901)
27. Yukon River (HUC # 190404011903)
28. Yukon River (HUC # 190404011904)

Complete watershed assessments Section I.5, “Watershed Assessment Process” based on the following priorities.

1. Watersheds containing areas of high/moderate locatable mineral potential.
2. Watersheds identified as RCAs.
3. Other watersheds.

#### **2.9.2.1.1.4. Visual Resources**

##### **DECISIONS:**

Under Alternative B, the entire subunit would be managed as a VRM Class II. Any developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with minor changes to landform and vegetation.

#### **2.9.2.1.1.5. Wilderness Characteristics**

##### **OBJECTIVE:**

Allow for multiple use while maintaining naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on 2,360,000 acres so that these lands retain their wilderness characteristics for the life of the RMP.

##### **DECISIONS:**

Consistent with allocation decisions in the RMP, allow other multiple-uses on lands where wilderness characteristics would be maintained, while applying management restrictions (such as conditions of use or mitigation measures) to avoid or minimize impacts to wilderness characteristics and meet the objective retaining wilderness characteristics over the life of the RMP.

Wilderness characteristics would be maintained on 2,360,000 acres (all of the lands with wilderness characteristics in this subunit) (Map 78).

**RATIONALE:** Wilderness characteristics would be maintained because of decisions in this alternative to designate the Salmon Fork ACEC, close the subunit to mineral leasing and mining, retain lands in federal management, and set OHV designations. Although cross-country OHV is allowed in many areas, the low level of summer OHV use, limitations on vehicle weight, and lack of access would allow for maintenance of wilderness characteristics including naturalness, and opportunities for solitude or primitive and unconfined recreation. Additionally, BLM-authorized uses would be further analyzed through the NEPA process for impacts to size, naturalness, primitive recreation, and solitude, and stipulated mitigation measures would be applied where needed to minimize impacts.

#### **2.9.2.1.1.6. Wildlife**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.2.13, the following decision would apply under Alternative B:

Domestic sheep, goats, and camelids (including alpaca and llama) are not allowed in Dall sheep habitat.

## **2.9.2.1.2. Resource Uses**

### **2.9.2.1.2.1. Forest and Woodland Products**

#### **DECISIONS:**

In addition to those decision listed as Common To All Subunits in section 2.6.3.1, the following decisions would apply under Alternative B:

Personal use of timber products would be allowed on all lands.

Commercial timber sales, including salvage sales, would not be allowed.

Commercial use of forest products would be allowed on all lands.

### **2.9.2.1.2.2. Land Tenure**

#### **DECISIONS:**

In addition to those decisions listed as Common To All Subunits in section 2.6.3.2, the following decisions would apply under Alternative B:

The Upper Black River Subunit, with the exception of lands around Circle, is identified as Zone 1 for retention. Consider acquisition of private inholdings from willing sellers.

The remaining lands are identified as Zone 2. Consider acquisition or disposal including exchange of scattered parcels around Circle for the purposes of consolidation (Map 99). No lands are identified as Zone 3.

### **2.9.2.1.2.3. Land Use Authorizations**

#### **DECISION:**

In addition to those decision listed as Common To All Subunits in section 2.6.3.3, the following decisions would apply under Alternative B:

Designate the Salmon Fork ACEC as a ROW avoidance area.

### **2.9.2.1.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals.

#### **2.9.2.1.2.4.1. Fluid Leasable Minerals**

#### **DECISIONS:**

In addition to those decision listed as Common To All Subunits in section 2.6.3.5.1, the following decisions would apply under Alternative B:

The entire subunit, 2,360,000 acres would be closed to fluid mineral leasing.

#### **2.9.2.1.2.4.2. Solid Leasable Minerals**

DECISIONS:

In addition to those decision listed as Common To All Subunits in section 2.6.3.5.2, the following decisions would apply under Alternative B:

The entire subunit, 2,360,000 acres would be closed to solid mineral leasing.

#### **2.9.2.1.2.4.3. Locatable Minerals**

DECISIONS:

In addition to those decision listed as Common To All Subunits in section 2.6.3.5.3, the following decisions would apply under Alternative B:

The entire subunit, 2,360,000 acres would be closed to locatable minerals.

#### **2.9.2.1.2.4.4. Salable Minerals**

DECISIONS:

In addition to those decision listed as Common To All Subunits in section 2.6.3.5.4, the following decisions would apply under Alternative B:

The Salmon Fork ACEC, 621,000 acres would be closed to salable minerals.

The remainder of the subunit, 1,739,000 acres, would be open to salable minerals.

#### **2.9.2.1.2.5. Travel Management**

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative B.

DECISIONS:

Off-Highway Vehicle Designation – LIMITED

A comprehensive travel management plan has been defined for the Upper Black River Subunit (Map 57). The decisions from this plan are summarized below.

##### Travel Management Prescriptions:

All forms of non-motorized use would be allowed; except for the use of pack goats in Dall sheep habitat.

Cross-country winter use (October 15 through April 30) of snowmobiles 50 inches or less in width, and weighing 1,000 pounds curb weight and less would be allowed throughout the entire subunit.

Cross-country summer use (May 1 through October 14) use of vehicles 64 inches or less in width and weighing 1,500 pounds curb weight and less would be allowed outside of the Salmon Fork ACEC. Within the ACEC, no summer OHV use would be allowed.

Aircraft use would be unrestricted, with the following provisions: Minimal clearing of rocks, downed logs, and brush would be allowed; construction or formal improvement of landing areas would occur by permit only; and, use of gravel bars and winter snow areas would be allowed, subject to reasonable provisions in the Salmon Fork to protect the Outstandingly Remarkable Values of the suitable “wild” river segment.

Use of motorized boats would be unrestricted.

A permit or approved Plan of Operations would be required for all other vehicle use.

New restrictions could be developed for the purposes of site protection, visitor safety, and/or maintaining an unconfined and primitive type of recreation consistent with the existing wilderness character.

**RATIONALE:** Although current OHV use is low in this subunit, limiting the use of OHVs by weight or seasonal closure would reduce potential for impacts to stream beds, soil, water, vegetation, fish, and wildlife in the event that OHV use increased over the life of the plan. Restricting summer use of OHVs within the Salmon Fork ACEC would provide additional protection to special status plant habitat, riparian habitat, and fish. Allowing for unrestricted use of motorboats recognizes the State of Alaska’s management of many of the waterways in this subunit and ongoing motor boat access by subsistence users.

#### **2.9.2.1.2.6. Withdrawals**

In addition to those decision listed as Common To All Subunits in section 2.6.3.8, the following decisions would apply under Alternative B:

##### **DECISIONS**

Recommend to the Secretary of the Interior that ANCSA 17(d)(1) withdrawals be retained on the entire subunit, approximately 2,360,000 acres until a new FLPMA withdrawal from the mining laws is approved to protect resource values (fish and wildlife habitat, raptor nesting habitat, rare plant habitat, and subsistence resources and use areas).

#### **2.9.2.1.3. Special Designations**

##### **2.9.2.1.3.1. Areas of Critical Environmental Concern**

##### **DECISIONS:**

Designate approximately 621,000 acres of BLM-managed lands within the Salmon Fork watershed as the Salmon Fork ACEC (Map 69) to protect relevant and important values including bald eagle nesting habitat, priority fish habitat, and rare flora.

Manage limestone habitats and steep south facing slopes and bluffs to minimize impacts on rare flora.

Maintain water quality to support nesting Bald Eagles and salmon habitat.

Coordination and notification with the Government of Canada is required prior to development affecting caribou habitat.

Provisions should be made in management to allow the caribou herd to continue to utilize the winter habitats in the area.

Avoid or minimize the size, extent, duration, and level of activities in concentrated seasonal use areas. Additional limitations on OHV use (such as seasonal restrictions) may be instituted to reduce impacts to natural resources.

### SUMMARY OF MANAGEMENT IN THE ACEC

The following is a summary of other management decisions that would apply within the ACEC.

The ACEC would be closed to locatable mineral entry, leasable minerals, and salable minerals. The ACEC would be retained in federal land status and is a right-of-way avoidance area. Land use permits and leases would be considered. The SOPs (Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) would apply to activities requiring a permit from BLM.

A full description of the OHV limitations can be found in section 2.9.2.1.2.5 Travel Management. A summary follows:

- The OHV area designation is limited.
- Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.
- The ACEC would be closed to summer OHV use.

#### **2.9.2.1.3.2. Wild and Scenic Rivers**

##### DECISIONS:

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

Under Alternative B, the Salmon Fork of the Black River would be recommended suitable for designation under the Wild and Scenic Rivers Act.

River Name	Classification	Outstandingly Remarkable Values	Miles
Salmon Fork of the Black	“wild”	wildlife	52

**RATIONALE:** The Salmon Fork is free-flowing and possesses outstandingly remarkable values as described in Section E.1.1, “Determining Eligibility”. All eligible rivers must be considered suitable in one alternative to allow for analysis of the effects of designation.

## 2.9.2.2. Alternative C: Upper Black River Subunit

### 2.9.2.2.1. Resources

#### 2.9.2.2.1.1. Cave and Karst Resources

##### DECISIONS:

Same as Alternative B.

#### 2.9.2.2.1.2. Cultural Resources

##### DECISIONS:

Same as Alternative B.

#### 2.9.2.2.1.3. Fish and Aquatic Species

##### DECISION:

In addition to the decisions listed as Common To All Subunits in section 2.6.2.3, the following decisions would apply under Alternative C:

The following 13 watersheds would be managed as RCAs (Map 12).

1. Big Sitdown Creek (HUC # 190404010903)
2. Fourteenmile Creek-Yukon River (HUC # 190404011906)
3. Headwaters Kandik River (HUC # 190404010902)
4. Indian Grave Creek (HUC # 190404010906)
5. Kandik River (HUC # 190404010908)
6. Lower Kevinjik Creek (HUC # 190402041309)
7. Salmon Fork Black River (HUC # 190402041107)
8. Salmon Fork Black River (HUC # 190402041403)
9. Salmon Fork Black River (HUC # 190402041105)
10. Tetthajik Creek (HUC # 190402041207)
11. Unnamed Tributary - Kandik (HUC # 190404010901)
12. Yukon River (HUC # 190404011903)
13. Yukon River (HUC # 190404011904)

Complete watershed assessments Section I.5, "Watershed Assessment Process" as necessary for management.

#### 2.9.2.2.1.4. Visual Resources

##### DECISIONS:

Proposed VRM classes for Alternative C are described on Map 24.

Under Alternative C, the Salmon Fork ACEC and lands between the ACEC and the Arctic National Wildlife Refuge with wilderness characteristics, would be managed as VRM Class II. Any developments would be designed using materials that blend with the surrounding landscape

and resemble landscape characteristics of line, form, color and texture with minor changes to landform and vegetation.

All other BLM-managed lands would be assigned a VRM Class IV. Development activities would be designed to harmonize with the visually dominating elements of the surrounding landscape characteristics of line, form, color and texture but major modification of the natural landscape would be allowed.

#### **2.9.2.2.1.5. Wilderness Characteristics**

##### **OBJECTIVE:**

Allow for multiple use while maintaining naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on 623,000 acres so that these lands retain their wilderness characteristics for the life of the RMP.

##### **DECISION:**

Consistent with allocation decisions in the RMP, allow other multiple-uses on lands where wilderness characteristics would be maintained, while applying management restrictions (such as conditions of use or mitigation measures) to avoid or minimize impacts to wilderness characteristics and meet the objective retaining wilderness characteristics over the life of the RMP.

Wilderness characteristics would be maintained on 623,000 acres (26 percent of the lands with wilderness characteristics in this subunit). These lands occur within the Salmon Fork ACEC (Map 79).

**RATIONALE:** Wilderness characteristics would be maintained because decisions in this alternative close the Salmon Fork ACEC to mineral leasing and mining, retain the lands in federal management, and to limit OHV use. Although cross-country OHV use is allowed, the lack of recreational OHV use in the subunit and the remoteness of the area would allow for maintenance of wilderness characteristics. Additionally, BLM-authorized uses would be further analyzed through the NEPA process for impacts to size, naturalness, primitive recreation, and solitude, and stipulated mitigation measures would be applied where needed to minimize impacts. The remaining lands in the subunit would also likely retain their wilderness characteristics over the life of the plan because of the lack of access and infrastructure, the high cost of resource extraction, low mineral potential, and low levels of use projected to occur in the subunit. Recreational opportunities would remain unconfined and primitive in nature.

#### **2.9.2.2.2. Resource Uses**

##### **2.9.2.2.2.1. Forest and Woodland Products**

##### **DECISIONS:**

In addition to the decisions listed in section 2.6.3.1, the following decisions would apply under Alternative C:

Personal use of timber, commercial use of forest products, and commercial timber salvage sales would be allowed on all lands.

Commercial timber sales (large and small) would be allowed on all lands except the Salmon Fork ACEC (621,000 acres).

#### **2.9.2.2.2.2. Land Tenure**

DECISIONS:

Same as Alternative B.

#### **2.9.2.2.2.3. Land Use Authorizations**

DECISIONS:

In addition to those decisions listed as Common To All Subunits in section 2.6.3.3, the following decision would apply under Alternative C:

No right-of-way avoidance areas would be designated.

#### **2.9.2.2.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals.

##### **2.9.2.2.2.4.1. Fluid Leasable Minerals**

DECISIONS:

In addition to those decisions listed as Common To All Subunits in section 2.6.3.5.1, the following decisions would apply under Alternative C:

The Salmon Fork ACEC (621,000 acres) would be closed to fluid leasable minerals.

Approximately 104,000 acres in the Circle area would be open to fluid mineral leasing, subject to minor constraints (Map 40).

The remainder of the subunit, 1,635,000 acres, would be open to fluid mineral leasing, subject to the Standard Lease Terms.

##### **2.9.2.2.2.4.2. Solid Leasable Minerals**

DECISIONS:

In addition to those decision listed as Common To All Subunits in section 2.6.3.5.2, the following decision would apply under Alternative C:

The Salmon Fork ACEC (621,000 acres) would be closed to solid leasable minerals.

The same areas that are open to fluid mineral leasing (Map 40) under this alternative would also be open to solid mineral leasing, subject to the same constraints.

### **2.9.2.2.2.4.3. Locatable Minerals**

#### DECISIONS:

In addition to those decisions listed as Common To All Subunits in section 2.6.3.5.3, the following decision would apply under Alternative C:

All BLM-managed lands within the Upper Black River Subunit (2,360,000 acres) would be open to locatable mineral entry (Map 41).

### **2.9.2.2.2.4.4. Salable Minerals**

#### DECISIONS:

In addition to those decision listed as Common To All Subunits in section 2.6.3.5.4, the following decision would apply under Alternative C:

All BLM-managed lands within the Upper Black River Subunit would be open to salable mineral disposal.

### **2.9.2.2.2.5. Travel Management**

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative C.

#### DECISIONS:

#### Off-Highway Vehicle Designation – LIMITED

A comprehensive travel management plan has been defined for the Upper Black River Subunit. The decisions from this plan are summarized below. Once the signed ROD for the RMP is released, the BLM will develop a supplemental rule to implement the with the travel management prescriptions listed below.

#### Travel Management Prescriptions:

All forms of non-motorized use would be allowed.

Cross-country winter use (October 15 through April 30) of snowmobiles 50 inches or less in width, and weighing 1,000 pounds curb weight and less would be allowed throughout the entire subunit.

Cross-country summer use (May 1 through October 14) use of vehicles 64 inches or less in width and weighing 1,500 pounds curb weight and less would be allowed throughout the entire subunit.

Aircraft use would be unrestricted, with the following provisions: Minimal clearing of rocks, downed logs, and brush would be allowed; construction or formal improvement of landing areas would occur by permit only; and, use of gravel bars and winter snow areas would be allowed, subject to reasonable provisions to protect resource values.

Use of motorized boats would be unrestricted.

A permit or approved Plan of Operations would be required for all other vehicle use.

New restrictions could be developed for the purposes of site protection, visitor safety, and/or maintaining an unconfined and primitive type of recreation consistent with the existing wilderness characteristics.

**RATIONALE:** Although current OHV use is low in this subunit, limiting the use of OHVs by weight would reduce potential for impacts to soil, water, vegetation, fish, and wildlife throughout the subunit in the event that OHV use increased over the life of the plan.

#### **2.9.2.2.2.6. Withdrawals**

In addition to those decisions listed as Common To All Subunits in section 2.6.3.8, the following decision would apply under Alternative C:

##### **DECISIONS:**

Recommend to the Secretary of the Interior that ANCSA 17(d)(1) withdrawals be partially revoked to open the entire subunit, approximately 2,360,000 acres, to locatable mineral entry.

#### **2.9.2.2.3. Special Designations**

##### **2.9.2.2.3.1. Areas of Critical Environmental Concern**

##### **DECISIONS:**

Designate approximately 621,000 acres within the Salmon Fork watershed as the Salmon Fork ACEC (Map 69) to protect relevant and important values including bald eagle nesting habitat, priority fish habitat, and rare flora.

Manage limestone habitats and steep south facing slopes and bluffs to minimize impacts on rare flora.

Maintain water quality to support nesting Bald Eagles and salmon habitat.

Coordination and notification with the Government of Canada is required prior to development affecting caribou habitat.

Provisions should be made in management to allow the caribou herd to continue to utilize the winter habitats in the area.

Avoid or minimize the size, extent, duration, and level of activities in concentrated seasonal use areas. Additional limitations on OHV use (such as seasonal restrictions) may be instituted to reduce impacts to natural resources.

#### **SUMMARY OF MANAGEMENT IN THE ACEC**

The following is a summary of other management decisions that would apply within the ACEC under Alternative C. The travel management and minerals decisions are somewhat different than under Alternative B.

The ACEC would be open to locatable mineral entry, open to salable minerals, and closed to mineral leasing. Subject to pending conveyance to the State and Native corporations, the ACEC would be retained in federal land status. Land use permits and leases would be considered.

Standard Operating Procedures (Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) would apply to activities requiring a permit from the BLM. The OHV designation is limited. Cross-country use would be allowed year-round for vehicles weighing 1,000 pounds curb weight and less. A full description of the OHV limitations can be found in section 2.9.2.2.2.5 Travel Management.

RATIONALE: The rationale for designating the ACEC is the same as in Alternative B.

### **2.9.2.2.3.2. Wild and Scenic Rivers**

#### DECISIONS:

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

Under Alternative C, no rivers would be recommended suitable for designation under the Wild and Scenic Rivers Act.

RATIONALE: In 2003, the BLM issued a recordable disclaimer of interest to the State of Alaska for the bed of the Salmon Fork Black River from its confluence with the Black River upstream 74 river miles to the International Boundary. The Salmon Fork is within a proposed ACEC in Alternative C. The two uses that are most likely to have an effect on the ORVs are gold mining and oil and gas development. The ACEC is open to the location of new mining claims and closed to mineral leasing. In all alternatives, the river watershed is considered a Riparian Conservation Area with riparian area restrictions that would sufficiently protect the outstandingly remarkable features. For these reasons, and the lack of support for the designation of new rivers by the state, the Salmon Fork has been determined to be not suitable under Alternative C.

## **2.9.2.3. Alternative D: Upper Black River Subunit**

### **2.9.2.3.1. Resources**

#### **2.9.2.3.1.1. Cave and Karst Resources**

##### DECISIONS:

Same as Alternative B.

#### **2.9.2.3.1.2. Cultural Resources**

##### DECISIONS:

Same as Alternative B.

#### **2.9.2.3.1.3. Fish and Aquatic Species**

##### DECISION:

In addition to the decisions listed as Common To All Subunits in section 2.6.2.3, the following decisions would apply under Alternative D:

The following five watersheds would be managed as Riparian Conservation Areas (Map 13).

1. Headwaters Kandik River (HUC # 190404010902)
2. Kandik River (HUC # 190404010908)
3. Salmon Fork Black River (HUC # 190402041107)
4. Salmon Fork Black River (HUC # 190402041403)
5. Salmon Fork Black River (HUC # 190402041105)

Complete watershed assessments (Appendix I *Fisheries and Aquatic Resources*) as necessary for management.

#### **2.9.2.3.1.4. Visual Resources**

##### DECISIONS:

Under Alternative D all BLM-managed lands would be assigned a VRM Class IV. Development activities would be designed to harmonize with the visually dominating elements of the surrounding landscape characteristics of line, form, color and texture but major modification of the natural landscape would be allowed.

#### **2.9.2.3.1.5. Wilderness Characteristics**

##### OBJECTIVE:

Provide for multiple uses throughout the Upper Black River Subunit consistent with other resource values.

##### DECISION:

Under Alternative D, wilderness characteristics would not be explicitly maintained in the Upper Black River Subunit.

#### **2.9.2.3.2. Resource Uses**

##### **2.9.2.3.2.1. Forest and Woodland Products**

##### DECISIONS:

In addition to those decisions listed as Common To All Subunits in section 2.6.3.1, the following decisions would apply under Alternative D:

Same as Alternative B, except that commercial timber sales (both large and small) would be allowed within the Salmon Fork ACEC.

##### **2.9.2.3.2.2. Land Tenure**

##### DECISIONS:

Same as Alternative B.

### **2.9.2.3.2.3. Land Use Authorizations**

#### DECISIONS:

Same as Alternative C.

### **2.9.2.3.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals.

#### **2.9.2.3.2.4.1. Fluid Leasable Minerals**

##### DECISIONS:

In addition to those decision listed as Common To All Subunits in section 2.6.3.5.1, the following decision would apply under Alternative D:

Approximately 623,000 acres in the Salmon Fork ACEC and lands between the ACEC and the Arctic National Wildlife Refuge would be open to fluid mineral leasing, subject to minor constraints.

The remainder of the subunit, approximately 1,737,000 acres, would be open to fluid mineral leasing, subject to the Standard Lease Terms (Map 42).

#### **2.9.2.3.2.4.2. Solid Leasable Minerals**

##### DECISIONS:

In addition to those decisions listed as Common To All Subunits in section 2.6.3.5.1, the following decision would apply under Alternative D:

The same areas that are open to fluid mineral leasing (Map 42) would also be open to solid mineral leasing subject to the same constraints.

#### **2.9.2.3.2.4.3. Locatable Minerals**

##### DECISIONS:

Same as Alternative C, the entire subunit (2,360,000 acres) would be open to locatable mineral entry.

#### **2.9.2.3.2.4.4. Salable Minerals**

##### DECISIONS:

Same as Alternative C.

### **2.9.2.3.2.5. Travel Management**

#### DECISION:

Same as Alternative C.

#### **2.9.2.3.2.6. Withdrawals**

DECISION:

Same as Alternative C.

#### **2.9.2.3.3. Special Designations**

##### **2.9.2.3.3.1. Areas of Critical Environmental Concern**

DECISION:

Designate 621,000 acres as the Salmon Fork ACEC to protect relevant and important values including bald eagle nesting habitat, priority fish habitat, and rare flora. Management intent would be the same as Alternatives B and C.

##### SUMMARY OF MANAGEMENT IN THE ACEC

The following is a summary of other management decisions that would apply within the ACEC under Alternative D. The minerals decisions are different than under Alternatives B and C.

The ACEC would be open to locatable mineral entry and salable minerals. The ACEC would be open to mineral leasing subject to minor constraints. Subject to pending conveyance to the State and Native corporations, the ACEC would be retained in federal land status. Land use permits and leases would be considered. Standard Operating Procedures (Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) would apply to activities requiring a permit from the BLM. The OHV area designation is limited. Cross-country use would be allowed year-round for vehicles weighing 1,000 pounds curb weight and less. A full description of the OHV limitations can be found in section 2.9.2.3.2.5 Travel Management.

**RATIONALE:** The rationale for designating the ACEC is the same as in Alternative B. In order to provide a wider range of alternatives for analysis, the ACEC would be open to locatable mineral entry under this alternative. No mineral development is anticipated during the life of the plan due to the lack of mineral potential in the ACEC and its remote location.

##### **2.9.2.3.3.2. Wild and Scenic Rivers**

DECISIONS:

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

Under Alternative D, no rivers would be recommended suitable for designation under the Wild and Scenic Rivers Act.

**RATIONALE:** In 2003, the BLM issued a recordable disclaimer of interest to the State of Alaska for the bed of the Salmon Fork Black River from its confluence with the Black River upstream to the International Boundary. The Salmon Fork is within a proposed ACEC in Alternative D. The river watershed is considered a Riparian Conservation Area, with riparian area restrictions that would protect the Outstandingly Remarkable Values. For these reasons, and the lack of

support for designation of new rivers by the state, the Salmon Fork has been determined to be not suitable for designation under Alternative D.

## **2.9.2.4. Alternative E (Proposed RMP): Upper Black River Subunit**

### **2.9.2.4.1. Resources**

#### **2.9.2.4.1.1. Cave and Karst Resources**

DECISIONS:

Same as Alternative B.

#### **2.9.2.4.1.2. Cultural Resources**

DECISIONS:

Same as Alternative B.

#### **2.9.2.4.1.3. Fish and Aquatic Species**

DECISION:

In addition to the decisions listed as Common To All Subunits in section 2.6.2.3, the following decisions would apply under Alternative E:

The following watersheds would be managed as RCAs (Map 11). These are the same as Alternative B.

1. Bear Mountain Creek (HUC # 190402040404)
2. Black River (HUC # 190402040802)
3. Big Duck Lake-Black River (HUC # 190402040804)
4. Big Sitdown Creek (HUC # 190404010903)
5. Fourteenmile Creek-Yukon River (HUC # 190404011906)
6. Grayling Fork Black River (HUC # 190402040504)
7. Grayling Fork Black River (HUC # 190402040502)
8. Grayling Fork Black River (HUC # 190402040705)
9. Grayling Fork Black River (HUC # 190402040701)
10. Headwaters Little Black River (HUC # 190402060105)
11. Headwaters Kandik River (HUC # 190404010902)
12. Indian Grave Creek (HUC # 190404010906)
13. Kandik River (HUC # 190404010908)
14. Little Black River (HUC # 190402060106)
15. Little Black River (HUC # 190402060109)
16. Little Black River (HUC # 190402060404)
17. Lower Kevinjik Creek (HUC # 190402041309)
18. Outlet Runt Creek (HUC # 190402041005)
19. Salmon Fork Black River (HUC # 190402041107)
20. Salmon Fork Black River (HUC # 190402041403)
21. Salmon Fork Black River (HUC # 190402041105)

22. Tetthajik Creek (HUC # 190402041207)
23. Unnamed Tributary - Upper Black River (HUC # 190402040704)
24. Unnamed Tributary - Upper Black River (HUC # 190402040702)
25. Unnamed Tributary - Upper Black River (HUC # 1190402040703)
26. Unnamed Tributary - Kandik (HUC # 190404010901)
27. Yukon River (HUC # 190404011903)
28. Yukon River (HUC # 190404011904)

Complete watershed assessments Section I.5, “Watershed Assessment Process” as necessary for management.

#### **2.9.2.4.1.4. Visual Resources**

In addition to the decisions listed as Common To All Subunits in section 2.6.2.9, the following decisions would apply under Alternative E:

##### **DECISION:**

Proposed VRM classes for Alternative E are described on Map 25.

Under Alternative E, the Salmon Fork ACEC and riparian conservation areas would be managed as VRM Class II. Any developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with minor changes to landform and vegetation.

All other BLM-managed lands would be assigned a VRM Class IV. Development activities would be designed to harmonize with the visually dominating elements of the surrounding landscape characteristics of line, form, color and texture but major modification of the natural landscape would be allowed.

#### **2.9.2.4.1.5. Wetlands and Floodplains**

In addition to the Water Resource decisions listed as Common To All Subunits in section 2.6.2.10, the following decisions would apply under Alternative E:

##### **DECISIONS:**

Within five years of signing the ROD or by management direction, undertake development of a step-down Watershed Management Plan (WMP) for the Black River watershed. Watershed planning helps address water quality problems in a holistic manner by fully assessing the potential contributing causes and sources of pollution including uplands, then prioritizing restoration and protection strategies to address these problems. Site specific soil and water management determinations (e.g., watershed, floodplain-wetland, or riparian rehabilitation techniques, monitoring techniques and schedule, and the design and placement of improvements) will be developed in the interdisciplinary Watershed Management Planning phase for resource programs. The “Watershed Assessment Matrix” (Table I.1), depicting range of desired conditions for aquatic habitats would be incorporated in the Watershed Management Plan as well as other science-based watershed assessment tools. Relevant new science and new empirical water resource data would also be incorporated in the WMP. Additional SOPs and Fluid Mineral Leasing Stipulations for land uses may be developed through the step-down watershed management plan.

### **2.9.2.4.1.6. Wilderness Characteristics**

#### **OBJECTIVE:**

Reduce impacts of multiple-use activities to maintain naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on 1,114,000 acres.

#### **DECISIONS:**

The BLM would manage 1,246,000 acres for other multiple uses as a priority over protecting wilderness characteristics.

The BLM would manage 1,114,000 acres to emphasize other resources values and multiple uses while applying management restrictions to reduce impacts to wilderness characteristics. These lands are located within the Salmon Fork ACEC and riparian conservation areas.

The BLM would not manage any lands to protect wilderness characteristics as a priority over other resource values and multiple uses.

The types of activities/projects that could potentially affect wilderness characteristics would require further NEPA analysis. The BLM will monitor wilderness characteristics through this NEPA process. In addition, on-the-ground or aerial monitoring will be done in conjunction with monitoring for other resources.

**RATIONALE:** Under BLM Manual 6320 the BLM can manage areas to emphasize other resource values and multiple uses while applying management restrictions to protect wilderness characteristics. Given the large size of most of these areas in the Upper Black River Subunit many land uses could occur that would not impact naturalness, solitude, or primitive recreation on a landscape scale, or the size of the units. Management for other resource drivers such as fish, subsistence, and wildlife are complementary to maintaining wilderness characteristics. Under Alternative E, management decisions to designate ACECs and riparian conservation areas to protect aquatic and riparian habitats would result in maintenance of wilderness characteristics in these areas. Additionally, when the RMP is implemented uses proposed in these areas would be further analyzed through the NEPA process for impacts to size, naturalness and solitude and stipulated mitigation measures would be applied where needed to minimize impacts.

### **2.9.2.4.1.7. Wildlife**

#### **DECISIONS:**

The decisions listed as Common To All Subunits in section 2.6.2.13, would apply under Alternative E. Additional wildlife related decisions for Alternative E are found in section 2.9.2.4.3 Special Designations.

### **2.9.2.4.2. Resource Uses**

#### **2.9.2.4.2.1. Forest and Woodland Products**

#### **DECISIONS:**

In addition to the decisions listed in section 2.6.3.1, the following decisions would apply under Alternative E:

Personal use of timber, commercial use of forest products, and commercial timber salvage sales would be considered on all lands.

Commercial timber sales (large and small) would be considered on all lands except the Salmon Fork ACEC (623,000 acres).

#### **2.9.2.4.2.2. Land Tenure**

DECISIONS:

Same as Alternative B.

#### **2.9.2.4.2.3. Land Use Authorizations**

DECISIONS:

In addition to those decisions listed as Common To All Subunits in section 2.6.3.3, the following decision would apply under Alternative E:

No right-of-way avoidance areas would be designated.

#### **2.9.2.4.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals.

##### **2.9.2.4.2.4.1. Fluid Leasable Minerals**

DECISIONS:

In addition to those decisions listed as Common To All Subunits in section 2.6.3.5.1, the following decisions would apply under Alternative E.

The Salmon Fork ACEC, Black River watershed, and riparian conservation areas (1,813,000 acres) would be closed to fluid leasable minerals (Map 43). Fluid leasable minerals are defined by the Mineral Leasing Act and include oil, gas, coalbed natural gas, and geothermal resources.

The remainder of the subunit, 547,000 acres, would be open to fluid mineral leasing, subject to the Standard Lease Terms, Fluid Mineral Leasing Stipulations, and Standard Operating Procedures.

##### **2.9.2.4.2.4.2. Solid Leasable Minerals**

DECISIONS:

In addition to those decision listed as Common To All Subunits in section 2.6.3.5.2, the following decision would apply under Alternative E. Solid leasable minerals are defined by the Mineral Leasing Act and include coal, oil shale, native asphalt, phosphate, sodium, potash, potassium, and sulfur.

The Salmon Fork ACEC, Black River watershed, and riparian conservation areas (1,813,000 acres) would be closed to solid leasable minerals, including coal (Map 43).

The remainder of the subunit, 547,000 acres would be open to solid leasable minerals subject to standard leasing stipulations and standard operating procedures.

As stated in section 2.6.3.5.2 Common to All Alternatives, coal leasing is deferred because the coal screening process (as identified by 43 CFR 3420.1-4) has not been completed in the planning area. A RMP amendment would be needed before coal leasing could occur. Only those BLM-managed public lands that have development potential may be identified as acceptable for further consideration for coal leasing.

#### **2.9.2.4.2.4.3. Locatable Minerals**

##### DECISIONS:

In addition to those decisions listed as Common To All Subunits in section 2.6.3.5.3, the following decision would apply under Alternative E. Locatable minerals are minerals for which the right to explore, develop, and extract mineral resources is established by the staking of mining claims, under the General Mining Law of 1872. Examples of locatable minerals include gold, silver copper, zinc, certain limestones, and gypsum.

The Salmon Fork ACEC, Black River watershed, and riparian conservation areas (1,813,000 acres) would be closed to locatable mineral entry (Map 43).

The remaining lands in the subunit (547,000 acres) would be recommended open to locatable mineral entry.

#### **2.9.2.4.2.4.4. Salable Minerals**

##### DECISIONS:

In addition to those decision listed as Common To All Subunits in section 2.6.3.5.4, the following decision would apply under Alternative E. Salable minerals, also called mineral materials, include sand, gravel, dirt, and rock.

All BLM-managed lands within the Upper Black River Subunit would be open to salable mineral disposal.

#### **2.9.2.4.2.5. Travel Management**

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative E in the Upper Black River Subunit. Note these decisions are the same as Alternative C.

##### DECISIONS

##### Off-Highway Vehicle Area Designation – LIMITED

A travel management plan has been defined for the Upper Black River Subunit. Once the signed ROD for the RMP is released, the BLM will develop a supplemental rule to implement the with the travel management prescriptions listed below.

### Travel Management Prescriptions:

All forms of non-motorized use would be allowed.

Cross-country winter use (October 15 through April 30) of snowmobiles 50 inches or less in width, and weighing 1,000 pounds curb weight and less would be allowed throughout the entire subunit.

Cross-country summer use (May 1 through October 14) of vehicles up to 64 inches or less in width and weighing 1,500 pounds curb weight and less would be allowed throughout the entire subunit.

Aircraft use would be unrestricted, with the following provisions: Minimal clearing of rocks, downed logs, and brush would be allowed; construction or formal improvement of landing areas would occur by permit only; and, use of gravel bars and winter snow areas would be allowed, subject to reasonable provisions to protect resource values.

Use of motorized boats would be unrestricted.

A permit or approved Plan of Operations would be required for all other vehicle use.

New restrictions could be developed for the purposes of site protection, visitor safety, and/or maintaining an unconfined and primitive type of recreation consistent with the existing wilderness characteristics.

**RATIONALE:** Although current OHV use is low in this subunit, limiting the use of OHVs by weight would reduce potential for impacts to soil, water, vegetation, fish, and wildlife throughout the subunit in the event that OHV use increased over the life of the plan.

#### **2.9.2.4.2.6. Withdrawals**

##### **DECISIONS:**

Recommend to the Secretary of the Interior that PLO 5173 (ANCSA 17(d)(1) withdrawal) be partially revoked to open 547,000 acres to locatable mineral entry and mineral leasing laws in the areas shown on Map 93.

Recommend to the Secretary of the Interior that portions of public land order 5173 (ANCSA 17(d)(1) withdrawal) be retained until a new withdrawal from mineral entry and location under the authority of FLPMA is approved on 1,813,000 acres in the following areas:

- The Salmon Fork ACEC (623,000 acres) (Map 69).
- Riparian conservation areas (491,000 acres) (Map 11).
- Black River watershed (699,000 acres) (Map 43)

**RATIONALE:** The proposed withdrawals are a minor variation on alternative B and are within the spectrum of alternatives analyzed in the Draft EIS. Retaining these ANCSA withdrawals would respond to concerns raised during government-to-government consultation, protect relevant and important values of the ACEC, and conserve anadromous fish habitat until a new withdrawal can be approved under the authority of FLPMA.

### **2.9.2.4.3. Special Designations**

#### **2.9.2.4.3.1. Areas of Critical Environmental Concern**

##### **GOALS:**

Maintain the values of the Salmon Fork ACEC as fish habitat, bald eagle nesting habitat, and habitat for rare flora.

Maintain habitat effectiveness – the ability of the habitats to support nesting bald eagles and rare flora – in the Salmon Fork ACEC.

Maintain stream channel integrity, ensure riparian proper functioning condition, and achieve desired future conditions for fish and aquatic habitat in the Salmon Fork ACEC.

##### **DECISIONS:**

Under Alternative E, designate approximately 623,000 acres within the Salmon Fork watershed as the Salmon Fork ACEC (Map 69) to protect relevant and important values including bald eagle nesting habitat, priority fish habitat, and rare flora.

Manage limestone habitats and steep south facing slopes and bluffs to minimize impacts on rare flora.

Maintain water quality to support nesting bald eagles and salmon habitat.

Coordination and notification with the Government of Canada is required prior to development affecting caribou habitat.

Provisions should be made in management to allow the caribou herd to continue to utilize the winter habitats in the area.

Avoid or minimize the size, extent, duration, and level of activities in concentrated seasonal use areas. Additional limitations on OHV use (such as seasonal restrictions) may be instituted to reduce impacts to natural resources.

Close the ACEC to locatable mineral entry and mineral leasing.

Implement a limited OHV designation.

**RATIONALE:** The rationale for designating the ACEC is the same as in Alternative B.

#### **2.9.2.4.3.2. Wild and Scenic Rivers**

##### **DECISIONS:**

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

Under Alternative E, no rivers would be recommended suitable for designation under the Wild and Scenic Rivers Act.

**RATIONALE:** In 2003, the BLM issued a recordable disclaimer of interest to the State of Alaska for the bed of the Salmon Fork Black River from its confluence with the Black River upstream

74 river miles to the International Boundary. Proposed management of the Salmon Fork basin (ACEC and riparian conservation area, closed to mining and mineral leasing) would protect the outstandingly remarkable values without designation. For these reasons, and due to the lack of support for the designation of new rivers by the State and Alaska congressional delegation, the Salmon Fork has been determined to be not suitable under Alternative E.

### **2.9.3. Comparison of Alternatives: Upper Black River Subunit**

Table 2.18, “Upper Black River Subunit: Summary of Alternatives” provides a **comparison of major allocation decisions or decisions that vary by alternative for Alternatives B, C, D, and E**. There are additional decisions that are common to all action alternatives that are not displayed in these tables. Decisions may be paraphrased to save space. For the full text of all decisions, see section 2.6 Management Common to All Subunits and All Action Alternatives, section 2.9 Upper Black River Subunit, and Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*. All acres are approximate and rounded to the nearest 1,000 acres.

**Table 2.18. Upper Black River Subunit: Summary of Alternatives**

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)	
<b>Fish and Aquatic Species</b>	No land use plan. No Riparian Conservation Areas (RCAs) identified.	Manage 28 watersheds as RCAs (Map 11).	Manage 13 watersheds as RCAs (Map 12).	Manage 5 watersheds as RCAs (Map 13).	Same as Alternative B (Map 11).	
	No land use plan. Watershed assessments not addressed.	Complete watershed assessments according to set priorities.	Complete watershed assessments as necessary for management.			
<b>Visual Resources</b>	No land use plan. No VRM classes assigned.	Assign all BLM-managed lands to VRM Classes. Manage according to the VRM class objectives described in section 2.6.2.9.				
		2,360,000 acres VRM Class II (entire subunit).	623,000 acres VRM Class II (Salmon Fork ACEC).	0 acres VRM Class II.	1,114,000 acres VRM Class II	
		0 acres VRM Class III.				
		0 acres VRM Class IV.	Manage 1,737,000 acres as VRM Class IV.	2,360,000 acres VRM Class IV (entire subunit).	1,246,000 acres VRM class IV	
<b>Wetlands and Floodplains</b>	Watershed management planning not addressed.	Within five years of signing the ROD, or by management direction, undertake development of a watershed management plan for the Black River watershed.				
<b>Wilderness Characteristics</b>	<b>Areas managed to protect wilderness characteristics as a priority over other resource values and multiple uses</b>					
	No land use plan. Wilderness characteristics not addressed	None	None	None	None	
	<b>Acres and Areas managed to emphasize other resource values and multiple uses while applying management restrictions to reduce impacts to wilderness characteristics</b>					
	No land use plan. Wilderness characteristics not addressed	Maintain wilderness characteristics on 2,360,000 acres (100%)	Maintain wilderness characteristics on 623,000 acres (26%).	Wilderness characteristics would not be explicitly maintained.		1,114,000 acres (47%)
		Upper Black River Subunit (Map 78)	Salmon Fork ACEC (Map 79)	None (Map 80)		Salmon Fork ACEC and riparian conservation areas (Map 81)
	<b>Acres managed to emphasize other resource values and multiple uses as a priority over protecting wilderness characteristics</b>					
No land use plan. Wilderness characteristics not addressed	None	1,737,000 acres (74%)	2,360,000 acres (100%)	1,246,000 acres (53%)		

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Wildlife</b>	No land use plan. No limits on types of pack animals for either casual or permitted use.	Domestic sheep, goats, and camelids (including alpaca & llama) are not allowed in Dall sheep habitat for either casual or permitted use.	No restrictions on casual use of domestic sheep, goats, and camelids (including alpaca & llama).		
		The use of domestic goats, alpacas, llamas, and other similar species would not be allowed in conjunction with BLM-authorized activities in Dall sheep habitat.			
<b>Forest and Woodland Products</b>	No land use plan. BLM considers these types of uses may be allowed on all lands (2,360,000 acres) on a case-by-case basis.	Allow personal use of forest products on all lands. Consider personal use of timber and commercial use of forest products on all lands (2,360,000 acres).			
		Commercial timber salvage sales: not allowed on all lands (2,360,000 acres).	Commercial timber salvage sales: considered on all lands (2,360,000 acres).		
		Commercial timber sales: not allowed on all lands (2,360,000 acres).	Commercial timber sales: considered on 1,739,000 acres; not allowed within the Salmon Fork ACEC (621,000 acres).	Commercial timber sales: considered on all lands (2,360,000 acres)	Same as Alternative C.
<b>Land Tenure</b>	Land tenure is not addressed.	Retain most lands in the Upper Black River Subunit in federal ownership (Maps 99 and 100). Consider acquisition or disposal, including exchange, of scattered parcels around Circle for the purposes of consolidation.			
<b>Land Use Authorizations</b>	No land use plan. No ROW avoidance areas.	The Salmon Fork ACEC would be a ROW avoidance area (Map 69).	There would be no ROW avoidance areas.		
	No land use plan. Land use actions considered case-by-case.	Land use actions considered on a case-by-case basis.			
<b>Fluid Leasable Minerals</b> (e.g., oil and gas)	Closed to mineral leasing by public land order (PLO) 5173.	2,360,000 acres (entire subunit) closed to fluid mineral leasing.	104,000 acres open with minor constraints; 1,635,000 acres open with standard stipulations; 621,000 acres (Salmon Fork ACEC) closed.	2,360,000 acres open with standard stipulations (entire subunit); 0 acres closed.	547,000 acres open with standard stipulations; 1,813,000 acres closed.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Solid Leasable Minerals</b>	Closed to mineral leasing by PLO 5173.	2,360,000 acres (entire subunit) closed to solid mineral leasing.	1,739,000 acres open; 621,000 acres (Salmon Fork ACEC) closed.	2,360,000 acres open (entire subunit); 0 acres closed.	547,000 acres open; 1,813,000 acres closed.
		Coal leasing is deferred because the coal screening process (43 CFR 3420.1-4) has not been completed. A RMP amendment would be needed before coal leasing could occur. Only those BLM-managed public lands that have development potential may be identified as acceptable for further consideration for coal leasing.			
<b>Locatable Minerals</b> (e.g., gold)	Withdrawn from mineral entry by PLO 5173.	2,360,000 acres (entire subunit) closed to locatable minerals. <sup>a</sup>	2,360,000 acres open (entire subunit); 0 acres closed. <sup>a</sup>		547,000 acres open; 1,813,000 acres closed. <sup>a</sup>
<b>Salable Minerals</b> (e.g., gravel)	No land use plan. Allowed on 2,360,000 acres consistent with regulations.	1,739,000 acres open to salable minerals; 621,000 acres closed.	2,360,000 acres open (entire subunit); 0 acres closed.		
<b>Recreation</b>	No land use plan. No designated recreation management areas.	Manage 2,360,000 acres as an other BLM lands. Recreation management areas would not be designated.			
<b>Travel Management</b>	OHV area designation: None	OHV area designation: Limited			
	No land use plan. No OHV designations. No set limits on OHV use.	621,000 acres (Salmon Fork ACEC) limited by season of use (no summer OHV use).	0 acres limited by season of use.		
		1,739,000 acres limited by width and weight (summer)	2,360,000 acres limited by width and weight (summer).		
		2,360,000 acres limited by weight (winter).			
No restrictions on the use of motorized boats.					

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Withdrawals</b>	No land use plan. All lands withdrawn by PLO 5173.	Recommend retention of public land order 5173 until a new withdrawal from mineral entry and location under the authority of FLPMA is approved.	Recommend partial revocation of public land order 5173 to open the entire subunit to locatable mineral entry and location.		Recommend partial revocation of public land order 5173 to open 547,000 acres to locatable mineral entry and location. Within the Salmon Fork ACEC, Black River watershed, and riparian conservation areas (1,813,000 acres) recommend retaining public land order 5173 until a new withdrawal from mineral entry and location under the authority of FLPMA is approved.
<b>Areas of Critical Environmental Concern</b>	No designated ACECs or research natural areas.	Designate 621,000 acres as the Salmon Fork ACEC.			Designate 623,000 acres as the Salmon Fork ACEC. (Map 69)
<b>Wild and Scenic Rivers</b>	No designated wild and scenic rivers. Rivers in area have never been studied for eligibility or suitability.	Salmon Fork (52 miles) recommended suitable for classification as "wild." (Map 78)	No rivers recommended suitable.		

<sup>a</sup>RMP recommends open or closed. To implement this recommendation requires action by the Secretary of the Interior

## **2.10. White Mountains Subunit**

### **2.10.1. Alternative A: No Action Alternative**

Current management in the White Mountains NRA under Alternative A (No Action Alternative) is guided by the Record of Decision and Resource Management Plan for the White Mountains National Recreation Area (BLM 1986b) which was approved in February 1986. Throughout this section, this plan will be referred to as the White Mountains RMP (BLM 1986b). Additional management guidance is provided by the Beaver Creek River Management Plan (BLM 1983b), and several special rules published in the *Federal Register*. Other BLM-managed lands in the White Mountains Subunit are not covered by any existing land use plan. Current management described in the following sections.

#### **2.10.1.1. Resources**

##### **2.10.1.1.1. Cave and Karst**

There are three significant caves within the subunit: Bison Bone Cave (AK-029-001), Cave AK-029-002, and Cave AK-029-003 (Map 48). These are all within the Limestone Jags RNA, which is managed under a Primitive RSC classification, and is closed to motorized vehicle use, mineral entry, and leasing.

##### **2.10.1.1.2. Cultural and Paleontological Resources**

Appropriate literature reviews and applicable site-specific inventories are generally conducted prior to any development action in order to identify, protect, or mitigate potentially adverse impacts to significant cultural and paleontological resources. Specifically for cultural resources, historic structures would be evaluated for recreational use. Use the level of fire suppression necessary to protect life, property, and historical cabins. Prior to any prescribed burn, the area will be thoroughly investigated to identify any inhabited or historic cabins, other structures, or critical protection sites, and appropriate measures will be taken to protect them from fire as mandated by federal law. Historic and archaeological values within the Beaver Creek WSR Corridor have been inventoried. Significant cultural resources are protected and impacts on sites which may adversely be affected by activities within the river corridor are mitigated.

##### **2.10.1.1.3. Fish and Aquatic Species**

Fish habitat is managed to maintain and/or enhance fish populations for the use and enjoyment of the recreational users of the NRA. Primary emphasis is placed on habitat for Arctic grayling. Ongoing projects include rehabilitation of stream and riparian areas in Nome Creek where past placer mining activity has altered the aquatic environment. Approximately 5.5 miles of stream channel and 210 acres of floodplain and riparian habitat have been reclaimed in Nome Creek since the early 1990s.

Measures to mitigate the impacts of development on the fishery resource are attached as stipulations to the authorizing documents. Special stipulations are placed on development activities in crucial habitat areas such as fish spawning and overwintering areas (Table 2.19, "Crucial Wildlife and Fish Habitats in the White Mountains RMP, Alternative A"). Proponents

of all surface-disturbing activities are required to use the best available technology to reduce siltation and stream turbidity to an acceptable level for fish survival and reproduction. All surface-disturbing activities are required to be rehabilitated to minimize future erosion.

Riparian gravel sources are used only where upland sources are not reasonably available and where any damaging impacts can be mitigated to the extent that the water quality and fisheries of the Beaver Creek system will not be significantly impaired.

Beaver Creek fish habitat and riparian areas are maintained to support viable self-sustaining populations of fish and to provide a quality fishing experience. Assessments of the Arctic grayling and salmon populations have been conducted in Nome Creek and Beaver Creek.

#### **2.10.1.1.4. Special Status Species**

A literature review (Williams and Lipkin 1991) and limited inventories (Parker et al. 2003) for special status plants have been conducted. Inventories for sensitive and rare plants are conducted for clearances for proposed surface-disturbing activities, if the presence of sensitive species is suspected. Sites may be protected by modifying proposed actions or by denying those actions which cannot be modified. If actions cannot be modified or denied, plant material salvage will be attempted.

#### **2.10.1.1.5. Visual Resource Management**

Scenic quality is maintained using the Visual Resources Management (VRM) objectives assigned in the White Mountains RMP (BLM 1986b). VRM designations under Alternative A are shown on Map 19.

Beaver Creek WSR will be managed as VRM Class I while the view shed is managed as VRM Class II. The management objective of Class I is to preserve the existing characteristics of the landscape, but allows for limited management activities where changes should be very low and must not attract attention of the casual observer. Management of Class II areas allows for the development of facilities. These developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with minor changes to landform and vegetation.

The Primitive Management Unit will be managed as VRM Class II. The Semi-Primitive Management Unit adjacent to the Summit and Wickersham trails is managed as VRM Class II.

The remainder of the Semi-Primitive Management Unit will be managed as a VRM Class III. The White Mountains RMP (BLM 1986b) did not assign a VRM class to the Research Natural Areas. All projects in these areas will be reviewed for impacts to scenic quality and visual resources.

All BLM-managed lands not within the White Mountains NRA or Beaver Creek WSR Corridor would require an inventory determination and management class identification for all surface-disturbing activities.

#### **2.10.1.1.6. Water**

The BLM cooperates with the ADEC and the U.S. Environmental Protection Agency for the purpose of establishing water quality standards and for preventing, eliminating, or diminishing the

pollution of state waters and in the enforcement of state and federal water pollution laws. Water quality in Beaver Creek is managed to preserve a clear flowing and undisturbed stream, associated recreational experiences, and to meet the State's water quality standard. Water quality in Beaver Creek is measured periodically to ensure ADEC water quality standards are met. BLM quantified stream flow in Beaver Creek over a five year period. An instream flow water right was approved for Beaver Creek WSR in May of 1989 by the Alaska Department of Natural Resources.

Watersheds may be closed to OHV use when, due to erosion and sedimentation or poor trail conditions, more than 5 percent of the miles of trail become difficult to negotiate with a small three-wheeler or other like-sized OHV; or when water pollution from OHV trails or disturbances become noticeable in Beaver Creek or its major tributaries.

### 2.10.1.1.7. Wildland Fire Ecology and Management

Guidance for wildfire fire management is provided by the BLM Alaska Land Use Plan Amendment for Wildland Fire and Fuels Management (BLM 2004b, 2005c). The decisions are described under section 2.6.2.12 Wildland Fire Ecology and Management, Management Common to All Subunits and Action Alternatives.

### 2.10.1.1.8. Wildlife

The primary emphasis of the wildlife habitat management program is habitat protection, maintenance and improvement. Priority species are caribou, Dall sheep, fish, and peregrine falcon. The wildlife habitat management is implemented in cooperation with ADF&G and USFWS. Ground and aerial surveys are used to identify and monitor wildlife distribution, movements, and use areas. Information gained is used to assess the effects of various land use activities, to determine habitat condition and trends, and to formulate measures to mitigate possible adverse effects on wildlife from land uses such as mining, roads, and trails.

Wildlife management emphasizes the protection of crucial habitats (Table 2.19, "Crucial Wildlife and Fish Habitats in the White Mountains RMP, Alternative A"). Crucial habitats are wildlife use areas which are necessary for perpetuation of the species or population and which provide an essential element of the life cycle for that species or population. Crucial habitats are protected by the avoidance or mitigation of possible adverse effects of land use activities and by withdrawing specific areas from certain land use activities.

**Table 2.19. Crucial Wildlife and Fish Habitats in the White Mountains RMP, Alternative A**

Species/group	Crucial Use Area
Caribou	Caribou Calving (present and historical), movement routes (present and historical)
Dall Sheep	Mineral licks, movement routes, lambing, associated escape terrain, winter range
Moose	Moose late winter range, mineral licks
Grizzly Bear/Black Bear	Denning (winter), seasonal high use/high prey density
Peregrine Falcon/Other Raptor	Nesting, prey gathering
Furbearer	Denning (reproduction), seasonal high use/high prey density
Waterfowl	Nesting, overwintering (potential)
Small Game	Winter concentrations
Land/Shore Birds and Mammals	Concentrations which are crucial for predator/prey gathering
Fish	Spawning areas, overwintering areas

When land use actions are proposed, mitigating measures to avoid or minimize possible adverse effects are developed through the environmental assessment process. This sometimes results, in restriction or alteration of timing, location, and extent of a proposed land use activity in order to avoid or minimize adverse effects. Table 2.20, “Possible Surface Use and Occupancy Restrictions in Crucial Habitats, White Mountains NRA, Alternative A” lists crucial habitats and time frames during which special restrictions may be required. These restrictions prohibit surface movement within one mile of the area or the use of aircraft under an altitude of 1,500 feet.

Habitat improvement for moose and other species is provided for by management of wildfire. Prescribed burns may be used to reestablish or improve habitat for moose and other species. All of the NRA has been placed in Limited Wildfire Management Option, allowing for considerable wildfire. Roughly 25 percent of the area burned in 2004 and 2005.

**Table 2.20. Possible Surface Use and Occupancy Restrictions in Crucial Habitats, White Mountains NRA, Alternative A**

Species	Crucial Use Area	Dates
Caribou	calving, migration routes	May 1 - June 15
Dall Sheep	lambing, movements	May 1-31
Dall Sheep	mineral licks	May 15 - July 15
Dall Sheep	winter range	October 1 - May 1
Grizzly Bear/Black Bear	denning	November 1 - April 31
Peregrine Falcon/Other Raptor	nesting, prey gathering	April 15 - August 31
Furbearer	denning	May 1 - June 15
Fish	spawning	May 1 - September 1
Fish	overwintering	December 1 - April 15

## 2.10.1.2. Resource Uses

### 2.10.1.2.1. Forest and Woodland Products

Forest products are reserved for local use only. No commercial timber harvest is be allowed. Personal use of timber is allowed throughout the subunit. Permits are monitored to ensure that the permit stipulations have been followed. Permit stipulations may include winter cutting and movement, maintaining a set distance from waterways, and lopping and scattering slash.

### 2.10.1.2.2. Lands and Realty

There are two established transportation corridors in the White Mountains NRA (Map 19). One crosses upper Nome Creek from the U.S. Creek Road and extends to the vicinity of Champion Creek. The other begins at the NRA boundary near the Steese Highway and extends to lower Nome Creek. Development within this second corridor will require a right-of-way from the State of Alaska, since the first five miles are located on State lands. Both corridors generally follow existing roads or trails. The upper Nome Creek Corridor provides recreational access to the ridge complex leading to the Mount Prindle area and the highland country.

To prevent a proliferation of rights-of-way, all future rights-of-way will, to the extent possible, be located within these corridors. If it becomes necessary for a right-of-way to extend beyond a corridor, existing trails will be followed whenever possible. Several users may be required to use the same right-of-way and to jointly maintain it. Holders of rights-of-way for roads or trails would be required to allow public access for recreation unless there is a compelling reason to deny

such access. Before any construction takes place, engineering studies for route selections within the transportation corridors will be conducted to identify pipeline, road and trail locations, river crossings, and geologic hazards. Rights-of-way will be allowed within the Primitive Management Unit only if there is no economically feasible and prudent alternative.

Other realty actions compatible with the land uses may be allowed if compatible with land uses designated in the White Mountains RMP (BLM 1986a).

No lands within the White Mountains NRA will be exchanged or otherwise disposed of. Lands outside the NRA in the Wickersham Dome area have been retained in federal land status for recreational purposes under PLO 5150, which establishes a corridor for the Trans-Alaska Pipeline System. If PLO 5150 is revoked, another PLO will be issued to ensure that Wickersham Dome remains in federal land status and is reserved for recreational purposes. The following recreation withdrawals along the Steese Highway have been retained for recreational purposes: the Cripple Creek campground at 60 mile, the U.S. Creek at 56 mile; and the Perhaps Creek at 53 mile.

### **2.10.1.2.3. Minerals**

All BLM-managed lands in the White Mountains Subunit are currently withdrawn from mineral location and leasing by variety of PLOs issued under ANCSA 17(d)(1). In addition, the Beaver Creek WSR Corridor (within one-half mile of the banks) is withdrawn from mineral entry and leasing under ANILCA and administered pursuant to the Wild and Scenic Rivers Act (16 U.S.C. 1271-1287). The White Mountains NRA is withdrawn from locatable mineral entry under Section 1312 of ANILCA.

No lands within the White Mountains Subunit are open to leasing of either fluid minerals (oil and gas) or solid minerals (coal). There are no existing mineral leases.

There are no valid mining claims remaining in the White Mountains NRA. Mining is occurring on valid existing mining claims outside the NRA, primarily near Livengood.

Disposal of sand, gravel, rock, and other salable minerals is considered; such disposals must be compatible with the White Mountains RMP (BLM 1986b) if they are within the White Mountains NRA.

### **2.10.1.2.4. Recreation**

In the White Mountains Subunit, the Eastern Interior Field Office follows BLM program direction for managing recreation on public lands. Recreation management is focused on the White Mountains NRA and Beaver Creek WSR.

The BLM provides public outreach in a variety of ways including: the establishment and maintenance of information kiosks; maintenance of a website; and through the use of volunteers to provide visitor contact assistance.

Special recreation use permits are issued as appropriate for commercial, competitive, and special events.

A remote cabin program has been developed and maintained, including twelve public use cabins and two trail shelters. There are over 220 miles of trails connecting the public use cabins to the highways. Recreational sites have been developed and maintained, including several waysides

and trailheads, campgrounds, Beaver Creek access, and Nome Creek Road. Periodic accessibility, safety, and condition assessments are conducted at developed recreation sites and available funds are prioritized to resolve maintenance needs.

Important recreational resource values that make the White Mountains NRA unique are enhanced and protected including: the outstanding scenic quality of the view shed, the natural state of the river corridor, the water quality of the river system, the fishing and hunting opportunities, wildlife viewing, hiking opportunities, and unique landforms/geologic formations. Four Management Units are established in the White Mountains NRA: Beaver Creek WSR Corridor, the Primitive Management Unit, the Semi-Primitive Motorized Management Unit, and the Research Natural Areas (Map 48).

Preservation of the Beaver Creek WSR and adjacent view shed is essential to meeting recreational goals and objectives. Beaver creek is one of the main attractions of the White Mountains NRA and development within the view shed of the river has been minimized.

The Primitive Management Unit is managed to protect the wild and natural character of the area. Within this unit, about 60 miles of primarily winter trail has been established and five cabins have been constructed. A hiking route was cleared in the Fossil Creek area, and is minimally maintained.

Within the Semi-Primitive Motorized Management unit, recreational values which are protected include OHV access for hunting, recreational access to Primitive areas and river put-in, wildlife viewing, hiking opportunities, and recreational mining on Nome Creek. Three motorized access hunting trails have been identified and sustainable trail construction techniques implemented. Development in Nome Creek valley provides easily accessible recreation opportunities.

#### **2.10.1.2.5. Travel Management**

The current OHV designation for the White Mountains NRA is Limited except for Research Natural Areas, which are Closed to OHV use. All forms of non-motorized use are allowed. Some trails are managed as non-motorized. Camping and/or campfires are prohibited within 25 feet of trails. Aircraft use is unrestricted, except possibly in crucial wildlife habitats. No restrictions for crucial habitats have been identified to date.

Four Management Units are established in the White Mountains NRA: Beaver Creek WSR Corridor, the Primitive Management Unit, the Semi-Primitive Motorized Management Unit, and the Research Natural Areas (Map 19). The type and extent of OHV uses allowed depends on the designation of the unit in which the use occurs.

The use of hovercraft and airboats is prohibited in the White Mountains NRA (FR 1988a).

Beaver Creek WSR Corridor: The White Mountains RMP (BLM 1986a) amended the Beaver Creek River Management Plan related to OHV use within the river corridor. OHV use is prohibited within the corridor except:

1. During the winter months, when snowmobiles weighing 1,500 pounds, GVWR and less are allowed, subject to closures for Windy Creek and Fossil Creek noted under the Primitive Unit;
2. For OHVs used to access inholdings, which can be authorized under a mining plan of operation, a right-of-way, permit, or by other appropriate means.
3. If there are no economically feasible and prudent alternatives for crossing the corridor.

Launching of boats in the Nome Creek Valley is restricted to 15hp or less (FR 1997). Using hovercraft and airboats are not considered compatible and will not be authorized (FR 1997).

Primitive: This unit (494,000 acres) is closed to OHVs with the exception of winter snowmobile use. Authorization is required for the use of any motorized vehicle, other than a snowmobile, off a valid right-of-way. The use of snowmobiles 1,500 pounds GVWR and less is allowed without authorization. All OHV use is prohibited in the Windy Creek and Fossil Creek drainages from April 15 to August 31 in order to avoid disturbance to known peregrine falcon nesting areas (FR 1998).

Semi-Primitive Motorized: In this unit (428,000 acres), no permit is required for vehicles of less than 1,500 pounds GVWR except on the Summit, Ski Loop, and Table Top Mountain trails, which are closed to motorized use year round, and within the Wickersham Creek Closed Area, which is closed to all motorized use May 1 through October 14. A permit is required for the use of OHVs greater than 1,500 pounds GVWR off a valid right-of-way. Written authorization is not required for the use of OHVs greater than 1,500 pounds GVWR on the U.S. Creek Road and the mine tailings along Nome Creek (FR 1998).

Research Natural Areas (RNAs): The Limestone Jags, Serpentine Slide, and Mount Prindle RNAs are closed to OHV use.

All Management Units with a Limited OHV designation: The use of vehicles of greater than 1,500 pounds GVWR off a valid ROW is allowed by permit only. Such authorization is generally given only when necessary to provide access to inholdings or for other purposes, based on analysis of need and compatibility with the White Mountains RMP (BLM 1986b). Approval is subject to conditions designed to minimize the impact to the environment or other land uses.

The use of vehicles of greater than 1,500 pounds GVWR off a valid existing right-of-way is limited to winter months with adequate snow cover and is limited to existing trails, where practical. Under certain circumstances, the AO may authorize summer moves. These include, but are not limited to, the following:

1. A winter move would be impractical;
2. A move which would not interfere with crucial wildlife habitat.

An OHV monitoring program is used to document existing trails, trail conditions, and newly disturbed areas of cross-country use, and to provide a basis for determining rehabilitation needs, monitoring recovery, and establishing a threshold as to when impacts are becoming excessive. Areas open to OHV use may be closed or restricted under any of the following four conditions:

1. when, due to erosion and sedimentation or poor trail conditions, more than 5 percent of the miles of trail become difficult to negotiate with a small three-wheeler or other like-sized OHV;
2. when water pollution from OHV trails or disturbances become noticeable in Beaver Creek or its major tributaries;
3. if there is extensive cross-country damage or rutting on trails as a result of the use of light off-road vehicles, the area may be closed during break-up;
4. or to protect recreation, wildlife, watershed and/or scenic values.

Permanent use restrictions on OHVs require an order signed by the AO and publication in the *Federal Register*. However, Where the AO determines that OHVs are causing, or will cause, considerable adverse effects on resource values or other authorized uses, he/she shall immediately close the area or route/trail/road affected to the type of vehicle causing the adverse effect until that

effect is eliminated and measures have been implemented to prevent a recurrence, in accordance with 43 CFR 8341.2.

### **2.10.1.2.6. Withdrawals**

The subunit is closed to locatable mineral entry and mineral leasing by ANCSA 17(d)(1) withdrawal. The primary PLOs affecting this subunit are PLO 5179, 5180, and 5184. There are approximately 4,000 acres of valid existing claims outside the White Mountains NRA that predate the PLOs. Mining is occurring on some of these claims. Existing withdrawals are described in section 3.3.8 Withdrawals.

The White Mountains NRA is closed to locatable mineral entry by Section 1312(b) of ANILCA. There are no remaining mining claims within the NRA. The Beaver Creek WSR Corridor (within one-half mile of the banks) is closed to mineral entry and leasing by ANILCA pursuant to the Wild and Scenic Rivers Act (16 U.S.C. 1271-1287).

Three recreation sites are withdrawn under PLO 4176, (505 acres). The withdrawn lands are located at Perhaps Creek, U.S. Creek, and Cripple Creek; all of which are within FM, T. 5N., R. 5E. The U.S. Creek and Cripple Creek parcels have been developed for recreational purposes.

### **2.10.1.3. Special Designations**

There are three designated research natural areas (RNA): Limestone Jags (5,170 acres), Serpentine Slide (4,270 acres), and Mount Prindle (3,150 acres). There are no designated ACECs. No surface-disturbing activities are allowed within the RNAs except BLM-authorized research projects. The areas are closed to OHVs and camping to avoid disturbing research projects. Natural processes, including wildfire, continue with as little interference as possible. Primitive campsites may be established outside the RNA boundaries and improved access in the form of trails could be developed. Hiking, hunting, and natural appreciation are allowed. The RNAs are closed to mineral location and leasing.

Beaver Creek was designated as a WSR under ANILCA. The River Management Plan for Beaver Creek (BLM 1983b) provides a detailed description of the boundaries of the river corridor, major issues and concerns for management of the corridor, and management actions. The river corridor is managed to preserve the river and its immediate environment in its natural, primitive condition, in accordance with the Wild and Scenic Rivers Act (P.L. 90-542). The designated corridor is managed as a VRM Class I area. OHV use is prohibited within the corridor, except as described under section 2.10.1.2.5 Travel Management. The corridor is closed to mineral location and leasing.

One eligible river segments in the White Mountains subunit has been identified in the Wild and Scenic Rivers Classification Findings for Eligible Rivers (Table E.3). Fossil Creek is found to have characteristics eligible for a tentative classification of Scenic. This tentative classifications would be maintained through mitigation standards through NEPA review until suitability can be evaluated.

### **2.10.1.4. Subsistence**

Any action to withdraw, reserve, lease, or otherwise permit the occupancy or disposition of public lands within the White Mountains NRA, where BLM has the discretion to substantially affect

the result, are evaluated to determine the effect on subsistence use in accordance with Section 810 of ANILCA and current BLM policy. The proposed action may be modified to reduce or eliminate effects on subsistence.

## **2.10.2. Action Alternatives White Mountains Subunit**

### **2.10.2.1. Alternative B: White Mountains Subunit**

#### **2.10.2.1.1. Resources**

##### **2.10.2.1.1.1. Cave and Karst Resources**

GOAL: Manage significant cave and karst systems to protect and maintain their resource, educational, scientific, and recreational values.

##### DECISIONS:

Manage Bison Bone Cave (AK-029-001), Cave #AK-029-002, and Cave #AK-029-003 as significant caves.

Management objective: Manage significant caves in the White Mountains NRA to preserve their scientific integrity.

Setting Prescription: Primitive

Administrative designation: All three caves are located in the Limestone Jags Research Natural Area. No additional designation is recommended.

##### **2.10.2.1.1.2. Cultural Resources**

##### DECISIONS:

In addition to the decisions listed under section 2.6.2.2 Cultural Resources, Management Common to All Subunits and Action Alternatives, the following decisions would apply.

The following sites are designated as suitable for public use: Two-Step Louis Cabin (LIV-390); Nome Creek Dredge (CIR-069); U.S. Creek Siphon (CIR-156); and Cripple Creek Campground Cabin (CIR-093).

All remaining cultural sites not otherwise designated are designated for scientific use.

##### **2.10.2.1.1.3. Fish and Aquatic Species**

##### DECISION:

In addition to the decisions listed as Common To All Subunits in section 2.6.2.3, the following decisions would apply under Alternative B:

The following watersheds would be managed as Riparian Conservation Areas (Map 8).

1. Bear Creek (HUC # 190404021803)

2. Beaver Creek (HUC # 190404022104)
3. Beaver Creek (HUC # 190404022109)
4. Beaver Creek (HUC # 190404022208)
5. Deadwood Creek-Victoria Creek (HUC # 190404022304)
6. Headwaters Victoria Creek (HUC # 190404022301)
7. Montana Creek-South Beaver Creek (HUC # 190404022206)
8. Ophir Creek (HUC # 190404022003)
9. Outlet Victoria Creek (HUC # 190404022305)
10. South Beaver Creek (HUC # 190404022207)
11. South Beaver Creek (HUC # 190404022202)
12. Victoria Mountain-Beaver Creek (HUC # 190404022406)
13. Victoria Creek (HUC # 190404022303)
14. Yellow Creek- Beaver Creek (HUC # 190404022408)

The Sumner Creek-Nome Creek watershed (HUC# 190404022004) would be a High Priority Restoration Watershed and emphasized for active restoration.

Complete watershed assessments Section I.5, “Watershed Assessment Process” as necessary for management.

#### **2.10.2.1.1.4. Visual Resources**

Proposed VRM classes for Alternative B are displayed on Map 20. Recreation Management Zones (RMZ) are displayed on Map 53. Areas where wilderness characteristics would be maintained are displayed on Map 74.

#### **DECISIONS:**

The Beaver Creek WSR/RMZ (RSC Class of Semi-Primitive) would be managed as VRM Class I. The Serpentine Slide, Mount Prindle, and Limestone Jags RNAs, and the White Mountains Spine Area (RSC Class of Primitive) would be managed as a VRM Class I. Management of VRM Class I is to preserve the existing characteristics of the landscape, but allows for limited management activities where changes should be very low and must not attract attention of the casual observer.

The White Mountains Highlands RMZ (RSC Class of Semi-Primitive) and the Cache Mountain RMZ (RSC Class of Backcountry) would be managed as VRM Class II. In Class II areas, developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with minor changes to landform and vegetation.

The White Mountains Foothills RMZ (RSC Class of Middlecountry), and the Nome Creek and Wickersham Dome - Blixt RMZs (RSC Class of Frontcountry) would be managed as VRM Class III. Developments in Class III areas would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with moderate changes to landform and vegetation and may attract the attention of the casual observer.

Areas to be managed for wilderness characteristics associated with Beaver Creek RMZ, Serpentine Slide, Mount Prindle and Limestone Jags RNAs and White Mountains Spine Area would be managed as VRM Class I while those associated with the White Mountains Highlands RMZ would be managed as VRM Class II.

All remaining BLM lands would be managed as VRM Class IV. Management actions would be taken to protect the Beaver Creek WSR view shed and adjacent VRM Classes. Development activities would be designed to harmonize with the visually dominating elements of the surrounding landscape characteristics of line, form, color and texture but major modification of the natural landscape would be allowed.

#### **2.10.2.1.1.5. Wildlife**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.2.13, the following decisions would apply under Alternative B:

Domestic sheep, goats, and camelids (including alpaca & llama) are not allowed in Dall sheep habitat.

In caribou winter range, plan travel management and development of facilities (such as maintained trails and cabins), in a manner that would result in a level of off-trail over-snow vehicular travel that would maintain continued availability of the area for use by wintering caribou. Develop adaptive management standards and strategies. Monitor over-snow motorized use in these areas and, if it approaches a level which may result in reduced use by wintering caribou, implement changes in maintained trails. If necessary, limited area or season closures may be enacted.

#### **2.10.2.1.1.6. Wilderness Characteristics**

##### **OBJECTIVE:**

Allow for multiple use while maintaining naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on 509,000 acres so that these lands retain their wilderness characteristics for the life of the RMP.

##### **DECISION:**

Consistent with allocation decisions in the RMP, allow other multiple-uses on lands where wilderness characteristics would be maintained, while applying management restrictions (such as conditions of use or mitigation measures) to avoid or minimize impacts to wilderness characteristics and meet the objective retaining wilderness characteristics over the life of the RMP.

Wilderness characteristics would be maintained on 509,000 acres (half of the lands with wilderness characteristics in this subunit). These lands occur within the Primitive and Semi-Primitive Recreation Management Zones (Map 74).

**RATIONALE:** Wilderness characteristics would be maintained because of the status of the area as national recreation area and decisions in this alternative to designate an ACEC, close the lands to mineral leasing, manage for Primitive, Semi-Primitive, and Backcountry recreation settings, and set OHV designations. Management for primitive, semi-primitive, and backcountry recreational opportunities would be consistent with maintaining wilderness characteristics. Additionally, BLM-authorized uses would be further analyzed through the NEPA process for impacts to size, naturalness, primitive recreation, and solitude, and stipulated mitigation measures would be applied where needed to minimize impacts.

More than 50 percent of the lands in the White Mountains NRA would likely retain its wilderness characteristics over the life of the plan because of its designation as a national recreation area, ANILCA withdrawal of the entire area from mining, and low probability of major rights-of-way or other large surface disturbing activities.

## **2.10.2.1.2. Resource Uses**

### **2.10.2.1.2.1. Forest and Woodland Products**

DESIRED OUTCOME: Maintain natural forest system.

DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.1, the following decisions would apply under Alternative B:

Free Use Permits for personal use of timber (e.g., house logs, firewood) would not be allowed within the White Mountains Special Recreation Management Area (which includes the Beaver Creek WSR Corridor). Free Use Permits would be allowed on the remaining BLM lands within the subunit, which are minimal.

Timber salvage sales and both large and small commercial sales would not be allowed within the White Mountains Special Recreation Management Area (which includes the Beaver Creek WSR Corridor). Sales would be allowed on the remaining BLM lands within the subunit, which are minimal.

Commercial use of forest products (such as mushrooms, berries, or bark) would not be authorized within the White Mountains Special Recreation Management Area (which includes the Beaver Creek WSR Corridor). Commercial use of forest products would be allowed on the remaining BLM lands within the subunit, which are minimal.

### **2.10.2.1.2.2. Land Tenure**

DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.2, the following decisions would apply under Alternative B. The criteria for land tenure zones is described in Appendix G, *Land Tenure*.

Retain the White Mountains SRMA (includes the National Recreation Area, Beaver Creek WSR Corridor, Wickersham Dome, Cripple Creek campground, and U.S. Creek Wayside.)

Consider acquisition of private land inholdings from willing sellers within Zone 1 areas, such as the White Mountains NRA.

If federal mining claims outside of the White Mountains SRMA become null and void, and are not conveyed to the State, consider these lands for disposal or exchange.

Recommend retention of PLO 4176, Recreation site withdrawal (505 acres). Withdrawn lands are located at Perhaps Creek, U.S. Creek, and Cripple Creek, all of which are within FM, T.5N.,

R.5E. Manage the Perhaps Creek area to provide a gravel source for maintenance or construction of recreation facilities such as roads, trails, and campgrounds.

### **2.10.2.1.2.3. Land Use Authorizations**

#### DECISIONS:

In addition to the decisions listed as Common To All Subunits in section 2.6.3.3, the following decisions would apply under Alternative B:

Retain one transportation corridor extending from U.S. Creek Road to the Nome Creek Road, which provides access to both upper and lower Nome Creek.

Designate Serpentine Slide, Limestone Jags and Mount Prindle RNAs, the White Mountain ACEC, and Beaver Creek WSR Corridor as ROW avoidance areas.

Obtain a right-of-way from the State of Alaska for the portion of Colorado Creek trail from the Elliott Highway to the White Mountains NRA.

### **2.10.2.1.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals. In addition to the decisions listed as Common To All Subunits in section 2.6.3.5, the decisions in the following mineral sections would apply under Alternative B.

#### **2.10.2.1.2.4.1. Fluid Leasable Minerals**

##### DECISIONS:

The subunit, approximately 1,020,000 acres would be closed to fluid leasable minerals (Map 33):

#### **2.10.2.1.2.4.2. Solid Leasable Minerals**

##### DECISIONS:

The areas closed to fluid leasable minerals, approximately 1,020,000 acres, would also be closed to solid leasable minerals (Map 33).

#### **2.10.2.1.2.4.3. Locatable Minerals**

##### DECISIONS:

The entire White Mountains Subunit, approximately 1,020,000 acres, would be closed to locatable mineral entry (Map 32).

#### **2.10.2.1.2.4.4. Salable Minerals**

##### DECISIONS:

Approximately 648,000 acres in the following areas would be closed to salable minerals:

- The RNAs and Primitive RMZ (26,000 acres)
- The Beaver Creek WSR Corridor (69,000 acres)
- The Highlands Semi-Primitive RMZ (413,000 acres)
- The Cache Mountain Backcountry RMZ (140,000 acres)

All remaining lands in the subunit, 372,000 acres, would be open to salable minerals.

### 2.10.2.1.2.5. Recreation

#### DECISIONS:

The White Mountains SRMA would include approximately 1,016,000 acres of lands including Beaver Creek WSR Corridor and the White Mountains NRA and associated lands (Map 53). Under Alternative B, the White Mountains SRMA would include seven Recreation Management Zones (RMZs), the management of which are described in Section H.3, “White Mountains Special Recreation Management Area”.

**Table 2.21. White Mountain Recreation Management Zones, RSC Settings and OHV Designations, Alternative B**

Name	Acres	RSC Setting <sup>a b</sup>	OHV designation
Research Natural Areas	12,600	Primitive	CLOSED
White Mountains Spine Area	13,400	Primitive	LIMITED
White Mountain Highlands RMZ	413,000	Semi-Primitive	LIMITED
Beaver Creek Corridor RMZ	69,000	Semi-Primitive	LIMITED
Cache Mountain RMZ	140,000	Backcountry	LIMITED
White Mountain Foothills RMZ	329,000	Middlecountry	LIMITED
Nome Creek RMZ	31,000	Frontcountry	LIMITED
Wickersham Dome/Blixt Cabin RMZ	8,000	Frontcountry	LIMITED
Other BLM lands	4,000	N/A	LIMITED

<sup>a</sup>Table 2.5

<sup>b</sup>RSC are descriptive conditions describing management parameters at the implementation level. These are not land use planning decisions

### 2.10.2.1.2.6. Travel Management

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative B.

#### DECISIONS:

Under Alternative B, the entire White Mountains Subunit would be delineated as a Travel Management Area, which includes other BLM lands and lands within the White Mountains SRMA. For lands within the SRMA, specific Travel Management Zones (TMZs) have also been delineated and consist of the same polygons used for Recreation Management Zone (RMZ) delineations and subsequent Recreation Opportunity Spectrum (RSC) settings for this alternative. Each TMZ also contains a specific OHV designation of Open, Limited, or Closed (Table 2.21, “White Mountain Recreation Management Zones, RSC Settings and OHV Designations, Alternative B”).

A comprehensive travel management network has been defined for the White Mountains Subunit. This is described fully in Appendix B, *Travel Management Plan: White Mountains*. Decisions

from the travel management plan are summarized below. In all alternatives, snowmobiles are defined as 50 inches or less in width, and 1,000 pounds curb weight or less. ATVs are defined as 50 inches or less in width, and 1,000 pounds curb weight or less. UTVs are defined as 64 inches or less in width, and 1,500 pounds curb weight or less.

### Travel Management Prescriptions Common to All Lands

The BLM may continue to issue temporary emergency closures based on a determination of considerable adverse effects pursuant to 43 CFR 8341.2, special rules. This includes considerable adverse impacts to soil, vegetation, wildlife habitat, or cultural resources. The agency can maintain this closure until the effects are mitigated and measures are implemented to prevent future recurrence.

All forms of non-motorized uses would be allowed, except for use of pack goats in Dall sheep habitat. Cross-country travel by non-motorized means is allowed.

The following trails would be limited to non-motorized uses: Ski Loop Trail, Table Top Trail, Summit Trail, Two-Step Louis Trail, and the Fishing Trail inside Cripple Creek Campground.

Camping and/or campfires would be prohibited within 25 feet of BLM-maintained trails within the White Mountains NRA.

Trapping and placement of bait and wildlife lures (scents) for the purpose of trapping fur bearers would be prohibited within 25 feet of the cleared edge of BLM-maintained trails. Trapping includes but is not limited to the use of marten pole sets, snares, conibear, or leg hold traps. These restrictions do not apply to sections of trail on land managed by the State of Alaska, where BLM maintains access to the White Mountains NRA.

Aircraft use would be unrestricted (except in Primitive zones), with the following provisions: Minimal clearing of rocks, downed logs, and brush would be allowed; construction or formal improvement of landing areas would occur by permit only.

Motorboat use allowed without specific authorization consistent with ANILCA Sections 1110(a) and 811 with the following reasonable regulation.

- Launching boats with motors exceeding 15 horsepower without written authorization from the AO is prohibited in the Nome Creek Valley.
- Airboats, hovercraft, and personal watercraft would be prohibited in the White Mountains Special Recreation Management Area.

### Travel Management Prescriptions for the Primitive Zone

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed, except in research natural areas which are closed to OHV use.

Aircraft landings would be allowed within the RNAs and the White Mountain Spine Area, with the following provisions: No clearing of vegetation would be allowed without a permit from the Authorized Officer.

A permit or approved Plan of Operations would be required for all summer OHV use.

In areas with a Closed OHV designation (Research Natural Areas) subject to reasonable regulations, a free permit may be issued for access via snowmobiles for traditional activities and for travel to and from villages and homesites (ANILCA Sec. 1110). Similarly, federally Qualified Subsistence Users, subject to reasonable regulations and with a free permit, can use snowmobiles or other means of surface transportation traditionally employed for subsistence purposes (ANILCA Sec. 811) in areas with use limitations for casual users. Free permits may be obtained in person, by mail, and by phone from the BLM Fairbanks District Office and other appropriate locations.

**RATIONALE:** The federal government established a system of Research Natural Areas (RNAs) in 1927. RNAs are tracts of federal land and water established and managed for the primary purpose of research and education (43 CFR 8223.0-1). RNAs were selected to contain examples of significant natural ecosystems, areas suitable for ecological study, and rare species of plants and animals. Federal and state agencies have cooperated in Alaska since 1973 in selecting, documenting, and describing RNAs.

Four RNAs were designated in the planning area in 1986 (BLM 1986a and 1986b). The RNAs were designated to provide areas where natural ecosystems and processes are undisturbed so that they can be studied and understood, and to provide an undisturbed area for comparison with other areas so that effects of management and use can be assessed. The principle of maintaining reference conditions for scientific comparison is basic to the purposes of the system of RNAs.

Motorized vehicle access in the RNAs, including snowmobile use in winter, has the potential to damage vegetation, geologic structures, and soils. Any such disturbance has the potential to reduce the value of the area for future research by altering natural conditions. Although specific natural features were identified prior to designation and in reports for each RNA, other features could be equally valuable in future research. In other words, it is not possible now to identify what resources will be most valuable later for scientific study.

Although snow cover and frozen ground is considered adequate to protect vegetation and soils from snowmobiles in most areas, effects on vegetation do often occur from such use. Shrubs and small trees near or above the snow surface can be damaged and broken. The spinning of a snowmobile track can quickly remove considerable snow cover, especially high-power machines with paddle tracks. On steep slopes (typical in many of the RNAs), high snow depths may be required to avoid impacting low vegetation and ground cover. Repeated travel on trails can pack snowcover, decreasing insulation value of the snow, and in some places cause subsurface water flow to occur on the surface and “glaciering” to occur. The later melt of this ice in spring can impact vegetation growth and change vegetation type.

Title VIII of ANILCA protects access to public lands by subsistence users via motorboat, snowmobile, and other means of surface transportation traditionally employed by local residents and subject to reasonable regulations. Title XI of ANILCA allows for use of snowmobiles, motorboats, and airplanes for traditional activities and travel to and from villages and homesites within WSRs, the Steese National Conservation Area and the White Mountains NRA, subject to reasonable regulation.

#### Travel Management Prescriptions for the Semi-Primitive RMZ

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

#### Travel Management Prescriptions for the Backcountry RMZ

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

#### Travel Management Prescriptions for the Middlecountry RMZ

Same as Management Common to All Lands, with the following additions:

ATVs 50" width and less, and 1,000 pounds curb weight and less would be allowed on designated trail only (May 1 through October 14 except for Wickersham Creek Trail). Wickersham Creek Trail from Mile 28 Elliott Highway to its intersection with 23.5 mile trail is open to the summer use of ATVs from June 1 through October 14. Summer use is delayed to protect costly improvements to trail tread from rutting and erosion, and allow the ground to thaw. The use of motorized travel, except snowmobiles, ends October 14, unless posted otherwise, so as not to impact winter trail grooming activities. User-created routes and travel off of designated trails would not be allowed. Designated trails include (Map 53):

1. Wickersham Creek Trail from Mile 28 Elliott Highway to the intersection with Trail Creek Trail.
2. Trail Creek Trail from the intersection with Wickersham Creek Trail to Lee's Cabin.
3. Mile 23.5 Elliott Highway to the intersection with Wickersham Creek Trail.
4. Trail Creek Trail from Lee's Cabin to Beaver Creek WSR Corridor.
5. McKay Creek Trail from the White Mountains NRA boundary to Beaver Creek WSR Corridor.
6. Lower Nome Creek Trail from McKay Creek Trail intersection to Nome Creek Road.
7. Bear Creek Trail from Nome Creek Road to Richards Cabin, Richards cabin NE along Bear Creek.
8. Sled Dog Rocks Trail from Richards Cabin to Sled Dog Rocks.
9. Quartz Creek Trail from Nome Creek Road to Quartz Creek.
10. Champion Ridge Trail from Quartz Creek Trail west 3 miles.
11. Moose Creek Ridge Trail from Nome Creek Road to top of Ridge, then east along ridge to Quartz Creek Trail and west along ridge to Moose Creek.
12. White Mountains NRA Boundary Trail from McKay Creek Trail west along boundary 11 miles.
13. Globe Peak Trail from Globe Peak to intersection with Big Bend Trail.
14. Big Bend Trail from Colorado Creek Cabin to Beaver Creek WSR Corridor.
15. Colorado Creek Trail from Colorado Creek cabin, west to White Mountains NRA boundary.
16. Ridge Trail from Colorado Creek Trail to VABM Beaver.
17. Portion of Haystack Mountain access on BLM-managed lands.
18. Little Champion Creek extension.

Additional trails could be added as they are identified or designed and constructed by BLM in a sustainable fashion.

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

#### Travel Management Prescriptions for the Nome Creek Frontcountry RMZ

Same as Management Common to All Lands, with the following additions:

The Table Top Mountain Trail, Two-Step Louis Trail, and Fishing Trail inside the Cripple Creek Campground are limited to non-motorized use only.

ATVs 50" width and less, and 1,000 pounds curb weight and less are allowed on designated trails only (May 1 through October 14). User-created routes and travel off of designated trails would not be allowed. Designated trails include (Map 53):

1. Moose Creek Ridge Trail from Nome Creek Road to top of Ridge, then east along ridge to Quartz Creek Trail and west along ridge to Moose Creek.
2. Bear Creek Trail from Nome Creek Road to Richards Cabin.
3. Quartz Creek Trail.
4. Lower Nome Creek Trail.

Additional designated trails could be added to the trail network as they are designed and constructed by BLM in a sustainable fashion.

The management intent for the Nome Creek tailings area would be to continue to allow access and recreation opportunities within the disturbed, gravel area. The tailings area would be classified as a Limited Area Designation. The use of licensed, highway vehicles (including, but not limited to trucks and motorhomes) and OHVs weighing 1,500 pounds curb weight and less, and 64" width and less would be allowed. Travel off of the disturbed rock tailings by motorized means would not be allowed. Travel by motorized vehicle up or down Nome Creek or its tributaries would not be allowed. Motorized users may cross Nome Creek or its tributaries at right angles only.

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

Launching of boats in the Nome Creek Valley would be restricted to 15 horsepower or less.

#### Travel Management Prescriptions for the Wickersham Dome-Fred Blixt Frontcountry RMZ

Same as Management Common to All Lands, with the following additions:

The Ski Loop and Summit trails are limited to non-motorized use only.

ATVs 50" width and less, and 1,000 pounds curb weight and less would be allowed on designated trails only (May 1 through October 14 except for Wickersham Creek Trail). Wickersham Creek Trail from Mile 28 Elliott Highway to its intersection with 23.5 mile trail is open to the summer use of ATVs from June 1 through October 14. Summer use is delayed to protect costly improvements to trail tread from rutting and erosion, and to allow the ground to thaw. The use of

motorized travel, except snowmobiles, ends October 14, unless posted otherwise, so as not to impact winter trail grooming activities. User-created routes and travel off of designated trails would not be allowed. Designated trails include (Map 53):

1. Wickersham Creek Trail from Mile 28 Elliott Highway to the intersection of Trail Creek Trail.
2. Trail Creek Trail from the intersection of Wickersham Creek Trail to Lee's Cabin.
3. Mile 23.5 Elliott Highway to intersection with Wickersham Creek Trail.

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

**RATIONALE:** Limiting the use of OHVs by weight, seasonal closure, and/or to designated routes are nationally accepted methods for protecting resources from damage by OHV use. The White Mountains NRA is a fragile landscape with seasonally frozen ground and permafrost making summer use of OHVs difficult. Traveling on ice-rich permafrost areas causes thawing, ground degradation, and vegetation damage. Limiting the use of OHVs by weight, seasonal closure, or to designated routes, would help maintain the appropriate recreational setting, help protect the trails from excessive erosion and rutting, and protect the investment the BLM has made to improve the trails.

The Wild and Scenic Rivers Act states that rivers classified as “wild” are generally inaccessible except by trail, and are to represent vestiges of primitive America (Wild and Scenic Rivers Act, Section 2). Beaver Creek WSR has been managed for its wild, natural character as a remote, float-boating experience, focused on a non-motorized recreation experience for the past 30 years since its designation and classification as a “wild” river. Beaver Creek has outstanding remarkable scenic, recreational, geologic, fish and fish habitat, and wildlife values. Prohibiting the use of hovercraft, airboats, and personal watercraft would protect and enhance these outstandingly remarkable values. Additionally it would reduce disturbance of sensitive wildlife species such as nesting peregrine falcons and Dall sheep.

Airboats, hovercraft and personal watercraft generate noise levels which are disruptive to some recreationists and would diminish the Semi-Primitive experience managed for and expected by those recreationists on a “wild” river. These types of use are not considered compatible with the values for which the “wild” river is to be managed.

Nome Creek is generally too narrow for two-way traffic. Allowing boats capable of traveling upstream on Nome Creek may pose a safety risk for float-boaters that mainly travel downstream.

#### Travel Management Prescriptions for the Other BLM lands

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 curb weight and less would be allowed.

Summer use (May 1 through October 14) of OHVs weighing 1,500 pounds curb weight and less (cross-country travel allowed except where this use may interfere with active mining operations).

A permit or approved Plan of Operations would be required for all other OHV uses.

### **2.10.2.1.2.7. Withdrawals**

#### **DECISIONS:**

In addition to the decisions listed in section 2.6.3.8 Withdrawals, the following decisions would apply to Alternative B.

The one-million-acre White Mountains NRA would remain closed to locatable mineral entry under ANILCA.

Approximately 12,800 acres would be closed to locatable mineral entry, including metalliferous minerals, at Wickersham Dome (FM., T. 4N., R. 2W., that portion of the township north and east of the Elliott Highway), for the purposes of maintaining the recreation setting prescriptions and facilities.

Recommend retention of PLO 4176, Recreation site withdrawal (505 acres). The withdrawn lands are located at Perhaps Creek, U.S. Creek, and Cripple Creek, all of which are within FM., T.5N., R.5E.

Land tenure Zone 3 lands (Appendix G, *Land Tenure*) will be recommended closed to mineral leasing and location to prevent encumbrance. As needed, recommend modification of public land orders to allow for disposal of these parcels while keeping them closed to mineral entry and mineral leasing.

### **2.10.2.1.3. Special Designations**

#### **2.10.2.1.3.1. Areas of Critical Environmental Concern**

#### **DECISIONS:**

Under Alternative B, approximately 576,000 acres would be designated as the White Mountains ACEC (Map 64) to protect relevant and important values including caribou calving and postcalving habitat for the White Mountains caribou herd and Dall Sheep habitat.

Ungulate mineral licks: Within a distance of one mile of designated ungulate mineral licks, limit all permitted uses and development of facilities for permitted uses, from May 10 through August 31 to activities which would not reduce sheep use of licks.

Allowed uses would be managed to maintain caribou and Dall sheep habitat. The area is and would remain generally free of summer motorized vehicle use (May 1 through October 14 sheep habitat; May 10 through July 15 remainder), i.e., summer motorized vehicle use, in the few areas of the ACEC where allowed, would be restricted to a limited set of trails. In locations where summer motorized use is currently allowed and vehicle trails are currently established, motorized vehicle use would be limited to select designated trails. Where the ACEC overlays Middlecountry RMZs (and OHV trail construction and other development may be planned), manage the area to maintain its value as caribou and Dall sheep habitat as well as to meet the objectives for that RMZ. Designated trails and other developments may be established in this Zone if limited in density and compatible with caribou and Dall sheep habitat.

Winter motorized use in Dall sheep habitat is currently minimal, but would be monitored and, if use begins to approach a level which may result in altered distribution of Dall sheep, such use

may be restricted in the future (through alteration of maintained trails or, if necessary, limited closures, e.g., limited areas and/or time periods).

### SUMMARY OF MANAGEMENT IN THE ACEC

The following is a summary of other management decisions that would apply within the ACEC under Alternative B.

The ACEC would remain closed to locatable mineral entry and mineral leasing. Most of the ACEC would be closed to salable minerals. The portion of the ACEC in the Middlecountry RMZ would be open to salable minerals (Map 53). The ACEC would be retained in federal land status and would be a ROW avoidance area. Land use permits and leases would be considered, subject to constraints for ungulate mineral licks. Standard Operating Procedures (Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations*) would apply to activities requiring a permit from the BLM.

The ACEC includes Primitive, Semi-Primitive, Backcountry, and Middlecountry Recreation Management Zones (RMZs). The OHV designation is Closed in the RNAs and Limited in all other areas. No motorized OHV use is allowed in the RNAs except by permit. Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed in all areas except RNAs. Summer use of OHVs would not be allowed in the Primitive, Semi-Primitive and Backcountry Zones except by permit. In the Middlecountry RMZ, ATVs 50” and less, and 1,000 pounds curb weight and less would be allowed on designated trails only. A full description of the OHV limitations can be found in section 2.10.2.1.2.6 Travel Management and in Appendix B, *Travel Management Plan: White Mountains*.

#### **2.10.2.1.3.2. Research Natural Areas**

##### DECISIONS:

The three existing RNA designations would be maintained: the Limestone Jags (5,170 acres), Serpentine Slide (4,270 acres), and Mount Prindle (3,150 acres).

Management of RNAs would generally be the same as Alternative A. The RNAs would be managed to maintain a Primitive recreation setting. No surface-disturbing activities allowed except BLM-authorized research projects. The RNAs would remain closed to mineral entry and mineral leasing. Additional management direction for these areas can be found in Table H.60, “Alternative B, Research Natural Areas and White Mountains Spine, Recreation Management Zone 1”.

#### **2.10.2.1.3.3. Wild and Scenic Rivers**

##### DECISIONS:

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

The outstandingly remarkable values for Beaver Creek WSR are scenic, recreation, geologic, fisheries, and wildlife as described in Section E.2.2, “Outstanding Remarkable Values for Beaver Creek”.

Under Alternative B, Fossil Creek would be recommended as suitable for designation under the Wild and Scenic Rivers Act according to its eligibility class.

River Name	Classification	Outstandingly Remarkable Values	Miles
Fossil Creek	“scenic”	scenic and geologic	23

RATIONALE: Fossil Creek is free-flowing and possesses outstandingly remarkable values as described in Section E.1.1, “Determining Eligibility”. All eligible rivers are recommended suitable in one alternative for the purpose of analyzing the impacts of designation.

## **2.10.2.2. Alternative C: White Mountains Subunit**

### **2.10.2.2.1. Resources**

#### **2.10.2.2.1.1. Cave and Karst Resources**

DECISIONS: Same as Alternative B with the following addition.

Management objective: If needed to prevent resource damage, develop hiking trails that allow for recreational use while preserving scientific integrity of cave and karst resources.

#### **2.10.2.2.1.2. Cultural Resources**

DECISIONS:

Same as Alternative B.

#### **2.10.2.2.1.3. Fish and Aquatic Species**

DECISION:

In addition to the decisions Common To All Subunits listed in section 2.6.2.3, Fish and Aquatic Species, the following decisions would apply under Alternative C:

The following watersheds would be managed as RCAs (Map 9).

1. Beaver Creek (HUC # 190404022104)
2. Beaver Creek (HUC # 190404022109)
3. Beaver Creek (HUC # 190404022208)
4. Deadwood Creek-Victoria Creek (HUC # 190404022304)
5. Headwaters Victoria Creek (HUC # 190404022301)
6. Montana Creek-South Beaver Creek (HUC # 190404022206)
7. Ophir Creek (HUC # 190404022003)
8. Outlet Victoria Creek (HUC # 190404022305)
9. South Beaver Creek (HUC # 190404022202)
10. South Beaver Creek (HUC # 190404022207)
11. Victoria Mountain-Beaver Creek (HUC # 190404022406)
12. Victoria Creek (HUC # 190404022303)
13. Yellow Creek- Beaver Creek (HUC # 190404022408)

The Sumner Creek-Nome Creek watershed (HUC# 190404022004) would be a High Priority Restoration Watershed and emphasized for active restoration.

Complete watershed assessments Section I.5, "Watershed Assessment Process" as necessary for management.

#### **2.10.2.2.1.4. Visual Resources**

Proposed VRM classes for Alternative C are displayed on Map 21. Recreation Management Zones (RMZs) are displayed on Map 54. Areas where wilderness characteristics would be maintained are displayed on Map 75.

#### **DECISIONS:**

The Beaver Creek WSR/RMZ (RSC Class of Semi-Primitive) would be managed as VRM Class I. The Serpentine Slide, Mount Prindle RNA, Limestone Jags RNA, and White Mountains Spine Area (RSC Class of Primitive) would be managed as VRM Class I. Management of VRM Class I is to preserve the existing characteristics of the landscape, but allows for limited management activities where changes should be very low and must not attract attention of the casual observer.

The White Mountains Highlands RMZ (RSC Class of Semi-Primitive), and that portion of the Cache Mountain RMZ (RSC Class of Backcountry) where wilderness characteristics would be maintained, would be managed as VRM Class II. Developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with minor changes to landform and vegetation.

The remainder of the Cache Mountain RMZ (RSC Class of Backcountry) would be managed as VRM Class III. Developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with moderate changes to landform and vegetation and may attract the attention of the casual observer.

The White Mountains Foothills RMZ (RSC Class of Middlecountry), and Nome Creek and Wickersham Dome-Blixt RMZs (RSC Class of Frontcountry) would be managed as VRM Class IV. In VRM Class IV areas, management actions would be taken to protect the Wild and Scenic River view shed and adjacent VRM Classes. Development activities would be designed to harmonize with the visually dominating elements of the surrounding landscape characteristics of line, form, color and texture but major modification of the natural landscape would be allowed.

Areas to be managed for wilderness characteristics associated with Beaver Creek RMZ, Serpentine Slide, Mount Prindle and Limestone Jags RNAs and White Mountains Spine Area would be managed as VRM Class I while those associated with the White Mountains Highlands and Cache Mountain RMZs would be managed as VRM Class II.

All remaining BLM-managed lands would be assigned a VRM Class IV.

#### **2.10.2.2.1.5. Wildlife**

#### **DECISIONS:**

Same as Alternative B except:

Casual use of domestic sheep, goats, and camelids (including alpaca & llama), would not be prohibited in Dall sheep habitat.

No ACEC would be designated. Instead a smaller area of 417,000 acres would be identified as the White Mountains Wildlife Conservation Area (Map 65) to protect caribou calving and postcalving habitat for the White Mountains caribou herd and Dall sheep habitat. The following management will apply to this area: Within a distance of one mile of designated ungulate mineral licks, limit all permitted uses and development of facilities for permitted uses, from May 10 through August 31 to activities which would not reduce sheep use of licks.

Allowed uses would be managed to maintain caribou and Dall sheep habitat. The area is and would remain generally free of summer motorized vehicle use (May 1 through October 14 sheep habitat; May 10 through July 15 remainder).

Winter motorized use in Dall sheep habitat is currently minimal, but would be monitored and, if use begins to approach a level which may result in altered distribution of Dall sheep, such use may be restricted in the future (through alteration of maintained trails or, if necessary, limited closures (limited areas and/or time periods)).

#### **2.10.2.2.1.6. Wilderness Characteristics**

##### **OBJECTIVE:**

Allow for multiple use while maintaining naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on 312,000 acres so that these lands retain their wilderness characteristics for the life of the RMP.

##### **DECISION:**

Consistent with allocation decisions in the RMP, allow other multiple-uses on lands where wilderness characteristics would be maintained, while applying management restrictions (such as conditions of use or mitigation measures) to avoid or minimize impacts to wilderness characteristics and meet the objective retaining wilderness characteristics over the life of the RMP.

Wilderness characteristics would be maintained on 312,000 acres (31 percent of the lands with wilderness characteristics in this subunit). These lands occur within the Primitive, Semi-Primitive, and portions of the Cache Mountain Backcountry Recreation Management Zones (Map 75).

**RATIONALE:** Wilderness characteristics would be maintained because of the status of the area as national recreation area and decisions in this alternative to protect caribou and Dall sheep habitats, close the lands to mineral leasing, manage for Primitive, Semi-Primitive, and Backcountry recreation settings, and set OHV designations. Management for primitive, semi-primitive, and backcountry recreational opportunities would be consistent with maintaining wilderness characteristics. Additionally, BLM-authorized uses would be further analyzed through the NEPA process for impacts to size, naturalness, primitive recreation, and solitude, and stipulated mitigation measures would be applied where needed to minimize impacts.

More than 31 percent of the lands in the White Mountains NRA would likely retain its wilderness characteristics over the life of the plan because of its designation as a national recreation area, ANILCA withdrawal of the entire area from mining, and low probability of major rights-of-way or other large surface disturbing activities.

## **2.10.2.2.2. Resource Uses**

### **2.10.2.2.2.1. Forest and Woodland Products**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.1, the following decisions would apply under Alternative C:

#### DECISIONS:

Personal use of timber would be allowed on all lands except within the Beaver Creek WSR Corridor and the RNAs.

Commercial timber salvage sales would be allowed on all lands.

Commercial timber sales (large and small) would be allowed on all lands except within the Beaver Creek WSR Corridor and the RNAs.

Commercial use of forest products would be allowed on all lands except within the RNAs.

### **2.10.2.2.2.2. Land Tenure**

Same as Alternative B.

### **2.10.2.2.2.3. Land Use Authorizations**

#### DECISIONS:

Same as Alternative B, except no new transportation corridors or right-of-way avoidance areas would be designated.

### **2.10.2.2.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals. In addition to the decisions listed as Common To All Subunits in section 2.6.3.5, the decisions in the following mineral sections would apply under Alternative C.

#### **2.10.2.2.2.4.1. Fluid Leasable Minerals**

##### DECISIONS:

Same as Alternative B.

The subunit, approximately 1,020,000 acres would be closed to fluid leasable minerals (Map 35).

#### **2.10.2.2.2.4.2. Solid Leasable Minerals**

##### DECISIONS:

The same areas closed to fluid leasable minerals under this alternative, would also be closed to solid leasable minerals (Map 35).

### 2.10.2.2.2.4.3. Locatable Minerals

#### DECISIONS:

Same as Alternative B, the entire subunit 1,020,000 acres would be closed to locatable mineral entry (Map 34).

### 2.10.2.2.2.4.4. Salable Minerals

#### DECISIONS:

Under Alternative C, The Beaver Creek WSR Corridor (69,000 acres) would be closed to salable minerals.

All remaining lands, 951,000 acres would be open to salable minerals.

### 2.10.2.2.2.5. Recreation

#### DECISIONS:

Same as Alternative B, the White Mountains SRMA would include 1,016,000 acres of lands including Beaver Creek WSR Corridor, the White Mountains NRA, and associated lands (Map 54). Under Alternative C, the White Mountains SRMA would include 7 Recreation Management Zones (RMZs), the management of which are described more fully in Section H.3.2, "White Mountains Alternative C" Appendix H.3.2.

**Table 2.22. White Mountain Recreation Management Zones, RSC Settings and OHV Designations, Alternative C**

Name	Acres	RSC Setting <sup>a b</sup>	OHV designation
Research Natural Areas	13,000	Primitive	CLOSED
White Mountains Spine Area	14,000	Primitive	LIMITED
White Mountain Highlands	102,000	Semi-Primitive	LIMITED
Beaver Creek Corridor	69,000	Semi-Primitive	LIMITED
Cache Mountain	382,000	Backcountry	LIMITED
White Mountain Foothills	397,000	Middlecountry	LIMITED
Nome Creek	31,000	Frontcountry	LIMITED
Wickersham Dome/Blixt Cabin	8,000	Frontcountry	LIMITED
Other BLM lands	4,000	N/A	LIMITED

<sup>a</sup>Table 2.5

<sup>b</sup>RSC are descriptive conditions describing management parameters at the implementation level. These are not land use planning decisions

### 2.10.2.2.2.6. Travel Management

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative C.

#### DECISIONS:

Under Alternative C, the entire White Mountains Subunit would be delineated as a Travel Management Area. For lands within the SRMA, specific Travel Management Zones (TMZs) have

also been delineated and are the same polygons used for RMZ delineations and subsequent RSC settings for this alternative. Each TMZ also contains a specific OHV designation of Open, Limited, or Closed (Table 2.22).

A comprehensive travel management network has been defined for the White Mountains Subunit. This is described fully in Appendix B, *Travel Management Plan: White Mountains*. Decisions from the travel management plan are summarized below.

The primary differences between Alternative C and Alternative B are in location and size of the Recreation Management Zones, some allowance of off-trail travel for game retrieval, and some allowance for use of UTVs. Snowmobiles are defined as 50 inches or less in width, and 1,000 pounds curb weight or less. ATVs are defined as 50 inches or less in width, and 1,000 pounds curb weight or less. UTVs are defined as 64 inches or less in width and 1,500 pounds curb weight or less.

### Travel Management Prescriptions Common to All Lands

The BLM may continue to issue temporary emergency closures based on a determination of considerable adverse effects pursuant to 43 CFR 8341.2, special rules. This includes considerable adverse impacts to soil, vegetation, wildlife habitat, or cultural resources. The agency can maintain this closure until the effects are mitigated and measures are implemented to prevent future recurrence.

All forms of non-motorized uses would allowed, including the use of horses and mountain bikes. Cross-country travel by non-motorized means would be allowed.

The following trails would be limited to non-motorized uses: Ski Loop Trail, Table Top Trail, Summit Trail, Two-Step Louis Trail, and Fishing Trail inside Cripple Creek Campground.

Camping and/or campfires would be prohibited within 25 feet of BLM-maintained trails within the White Mountains NRA.

Trapping and placement of bait and wildlife lures (scents) for the purpose of trapping fur bearers would be prohibited within 25 feet of the cleared edge of BLM-maintained trails. Trapping includes but is not limited to the use of marten pole sets, snares, conibear, or leg hold traps. These restrictions would not apply to sections of trail on land managed by the State of Alaska where the BLM maintains access to the White Mountains NRA.

Aircraft use would be unrestricted (except in Primitive RMZ), with the following provisions: Minimal clearing of rocks, downed logs, and brush would be allowed; construction or formal improvement of landing areas would occur by permit only; Use of gravel bars and winter snow areas would be allowed.

Motorboat use allowed without specific authorization consistent with ANILCA sections 1110(a) and 811 with the following reasonable regulation.

- Launching boats with motors exceeding 15 horsepower without written authorization from the AO is prohibited in the Nome Creek Valley.
- Airboats, hovercraft, and personal watercraft would be prohibited in the White Mountains Special Recreation Management Area.

### Travel Management Prescriptions for the Primitive RMZ

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed except within the research natural areas which are closed to OHV use.

A permit or approved Plan of Operations would be required for all summer OHV use.

Aircraft landings would be allowed within the RNAs and the White Mountain Spine Area, with the following provisions: No clearing of vegetation would be allowed without a permit from the Authorized Officer.

In areas with a Closed OHV designation (Research Natural Areas) subject to reasonable regulations, a free permit may be issued for access via snowmobiles for traditional activities and for travel to and from villages and homesites (ANILCA Sec. 1110). Similarly, federally Qualified Subsistence Users, subject to reasonable regulations and with a free permit, can use snowmobiles or other means of surface transportation traditionally employed for subsistence purposes (ANILCA Sec. 811) in areas with use limitations for casual users. Free permits may be obtained in person, by mail, and by phone from the BLM Fairbanks District Office and other appropriate locations.

**RATIONALE:** The federal government established a system of Research Natural Areas (RNAs) in 1927. RNAs are tracts of federal land and water established and managed for the primary purpose of research and education (43 CFR 8223.0-1). RNAs were selected to contain examples of significant natural ecosystems, areas suitable for ecological study, and rare species of plants and animals. Federal and state agencies have cooperated in Alaska since 1973 in selecting, documenting, and describing RNAs.

Four RNAs were designated in the planning area in 1986 (BLM 1986a and 1986b). The RNAs were designated to provide areas where natural ecosystems and processes are undisturbed so that they can be studied and understood, and to provide an undisturbed area for comparison with other areas so that effects of management and use can be assessed. The principle of maintaining reference conditions for scientific comparison is basic to the purposes of the system of RNAs.

Motorized vehicle access in the RNAs, including snowmobile use in winter, has the potential to damage vegetation, geologic structures, and soils. Any such disturbance has the potential to reduce the value of the area for future research by altering natural conditions. Although specific natural features were identified prior to designation and in reports for each RNA, other features could be equally valuable in future research. In other words, it is not possible now to identify what resources will be most valuable later for scientific study.

Although snow cover and frozen ground is considered adequate to protect vegetation and soils from snowmobiles in most areas, effects on vegetation do often occur from such use. Shrubs and small trees near or above the snow surface can be damaged and broken. The spinning of a snowmobile track can quickly remove considerable snow cover, especially high-power machines with paddle tracks. On steep slopes (typical in many of the RNAs), high snow depths may be required to avoid impacting low vegetation and ground cover. Repeated travel on trails can pack snowcover, decreasing insulation value of the snow, and in some places cause subsurface water flow to occur on the surface and “glaciating” to occur. The later melt of this ice in spring can impact vegetation growth and change vegetation type.

Title VIII of ANILCA protects access to public lands by subsistence users via motorboat, snowmobile, and other means of surface transportation traditionally employed by local residents and subject to reasonable regulations. Title XI of ANILCA allows for use of snowmobiles, motorboats, and airplanes for traditional activities and travel to and from villages and homesites within WSRs, the Steese National Conservation Area and the White Mountains NRA, subject to reasonable regulation.

#### Travel Management Prescriptions for the Semi-Primitive RMZ

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

#### Travel Management Prescriptions for the Backcountry RMZ

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

#### Travel Management Prescriptions for the Middlecountry RMZ

Same as Management Common to All Lands, with the following additions:

ATVs 50" width and less, and 1,000 pounds curb weight and less, would be allowed on designated trail only (May 1 through October 14 except for Wickersham Creek Trail). Wickersham Creek Trail from Mile 28 Elliott Highway to its intersection with 23.5 mile trail is open to the summer use of ATVs from June 1 through October 14. Summer use is delayed to protect costly improvements to trail tread from rutting and erosion, and allow the ground to thaw. The use of motorized travel, except snowmobiles, ends October 14, unless posted otherwise, so as not to impact winter trail grooming activities. Travel off of designated trails would be allowed only to retrieve legally harvested game within the Middlecountry RMZ. Designated motorized trails include (Map 54):

1. Wickersham Creek Trail from Mile 28 Elliott Highway to the intersection with Trail Creek Trail.
2. Trail Creek Trail from the intersection with Wickersham Creek Trail to Lee's Cabin.
3. Mile 23.5 Elliott Highway to intersection with Wickersham Trail.
4. Trail Creek Trail from Lee's Cabin to Beaver Creek WSR Corridor boundary.
5. McKay Creek Trail from the White Mountains NRA boundary to Beaver Creek WSR Corridor.
6. Lower Nome Creek Trail from McKay Creek Trail intersection to Nome Creek Road.
7. Bear Creek Trail from Nome Creek Road to Richards Cabin, Richards cabin NE along Bear Creek.
8. Sled Dog Rocks Trail from Richards Cabin to Sled Dog Rocks.
9. Quartz Creek Trail from Nome Creek Road to Quartz Creek.
10. Champion Ridge Trail from Quartz Creek Trail west 3 miles.
11. Moose Creek Ridge Trail from Nome Creek Road to top of ridge, then east to Quartz Creek Trail and west along ridge to Moose Creek.

12. White Mountains NRA Boundary Trail from McKay Creek Trail west along boundary 11 miles.
13. Globe Peak Trail from Globe Peak to intersection with Big Bend Trail.
14. Big Bend Trail from Globe Peak west along ridge top, south to Beaver Creek WSR Corridor and north to Colorado Creek Cabin.
15. Colorado Creek Trail from Colorado Creek cabin, west to White Mountains NRA boundary.
16. Ridge Trail from Colorado Creek Trail to VABM Beaver.
17. Portion of Haystack Mountain access on BLM-managed lands.
18. Little Champion Creek extension.

UTVs 64" width and less, and 1,500 pounds curb weight or less, would be allowed on designated trails only. Designated trails for UTVs include:

1. Quartz Creek Trail from Nome Creek Road to Quartz Creek.
2. Wickersham Creek Trail from Mile 28 Elliott Highway to the intersection with Trail Creek Trail.
3. Trail Creek Trail from the intersection with Wickersham Creek Trail to Lee's Cabin.
4. Mile 23.5 Elliott Highway to Wickersham Creek Trail.

Additional designated trails could be added in the future, once a trail is improved and sustainable for this use. No game retrieval by UTVs would be allowed off of the designated trail.

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

#### Travel Management Prescriptions for the Nome Creek Frontcountry RMZ

Same as Management Common to All Lands, with the following additions:

The Table Top Mountain Trail, Two-Step Louis Trail and Fishing Trail, inside the Cripple Creek Campground, are limited to non-motorized use only.

ATVs 50" width and less, and 1,000 pounds curb weight and less would be allowed on designated trails only (May 1 through October 14). Travel off of designated trails would be allowed only to retrieve legally harvested game within the Frontcountry RMZ. Designated trails include (Map 54):

1. Moose Creek Ridge Trail from Nome Creek Road to top of ridge, then east to Quartz Creek Trail and west along ridge to Moose Creek.
2. Bear Creek Trail from Nome Creek Road to Richards Cabin.
3. Quartz Creek Trail from Nome Creek Road to Quartz Creek.
4. Lower Nome Creek Trail from McKay Creek Trail intersection to Nome Creek Road.

Additional trails could be added to the designated trail system as they are identified or designed and constructed by the BLM in a sustainable fashion.

UTVs 64" width and less, and 1,500 pounds curb weight or less, would be allowed on the Quartz Creek Trail only. Additional trails may be provided in the future once a trail is improved and sustainable for this use. No game retrieval by UTVs is allowed off of the designated trail.

The intent of management for the Nome Creek tailings area is to continue to allow access and recreation opportunities within the disturbed, gravel area. The use of licensed, highway vehicles (including, but not limited to trucks and motorhomes) and OHVs weighing 1,500 pounds

curb weight and less, and 64" and less is allowed. Travel off of the disturbed rock tailings by motorized means is not allowed. The tailings area would be classified as "Limited" to such motorized uses as to not adversely affect the area. Travel by motorized vehicle up or down Nome Creek or its tributaries is not allowed. Motorized users may cross Nome Creek or its tributaries at right angles only.

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

Launching of boats in the Nome Creek Valley is restricted to 15hp or less.

#### Travel Management Prescriptions for the Wickersham Dome-Fred Blixt Frontcountry RMZ

Same as Management Common to All Lands, with the following additions:

ATVs 50" width and less, and 1,000 pounds curb weight and less would be allowed on designated trails only (May 1 through October 14 except for Wickersham Creek Trail). Wickersham Creek Trail from Mile 28 Elliott Highway to its intersection with 23.5 mile trail is open to the summer use of ATVs from June 1 through October 14. Summer use is delayed to protect costly improvements to trail tread from rutting and erosion, and allow the ground to thaw. The use of motorized travel, except snowmobiles, ends October 14, unless posted otherwise, so as not to impact winter trail grooming activities. Travel off of designated trails allowed only to retrieve legally harvested game. Designated trails include:

1. Wickersham Creek Trail from Mile 28 Elliott Highway to the intersection with Trail Creek Trail.
2. Trail Creek Trail from the intersection with Wickersham Creek Trail to Lee's Cabin.
3. Mile 23.5 Elliott Highway to intersection with Wickersham Creek Trail.

UTVs 64" width and less, and 1,500 pounds curb weight or less, would be allowed on designated trails only (May 1 through October 14 except for Wickersham Creek Trail, same as above). No game retrieval by UTVs is allowed off of the designated trail. Designated trails for UTVs include (Map 54):

1. Wickersham Creek Trail from Mile 28 Elliott Highway to the intersection with Trail Creek Trail.
2. Trail Creek Trail from the intersection with Wickersham Creek Trail to Lee's Cabin.
3. Mile 23.5 Elliott Highway to intersection with Wickersham Creek Trail.

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

#### Travel Management Prescriptions for Other BLM lands

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

Summer use (May 1 through October 14) of OHVs weighing 1,500 pounds curb weight and less (cross-country travel allowed except where this use may interfere with active mining operations).

A permit or approved Plan of Operations would be required for all other OHV uses.

**RATIONALE:** Limiting the use of OHVs by weight, seasonal closure, and/or to designated routes are nationally accepted methods for protecting resources from damage by OHV use. The White Mountains NRA is a fragile landscape with seasonally frozen ground and permafrost making summer use of OHVs difficult. Traveling on ice-rich permafrost areas causes thawing, ground degradation, and vegetation damage. Limiting the use of OHVs by weight, seasonal closure, or to designated routes, would help maintain the appropriate recreational setting, help protect the trails from excessive erosion and rutting, and protect the investment the BLM has made to improve the trails. Allowing for off-route travel by ATV for game retrieval would somewhat increase impacts to natural resources but would provide additional opportunity for motorized assisted hunting, consistent with recreation opportunity settings.

The Wild and Scenic Rivers Act states that rivers classified as “wild” are generally inaccessible except by trail, and are to represent vestiges of primitive America (Wild and Scenic Rivers Act, Section 2). Beaver Creek WSR has been managed for its wild, natural character as a remote, float-boating experience, focused on a non-motorized recreation experience for the past 30 years since its designation and classification as a “wild” river. Beaver Creek has outstanding remarkable scenic, recreational, geologic, fish and fish habitat, and wildlife values. Prohibiting the use of hovercraft, airboats, and personal watercraft would protect and enhance these outstandingly remarkable values. Additionally it would reduce disturbance of sensitive wildlife species such as nesting peregrine falcons and Dall sheep.

Airboats, hovercraft and personal watercraft generate noise levels which are disruptive to some recreationists and would diminish the Semi-Primitive experience managed for and expected by those recreationists on a “wild” river. These types of use are not considered compatible with the values for which the “wild” river is to be managed.

Nome Creek is generally too narrow for two-way traffic. Allowing boats capable of traveling upstream on Nome Creek may pose a safety risk for float-boaters that mainly travel downstream.

#### **2.10.2.2.2.7. Withdrawals**

**DECISIONS:**

Same as Alternative B.

#### **2.10.2.2.3. Special Designations**

##### **2.10.2.2.3.1. Research Natural Areas**

**DECISIONS:**

The three existing RNA designations would be maintained: Limestone Jags (5,170 acres), Serpentine Slide (4,270 acres), and Mount Prindle (3,150 acres). Management of RNAs would be the same as Alternative B, except that primitive camping and development of primitive hiking trails would be allowed. Natural processes, including wildfire, continue with as little interference as possible. Hiking, hunting, and natural appreciation are allowed. No surface-disturbing

activities allowed except BLM-authorized research projects and primitive hiking trails. The RNAs would remain closed to mineral entry and mineral leasing.

### **2.10.2.3.2. Wild and Scenic Rivers**

#### DECISIONS:

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

ORVs would be designated for Beaver Creek. No rivers would be recommended suitable for designation under the Wild and Scenic Rivers Act.

RATIONALE: ANILCA closed the White Mountains NRA to the location of new mining claims and in all alternatives of this EIS, the Fossil Creek area would be closed to mineral leasing and OHV use would be limited to the winter. These decisions would protect the values of Fossil Creek. There is no known public or state support for designating Fossil Creek. For these reasons, Fossil Creek has been determined to be not suitable for designation under Alternative C.

### **2.10.2.3. Alternative D: White Mountains Subunit**

#### **2.10.2.3.1. Resources**

##### **2.10.2.3.1.1. Cave and Karst Resources**

#### DECISIONS:

Same as Alternative C.

##### **2.10.2.3.1.2. Cultural Resources**

#### DECISIONS:

Same as Alternative B.

##### **2.10.2.3.1.3. Fish and Aquatic Species**

#### DECISION:

In addition to the decisions listed as Common To All Subunits in section 2.6.2.3, the following decisions would apply under Alternative D:

The following watersheds would be managed as RCAs (Map 10).

1. Beaver Creek (HUC # 190404022104)
2. Beaver Creek (HUC # 190404022109)
3. Beaver Creek (HUC # 190404022208)
4. Montana Creek-South Beaver Creek (HUC # 190404022206)
5. South Beaver Creek (HUC # 190404022202)
6. South Beaver Creek (HUC # 190404022207)
7. Victoria Mountain-Beaver Creek (HUC # 190404022406)
8. Yellow Creek- Beaver Creek (HUC # 190404022408)

The Sumner Creek-Nome Creek watershed (HUC# 190404022004) would be a High Priority Restoration Watershed and emphasized for active restoration.

Complete watershed assessments Section I.5, “Watershed Assessment Process” as necessary for management.

#### **2.10.2.3.1.4. Visual Resources**

Proposed VRM classes for Alternative D are displayed on Map 22. Recreation Management Zones (RMZs) are displayed on Map 55. Areas where wilderness characteristics would be maintained are displayed on Map 76.

#### **DECISIONS:**

The Beaver Creek WSR/RMZ (RSC Class of Semi-Primitive) would be managed as VRM Class I. The Serpentine Slide, Mount Prindle, and Limestone Jags RNAs (RSC Class of Primitive) would be managed as VRM Class I. Management of VRM Class I is to preserve the existing characteristics of the landscape, but allows for limited management activities where changes should be very low and must not attract attention of the casual observer.

That portion of the Cache Mountain RMZ managed for maintenance of wilderness characteristics, (RSC Class of Backcountry) would be managed as VRM Class II. Developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with minor changes to landform and vegetation.

The remainder of the Cache Mountain RMZ (RSC Class of Backcountry) would be managed as VRM Class III. Developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with moderate changes to landform and vegetation and may attract the attention of the casual observer.

The White Mountains Foothills RMZ (RSC Class of Middlecountry), and Nome Creek and Wickersham Dome - Blixt RMZs (RSC Class of Frontcountry) would be managed as VRM Class IV. In VRM Class IV areas, management actions would be taken to protect the Wild and Scenic River view shed and adjacent VRM Classes. Development activities would be designed to harmonize with the visually dominating elements of the surrounding landscape but major modification of the landscape would be allowed.

Areas to be managed for wilderness characteristics associated with Beaver Creek RMZ, and Serpentine Slide, Mount Prindle and Limestone Jags RNAs would be managed as VRM Class I while those associated with the Cache Mountain RMZ would be managed as VRM Class II.

All remaining BLM-managed lands would be assigned a VRM Class IV.

#### **2.10.2.3.1.5. Wilderness Characteristics**

#### **OBJECTIVE:**

Allow for multiple use while maintaining naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on 205,000 acres so that these lands retain their wilderness characteristics for the life of the RMP.

#### **DECISIONS:**

Consistent with allocation decisions in the RMP, allow other multiple-uses on lands where wilderness characteristics would be maintained, while applying management restrictions (such as conditions of use or mitigation measures) to avoid or minimize impacts to wilderness characteristics and meet the objective retaining wilderness characteristics over the life of the RMP.

Under Alternative D, wilderness characteristics would be maintained on 205,000 acres (20 percent of the lands with wilderness characteristics in this subunit). These lands occur within the Beaver Creek WSR Corridor, the northeast portion of the Cache Mountain Backcountry Recreation Management Zone, and the Research Natural Areas (Map 76).

**RATIONALE:** Wilderness characteristics would be maintained because of the status of the area as national recreation area and decisions in this alternative to protect caribou and Dall sheep habitats, close lands to mineral leasing, manage for Primitive, Semi-Primitive, and Backcountry recreation settings, and set OHV designations. Management for Primitive, Semi-Primitive, and Backcountry recreational opportunities would be consistent with maintaining wilderness characteristics. Additionally, BLM-authorized uses would be further analyzed through the NEPA process for impacts to size, naturalness, primitive recreation, and solitude, and stipulated mitigation measures would be applied where needed to minimize impacts.

More than 20 percent of the lands in the White Mountains NRA would likely is their wilderness characteristics over the life of the plan because of its designation as a national recreation area, ANILCA withdrawal of the entire area from mining, and limited probability of major rights-of-way or other large surface disturbing activities.

#### **2.10.2.3.1.6. Wildlife**

##### **DECISIONS:**

Alternative D is similar to Alternative C, except the Wildlife Conservation Area is smaller and ungulate mineral lick provisions apply only to the area within one-half mile of ungulate mineral licks. Under Alternative D, approximately 181,000 acres would be identified as the White Mountains Wildlife Conservation Area (Map 66) to protect caribou calving and postcalving habitat for the White Mountains caribou herd and Dall Sheep habitat.

Within a distance of one-half mile of designated ungulate mineral licks, limit all permitted uses and development of facilities for permitted uses from May 10 through August 31 to activities which will not reduce sheep use of licks. Allowed uses would be managed to maintain caribou and Dall sheep habitat.

The area is and would remain generally free of summer motorized vehicle use (May 1 through October 14 sheep habitat; May 10 through July 15 remainder). Winter motorized use in Dall sheep habitat is currently minimal, but would be monitored and, if use begins to approach a level which may result in altered distribution of Dall sheep, such use may be restricted in the future (through alteration of maintained trails or, if necessary, limited closures (limited areas and/or time periods).

## **2.10.2.3.2. Resource Uses**

### **2.10.2.3.2.1. Forest and Woodland Products**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.1, the following decisions would apply under Alternative D:

#### **DECISIONS:**

Same as Alternative C, except personal use of timber would also be allowed in the Beaver Creek WSR Corridor and RNAs.

### **2.10.2.3.2.2. Land Tenure**

#### **DECISIONS:**

Same as Alternative C, except the Perhaps Creek portion of PLO 4176 would not be retained. The withdrawal would be modified to make this parcel available for State selection.

### **2.10.2.3.2.3. Land Use Authorizations**

#### **DECISIONS:**

Same as Alternative C.

### **2.10.2.3.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals. In addition to the decisions listed as Common To All Subunits in section 2.6.3.5, the decisions in the following mineral sections would apply under Alternative D.

#### **2.10.2.3.2.4.1. Fluid Leasable Minerals**

##### **DECISIONS:**

Approximately 451,000 acres in the Foothills Middlecountry RMZ would be open to fluid mineral leasing, subject to minor constraints.

The remainder of the subunit, 569,000 acres would be closed to fluid leasable minerals (Map 37).

#### **2.10.2.3.2.4.2. Solid Leasable Minerals**

##### **DECISION:**

Approximately 451,000 acres in the Foothills Middlecountry RMZ would be open to solid mineral leasing.

The remainder of the subunit, 569,000 acres would be closed to solid mineral leasing (Map 37).

### **2.10.2.3.2.4.3. Locatable Minerals**

#### DECISIONS:

The White Mountains NRA would remain withdrawn from staking of new mining claims. Locatable minerals would be available through a leasing program on a limited number of acres as described below.

### **2.10.2.3.2.4.4. Leasing of Hardrock Minerals**

When preparing the Draft RMP/EIS, the BLM understood the provisions under the Alaska National Interest Lands Conservation Act (ANILCA) for hardrock leasing in the White Mountains NRA (implemented by 43 CFR 3585) to apply only to removal of hardrock minerals from mining claims that existed before November 16, 1978. Since there are no longer any mining claims of record within the NRA, it was thought that no one could meet the requirements to lease hardrock minerals. This interpretation was determined to be incorrect, as the BLM, through its regulations at 43 CFR part 3580, has interpreted Section 1312 of ANILCA as allowing for disposal of hardrock minerals by lease in the White Mountain NRA even in the absence of an underlying unperfected mining claim, subject to certain findings by the Secretary.

To analyze an adequate range of alternatives and obtain public comment on hardrock mineral leasing in the White Mountains NRA, the BLM issued a Supplement to the Draft RMP/EIS. The Supplement amended Alternative D to include the hardrock mineral leasing scenario. Therefore, approximately 160,000 acres in the White Mountains NRA would be recommended open for leasing of hardrock minerals (Figure 2.1 in Appendix M).

- 64,000 acres of lands with known placer deposits of gold and high development potential would be open for leasing. Competitive leases issued in Quartz Creek will contain stipulations requiring mining by suction dredging only;
- 85,000 acres of lands with known placer deposits of gold and medium development potential would be open for leasing; and,
- 11,000 acres of lands with known deposits of four rare earth elements, lanthanum (La), praseodymium (Pr), Cerium (Ce), and neodymium (Nd), would be open for leasing.

The Standard Operating Procedures (SOPs) and Leasing Stipulations in Appendix A of this document would apply to hardrock mineral leasing and exploration licenses. The BLM has the authority to include special lease stipulations for the protection of the surface, its resources and use for recreation (43 CFR 3585). The BLM would use this authority to develop additional lease stipulations as appropriate at the time of a lease sale or approval of an exploration license.

SOPs specific to the White Mountains mineral leasing program include setbacks from public use cabins and trails and additional reclamation requirements similar to those required in riparian conservation areas. These SOPs are included in section A.3 of this document.

### **2.10.2.3.2.4.5. Salable Minerals**

#### DECISION:

Under Alternative D, the entire subunit, 1,020,000 acres, would be open to salable minerals.

### 2.10.2.3.2.5. Recreation

#### DECISIONS:

Special Recreation Management Areas (SRMA): The White Mountains SRMA would include approximately 1,016,000 acres including the Beaver Creek WSR Corridor and the White Mountains NRA and associated lands (Map 55). Under Alternative D, the White Mountains SRMA would include six Recreation Management Zones (RMZs), the management of which are described in Section H.3.3, “White Mountains Alternative D”.

**Table 2.23. White Mountain Recreation Management Zones, RSC Settings and OHV Designations, Alternative D**

Name	Acres	RSC Setting <sup>a b</sup>	OHV designation
Research Natural Areas	13,000	Primitive	CLOSED
White Mountain Highlands	N/A	N/A part of RMZ 4	N/A part of RMZ 4
Beaver Creek Corridor	69,000	Semi-Primitive	LIMITED
Cache Mountain	444,000	Backcountry	LIMITED
White Mountain Foothills	451,000	Middlecountry	LIMITED
Nome Creek	31,000	Frontcountry	LIMITED
Wickersham Dome/Blixt Cabin	8,000	Frontcountry	LIMITED
Other BLM lands	4,000	N/A	LIMITED

<sup>a</sup>Table 2.5

<sup>b</sup>RSC are descriptive conditions describing management parameters at the implementation level. These are not land use planning decisions

### 2.10.2.3.2.6. Travel Management

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative D.

#### DECISIONS:

Under Alternative D, the entire White Mountains Subunit would be delineated as a Travel Management Area. For lands within the SRMA, specific Travel Management Zones (TMZs) have also been delineated and are the same polygons used for RMZ delineations and subsequent RSC settings for this alternative. Each TMZ also contains a specific OHV designation of Open, Limited, or Closed (Table 2.23, “White Mountain Recreation Management Zones, RSC Settings and OHV Designations, Alternative D”).

A comprehensive travel management network has been defined for the White Mountains Subunit (Appendix B, *Travel Management Plan: White Mountains*). Decisions from the travel management plan are summarized below.

The primary differences between Alternatives C and D are the location and size of the RMZs, that cross-country use of all-terrain vehicles (ATVs) would be allowed in some areas, and some additional allowance for use of utility terrain vehicles (UTVs) as described below. Snowmobiles are defined as 50 inches or less in width, and 1,000 pounds curb weight or less. ATVs are defined as 50 inches or less in width, and 1,000 pounds curb weight or less. UTVs are defined as 64 inches or less in width and 1,500 pounds curb weight or less.

#### Travel Management Prescriptions Common to All Lands

Within all zones, the BLM may continue to issue temporary emergency closures based on a determination of considerable adverse effects pursuant to CFR 8341.2, special rules. This includes considerable adverse impacts to soil, vegetation, wildlife habitat, or cultural resources. The agency can maintain this closure until the effects are mitigated and measures are implemented to prevent future recurrence.

All forms of non-motorized uses would be allowed, including the use of horses and mountain bikes. Cross-country travel by non-motorized means would be allowed.

The following trails would be limited to non-motorized uses: Ski Loop Trail, Table Top Trail, Summit Trail, Two-Step Louis Trail, and Fishing Trail inside Cripple Creek Campground.

Camping and/or campfires would be prohibited within 25 feet of BLM-maintained trails within the White Mountains NRA.

Trapping and placement of bait and wildlife lures (scents) for the purpose of trapping fur bearers would be prohibited within 25 feet of the cleared edge of BLM-maintained trails. Trapping includes but is not limited to the use of marten pole sets, snares, conibear, or leg hold traps. These restrictions would not apply to sections of trail on land managed by the State of Alaska where the BLM maintains access to the White Mountains NRA.

Aircraft use would be unrestricted (except in Primitive RMZ), with the following provisions: Minimal clearing of rocks, downed logs, and brush would be allowed; construction or formal improvement of landing areas would occur by permit only; Use of gravel bars and winter snow areas would be allowed.

Motorboat use allowed without specific authorization consistent with ANILCA sections 1110(a) and 811 with the following reasonable regulation.

- Launching boats with motors exceeding 15 horsepower without written authorization from the AO is prohibited in the Nome Creek Valley.
- Airboats, hovercraft, and personal watercraft would be prohibited in the White Mountains Special Recreation Management Area.

#### Travel Management Prescriptions for the Primitive RMZ

Same as Management Common to All Lands, with the following additions:

Aircraft landings would be allowed within the RNAs, with the following provisions: No clearing of vegetation would be allowed without a permit from the Authorized Officer.

A permit or approved Plan of Operations would be required for all OHV use.

In areas with a Closed OHV designation (Research Natural Areas) subject to reasonable regulations, a free permit may be issued for access via snowmobiles for traditional activities and for travel to and from villages and homesites (ANILCA Sec. 1110). Similarly, federally Qualified Subsistence Users, subject to reasonable regulations and with a free permit, can use snowmobiles or other means of surface transportation traditionally employed for subsistence purposes (ANILCA Sec. 811) in areas with use limitations for casual users. Free permits may be obtained in person, by mail, and by phone from the BLM Fairbanks District Office and other appropriate locations.

**RATIONALE:** The federal government established a system of Research Natural Areas (RNAs) in 1927. RNAs are tracts of federal land and water established and managed for the primary purpose of research and education (43 CFR 8223.0-1). RNAs were selected to contain examples of significant natural ecosystems, areas suitable for ecological study, and rare species of plants and animals. Federal and state agencies have cooperated in Alaska since 1973 in selecting, documenting, and describing RNAs.

Four RNAs were designated in the planning area in 1986 (BLM 1986a and 1986b). The RNAs were designated to provide areas where natural ecosystems and processes are undisturbed so that they can be studied and understood, and to provide an undisturbed area for comparison with other areas so that effects of management and use can be assessed. The principle of maintaining reference conditions for scientific comparison is basic to the purposes of the system of RNAs.

Motorized vehicle access in the RNAs, including snowmobile use in winter, has the potential to damage vegetation, geologic structures, and soils. Any such disturbance has the potential to reduce the value of the area for future research by altering natural conditions. Although specific natural features were identified prior to designation and in reports for each RNA, other features could be equally valuable in future research. In other words, it is not possible now to identify what resources will be most valuable later for scientific study.

Although snow cover and frozen ground is considered adequate to protect vegetation and soils from snowmobiles in most areas, effects on vegetation do often occur from such use. Shrubs and small trees near or above the snow surface can be damaged and broken. The spinning of a snowmobile track can quickly remove considerable snow cover, especially high-power machines with paddle tracks. On steep slopes (typical in many of the RNAs), high snow depths may be required to avoid impacting low vegetation and ground cover. Repeated travel on trails can pack snowcover, decreasing insulation value of the snow, and in some places cause subsurface water flow to occur on the surface and “glaciating” to occur. The later melt of this ice in spring can impact vegetation growth and change vegetation type.

Title VIII of ANILCA protects access to public lands by subsistence users via motorboat, snowmobile, and other means of surface transportation traditionally employed by local residents and subject to reasonable regulations. Title XI of ANILCA allows for use of snowmobiles, motorboats, and airplanes for traditional activities and travel to and from villages and homesites within WSRs, the Steese National Conservation Area and the White Mountains NRA, subject to reasonable regulation.

#### Travel Management Prescriptions for the Semi-Primitive RMZ

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

**RATIONALE:** Except for the 15 horsepower limitation on motorboats launching at Nome Creek, use of motorboats is not restricted on Beaver Creek. This is a means of protecting the Semi-Primitive setting while still allowing for ANILCA protected access into inholdings.

#### Travel Management Prescriptions for the Backcountry RMZ

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

#### Travel Management Prescriptions for the Middlecountry RMZ

Same as Management Common to All Lands, with the following additions:

ATVs 50" width and less, and 1,000 pounds curb weight and less would be allowed (May 1 through October 14 except for Wickersham Creek Trail). Wickersham Creek Trail from Mile 28 Elliott Highway to its intersection with 23.5 mile trail would be open to the summer use of ATVs from June 1 through October 14. Summer use is delayed to protect costly improvements to trail tread from rutting and erosion, and allow the ground to thaw. The use of motorized travel, except snowmobiles, ends October 14, unless posted otherwise, so as not to impact winter trail grooming activities. Cross-country travel by ATV would be allowed except on the Summit and Ski Loop trails, and within the Wickersham Creek Closed Area.

UTVs 64" width and less, and 1,500 pounds curb weight or less, would be allowed on designated trails only. Designated motorized trails include (Map 55):

1. Quartz Creek Trail from Nome Creek Road to Quartz Creek.
2. Wickersham Creek Trail from Mile 28 Elliott Highway to the intersection with Trail Creek Trail.
3. Trail Creek Trail from the intersection with Wickersham Creek Trail to Lee's Cabin.
4. Mile 23.5 Elliott Highway to intersection with Wickersham Creek Trail.
5. Trail Creek Trail from Lee's Cabin to Crowberry Cabin.
6. McKay Creek Trail from the White Mountains NRA boundary to Beaver Creek WSR Corridor.
7. White Mountains Boundary Trail from McKay Creek Trail west along boundary approximately 11 miles.
8. Moose Creek Ridge Trail from Nome Creek Road to top of Ridge, then east to Quartz Creek Trail and west along ridge to Moose Creek.
9. Globe Peak Trail from Globe Peak to intersection with Big Bend Trail.
10. Big Bend Trail from Colorado Creek Cabin to Beaver Creek WSR Corridor.
11. Colorado Creek Trail from Colorado Creek cabin, west to White Mountains NRA boundary.
12. Ridge Trail from Colorado Creek Trail to VABM Beaver.
13. Portion of Haystack Mountain access on BLM-managed lands.
14. Little Champion Creek extension.

Additional trails could be designated in the future once a trail is improved and sustainable for this use.

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

#### Travel Management Prescriptions for the Nome Creek Frontcountry RMZ

Same as Management Common to All Lands, with the following additions:

The Table Top Mountain Trail, Two-Step Louis Trail and Fishing Trail inside the Cripple Creek Campground would be limited to non-motorized use only.

ATVs 50" width and less, and 1,000 pounds curb weight and less would be allowed on designated trails only (May 1 through October 14). Travel off of designated trails allowed only to retrieve legally harvested game. Designated motorized trails include (Map 55):

1. Moose Creek Ridge Trail from Nome Creek Road to top of Ridge, then east to Quartz Creek Trail and west along ridge to Moose Creek.
2. Bear Creek Trail from Nome Creek Road to Richards Cabin.
3. Quartz Creek Trail from Nome Creek Road to Quartz Creek.
4. Lower Nome Creek Trail from McKay Creek Trail intersection to Nome Creek Road.

UTVs would be allowed on designated trails only (May 1 through October 14). No game retrieval by UTVs would be allowed off of the designated trail. Designated motorized trails for UTVs include (Map 55):

1. Moose Creek Ridge Trail from Nome Creek Road to top of Ridge, then east to Quartz Creek Trail and west along ridge to Moose Creek.
2. Quartz Creek Trail from Nome Creek Road to Quartz Creek.

Additional trails could be added to the designated trail system as they are designed and constructed in a sustainable fashion.

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

The management intent for the Nome Creek tailings area is to continue to allow access and recreation opportunities within the disturbed, gravel area. The tailings area would be classified as a Limited Area Designation. The use of licensed, highway vehicles (including, but not limited to trucks and motorhomes) and OHVs weighing 1,500 pounds curb weight and less, and 64" width and less would be allowed. Travel off of the disturbed rock tailings by motorized means would not be allowed. Travel by motorized vehicle up or down Nome Creek or its tributaries would not be allowed. Motorized users may cross Nome Creek or its tributaries at right angles only.

#### Travel Management Prescriptions for the Wickersham Dome-Fred Blixt Frontcountry RMZ

Same as Management Common to All Lands, with the following additions:

The Ski Loop and Summit trails would be limited to non-motorized use only.

ATVs 50" width and less, and 1,000 pounds curb weight and less would be allowed (May 1 through October 14) except for Wickersham Creek Trail. Wickersham Creek Trail from Mile 28 Elliott Highway to its intersection with 23.5 mile trail would be open to the summer use of ATVs from June 1 through October 14. Summer use is delayed to protect costly improvements to trail tread from rutting and erosion, and allow the ground to thaw. The use of motorized travel, except snowmobiles, ends October 14, unless posted otherwise, so as not to impact winter trail grooming activities. Cross-country travel would be allowed except within the Wickersham Creek Closed Area.

UTVs 64" width and less, and 1,500 pounds curb weight or less, would be allowed on designated trails only (Same seasonal restrictions apply to Wickersham Creek Trail as above). Designated motorized trails include (Map 55):

1. Wickersham Creek Trail from Mile 28 Elliott Highway to the intersection with Trail Creek Trail.
2. Trail Creek Trail from the intersection with Wickersham Creek Trail to Lee's Cabin.
3. Mile 23.5 Elliott Highway to intersection with Wickersham Creek Trail.

Additional trails could be added to the designated trail system as they are designed and constructed in a sustainable fashion.

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

A permit or approved Plan of Operations would be required for all other OHV use.

#### Travel Management Prescriptions for Other BLM lands

Same as Management Common to All Lands, with the following additions:

Cross-country winter use (October 15 through April 30) of snowmobiles weighing 1,000 pounds curb weight and less would be allowed.

Summer use (May 1 through October 14) of OHVs weighing 1,500 pounds curb weight and less (cross-country travel allowed except where this use may interfere with active mining operations).

A permit or approved Plan of Operations would be required for all other OHV uses.

**RATIONALE:** Limiting the use of OHVs by weight, seasonal closure, and/or to designated routes are nationally accepted methods for protecting resources from damage by OHV use. The White Mountains NRA is a fragile landscape with seasonally frozen ground and permafrost making summer use of OHVs difficult. Traveling on ice-rich permafrost areas causes thawing, ground degradation and vegetation damage. Limiting the use of OHVs by weight, seasonal closure, or to designated routes, would help maintain the appropriate recreational setting, reduce impacts to soil, water, vegetation, fish, and wildlife, reduce potential for damage to maintained trails, and would help protect the NRA's scenic, scientific, cultural, and wildlife values. Allowing for cross-country travel by ATV in the Middlecountry Zone would increase impacts to natural resources but would provide additional opportunity for motorized recreation, consistent with recreation opportunity settings.

The Wild and Scenic Rivers Act states that rivers classified as "wild" are generally inaccessible except by trail, and are to represent vestiges of primitive America (Wild and Scenic Rivers Act, Section 2). Beaver Creek WSR has been managed for its wild, natural character as a remote, float-boating experience, focused on a non-motorized recreation experience for the past 30 years since its designation and classification as a "wild" river. Beaver Creek has outstanding remarkable scenic, recreational, geologic, fish and fish habitat, and wildlife values. Prohibiting the use of hovercraft, airboats, and personal watercraft would protect and enhance these outstandingly remarkable values. Additionally it would reduce disturbance of sensitive wildlife species such as nesting peregrine falcons and Dall sheep.

Airboats, hovercraft and personal watercraft generate noise levels which are disruptive to some recreationists and would diminish the Semi-Primitive experience managed for and expected by

those recreationists on a “wild” river. These types of use are not considered compatible with the values for which the “wild” river is to be managed.

Nome Creek is generally too narrow for two-way traffic. Allowing boats capable of traveling upstream on Nome Creek may pose a safety risk for float-boaters that mainly travel downstream.

#### **2.10.2.3.2.7. Withdrawals**

##### DECISIONS:

Same as Alternative B, except for the following:

Revoke that portion of PLO 4167 on Perhaps Creek (200 acres) and make it available for conveyance to the State of Alaska (FM., T.5N., R.5E., Section 17, SW ¼ ; Section 20, N ½ N ½ NW ¼).

Approximately 451,000 acres in the Middlecountry RMZ would be open to the mineral leasing laws.

#### **2.10.2.3.3. Special Designations**

##### DECISIONS:

Management of RNAs and WSRs would be the same as Alternative C. ORVs would be designated for Beaver Creek. No rivers would be recommended suitable for designation under the Wild and Scenic Rivers Act

RATIONALE: ANILCA closed the White Mountains NRA to the location of new mining claims and in all alternatives of this EIS, the Fossil Creek area would be closed to mineral leasing and OHV use would be limited to the winter. These decisions would protect the values of Fossil Creek. There is no known public or state support for designating Fossil Creek. For these reasons, Fossil Creek has been determined to be not suitable for designation under Alternative D.

#### **2.10.2.4. Alternative E (Proposed RMP): White Mountains Subunit**

##### **2.10.2.4.1. Resources**

###### **2.10.2.4.1.1. Cave and Karst Resources**

GOAL: Manage significant cave and karst systems to protect and maintain their resource, educational, scientific, and recreational values.

##### DECISIONS:

Manage Bison Bone Cave (AK-029-001), Cave #AK-029-002, and Cave #AK-029-003 as significant caves.

Management objective: Manage significant caves in the White Mountains NRA to preserve their scientific integrity.

Management objective: If needed to prevent resource damage, develop hiking trails that allow for recreational use while preserving scientific integrity of cave and karst resources.

Setting Prescription: Primitive

Administrative designation: All three caves are located in the Limestone Jags Research Natural Area. No additional designation is recommended.

#### **2.10.2.4.1.2. Cultural Resources**

DECISIONS:

Same as Alternative B.

#### **2.10.2.4.1.3. Fish and Aquatic Species**

DECISION:

In addition to the decisions Common To All Subunits listed in section 2.6.2.3, Fish and Aquatic Species, the following decisions would apply under Alternative E:

The following watersheds would be managed as Riparian Conservation Areas (Map 8). These are the same as Alternative B.

1. Bear Creek (HUC # 190404021803)
2. Beaver Creek (HUC # 190404022104)
3. Beaver Creek (HUC # 190404022109)
4. Beaver Creek (HUC # 190404022208)
5. Deadwood Creek-Victoria Creek (HUC # 190404022304)
6. Headwaters Victoria Creek (HUC # 190404022301)
7. Montana Creek-South Beaver Creek (HUC # 190404022206)
8. Ophir Creek (HUC # 190404022003)
9. Outlet Victoria Creek (HUC # 190404022305)
10. South Beaver Creek (HUC # 190404022207)
11. South Beaver Creek (HUC # 190404022202)
12. Victoria Mountain-Beaver Creek (HUC # 190404022406)
13. Victoria Creek (HUC # 190404022303)
14. Yellow Creek- Beaver Creek (HUC # 190404022408)

The Sumner Creek-Nome Creek watershed (HUC# 190404022004) would be a High Priority Restoration Watershed and emphasized for active restoration.

Complete watershed assessments Section I.5, "Watershed Assessment Process" as necessary for management.

#### **2.10.2.4.1.4. Visual Resources**

Proposed VRM classes for Alternative E are displayed on Map 23. Recreation Management Zones (RMZs) are displayed on Map 56.

DECISIONS:

Management of VRM Class I is to preserve the existing characteristics of the landscape, but allows for limited management activities where changes should be very low and must not attract attention of the casual observer.

Within VRM Class II areas, developments would be designed using materials that blend with the surrounding landscape and resemble landscape characteristics of line, form, color and texture with minor changes to landform and vegetation.

The objective for VRM class IV is to provide for management activities that may be visible within the view shed or be a major focus of viewer's attention.

<b>Alternative E Visual Resource Management Allocations for the White Mountain Subunit (Maps 23 and 56)</b>			
<b>Area</b>	<b>RSC Class</b>	<b>VRM Class</b>	<b>Acres</b>
The Serpentine Slide, Mount Prindle, and Limestone Jags RNAs, and White Mountains Spine Area	Primitive	I	27,000
Beaver Creek WSR/RMZ	Semi-Primitive	I	69,000
White Mountains Highlands RMZ	Semi-Primitive	II	102,000
Cache Mountain RMZ	Backcountry	II	382,000
White Mountains Foothills	Middlecountry	II	397,000
Nome Creek RMZ	Frontcountry	IV	31,000
Wickersham/Fred Blixt RMZ	Frontcountry	IV	8,000
Remaining BLM lands	N/A	IV	4,000

#### **2.10.2.4.1.5. Wetlands and Floodplains**

In addition to the Water Resource decisions listed as Common To All Subunits in section 2.6.2.10, the following decisions would apply under Alternative E:

##### **DECISIONS:**

Within five years of signing the ROD or by management direction, undertake development of a step-down Watershed Management Plan (WMP) for the Beaver Creek WSR watershed. Watershed planning helps address water quality problems in a holistic manner by fully assessing the potential contributing causes and sources of pollution including uplands, then prioritizing restoration and protection strategies to address these problems. Site specific soil and water management determinations (e.g., watershed, floodplain-wetland, or riparian rehabilitation techniques, monitoring techniques and schedule, and the design and placement of improvements) will be developed in the interdisciplinary Watershed Management Planning phase for resource programs. The "Watershed Assessment Matrix" (Table I.1), depicting range of desired conditions for aquatic habitats would be incorporated in the Watershed Management Plan as well as other science-based watershed assessment tools. Relevant new science and new empirical water resource data would also be incorporated in the WMP. Additional SOPs and Fluid Mineral Leasing Stipulations for land uses may be developed through the step-down watershed management plan.

The upper section of Nome Creek known as "the maze", upstream of the confluence with Moose Creek (T 6 N, R 4 E, Section 24) and downstream of the Nome Creek Bridge (T 6 N, R 5 E, Section 15) would be preserved in its current state because of its unique character and historical significance. Excavation of gravels from the "maze" or modifications to the stream channel would be restricted.

Downstream of the Nome Creek Bridge (T. 6N., R. 5E., Section 21, NW 1/4) 3.45 acres of wetland/shallow pond area would be constructed in consultation with the U.S. Army Corps of

Engineers (USACE), as compensatory mitigation acreage for the irretrievable loss of 1.71 acres of wetlands during the BLM 2010 road improvement-culvert replacement project for East and West Twin Creek crossings, Nome Creek Road. Additional excavation of road materials from this area would be restricted. By management direction and in consultation with USACE an alternate wetland compensatory mitigation site within Nome Creek Valley may be selected.

Restoration and enhancement of floodplain areas should be approached through management of the entire watershed rather than just focusing on a narrow floodplain-riparian zone. Prior to initiating restoration measures, a determination must be made of site potential and the primary causes of a degraded ecological condition. The natural recovery processes operating in an area should be evaluated prior to considering structural measures. While stream systems and watersheds are undergoing major geomorphic or hydrological adjustment, structural measures should not be initiated. Consider implementing structural measures only if (1) proper management prescriptions will not achieve management objectives within the desired time frame, (2) costs incurred to achieve accelerated rehabilitation are justified by the benefits to be achieved, and (3) natural recovery has not progressed to a point that will stabilize stream banks and/or wetlands basins.

In setting reclamation priorities for floodplain-wetland areas, consider the extent to which the floodplain-wetland may deteriorate if restoration or improvement action is not immediately implemented. Floodplain-wetland areas that may suffer substantial further degradation and have high potential for improvement should be given top priority. Those that have been degraded but appear stable may be given lower priority for restoration and improvement. Other factors, such as special status species, water quality, competing water uses, fisheries, and recreation values should also be considered when establishing priorities.

#### **2.10.2.4.1.6. Wildlife**

In addition to the goals and decisions listed as Common To All Subunits in section 2.6.2.13, the following would apply under Alternative E:

##### **GOAL:**

Priority will be given to maintaining the value of crucial caribou and Dall sheep habitat and ungulate mineral licks.

##### **DECISIONS:**

Same as Alternative B except for the following changes.

Domestic sheep, goats, and camelids (including alpaca and llama) are prohibited in Dall sheep habitat and adjacent lands.

Delineate approximately 417,000 acres as crucial caribou and Dall sheep habitat (map 67) to protect caribou calving and postcalving habitat, Dall sheep habitat, and ungulate mineral licks. Management of these areas will give priority to maintaining habitat effectiveness—the ability of habitats to support Dall sheep and caribou—including the following management:

Ungulate mineral licks: Within a distance of one mile of designated ungulate mineral licks, limit all permitted uses and development of facilities for permitted uses, from May 10 through August 31 to activities which would not reduce sheep use of licks.

Limit density of trails within crucial caribou and Dall sheep habitat to protect values for which they were designated.

Within crucial caribou and Dall sheep habitat cross-country winter use of vehicles weighing more than 1,500 pounds curb weight will not be allowed without a permit. Cross-country Summer OHV use will not be allowed without a permit. Summer OHV travel on BLM approved routes may be allowed where it is

compatible with maintenance of caribou and Dall sheep habitat effectiveness. These approved routes will be determined through travel management planning.

Winter motorized use in Dall sheep habitat would be monitored and, if use begins to approach a level which may result in altered distribution of Dall sheep, such use may be restricted in the future (through alteration of maintained trails or, if necessary, limited closures, e.g., limited areas and/or time periods).

Additional management prescriptions in crucial caribou and Dall sheep habitat for activities requiring a permit from the BLM:

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.

Permanent roads will generally not be allowed, although long-term temporary roads may be, and roads will generally not be open to the public. Decisions subject to the ANILCA Title XI process in the National Recreation area will be made on a case-by-case basis pursuant to Title XI. 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 crucial caribou and Dall sheep habitat 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 above ground level, 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.

The footprint of facilities will be minimized. Permittees may be required to co-locate facilities and access to minimize habitat loss.

Reclamation and revegetation of disturbed areas will be required to meet performance standards set in site-specific reclamation plans with a goal of restoration of caribou and/or Dall sheep habitat, such as a required plant cover (percent) within a certain number of years before a performance bond is released.

#### **2.10.2.4.1.7. Wilderness Characteristics**

OBJECTIVE:

Reduce impacts of multiple-use activities to maintain naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values on 777,000 acres.

#### DECISIONS:

The BLM would manage 243,000 acres for other multiple uses as a priority over protecting wilderness characteristics.

The BLM would manage 777,000 acres to emphasize other resources values and multiple uses while applying management restrictions to reduce impacts to wilderness characteristics (Map 77). These lands are located within the White Mountains NRA and include Beaver Creek WSR, and Primitive, Semi-Primitive, Backcountry, and riparian conservation areas in Middlecountry recreation management zones. Within the White Mountains NRA recreation would be a priority use consistent with section 1312(a) of ANILCA.

The BLM would not manage any lands to protect wilderness characteristics as a priority over other resource values and multiple uses.

The types of activities/projects that could potentially affect wilderness characteristics would require further NEPA analysis. The BLM will monitor wilderness characteristics through this NEPA process. In addition, on-the-ground or aerial monitoring will be done in conjunction with monitoring for other resources.

**RATIONALE:** Under BLM Manual 6320 the BLM can manage areas to emphasize other resource values and multiple uses while applying management restrictions to protect wilderness characteristics. Given the large size of most of these areas in the White Mountains Subunit many land uses could occur that would not impact naturalness, solitude, or primitive recreation on a landscape scale, or the size of the units. Management for other resource drivers such as recreation, wild and scenic rivers, and wildlife are complementary to maintaining wilderness characteristics. Under Alternative E, management decisions to protect caribou and Dall sheep habitat, riparian habitat, and the Beaver Creek WSR would result in maintenance of wilderness characteristics in these areas. Additionally, when the RMP is implemented uses proposed in these areas would be further analyzed through the NEPA process for impacts to size, naturalness and solitude and stipulated mitigation measures would be applied where needed to minimize impacts.

## **2.10.2.4.2. Resource Uses**

### **2.10.2.4.2.1. Forest and Woodland Products**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.1, the following decisions would apply under Alternative E:

#### DECISIONS:

Personal use of timber would be allowed on all lands.

Commercial timber salvage sales would be allowed on all lands.

Commercial timber sales (large and small) would be allowed on all lands except within the Beaver Creek WSR Corridor, RNAs, and crucial caribou and Dall sheep habitat.

Commercial use of forest products would be considered on all lands.

#### **2.10.2.4.2.2. Land Tenure**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.2, the following decisions would apply under Alternative E. The criteria for land tenure zones is described in Appendix G, *Land Tenure*.

Retain lands within the White Mountains SRMA (includes the National Recreation Area, Beaver Creek WSR Corridor, Wickersham Dome, Cripple Creek campground, and U.S. Creek Wayside.)

Consider acquisition of private land inholdings from willing sellers within Zone 1 areas, such as the White Mountains NRA.

If federal mining claims outside of the White Mountains SRMA become null and void, and are not conveyed to the State, consider these lands for disposal or exchange.

Recommend modification of PLO 4176 Recreation site withdrawal (505 acres) to make the Perhaps Creek Parcel available for state selection. Recommend retaining that portion of the withdrawal that covers U.S. Creek, and Cripple Creek.

#### **2.10.2.4.2.3. Land Use Authorizations**

##### **DECISIONS:**

In addition to the decisions listed as Common To All Subunits in section 2.6.3.3, the following decision would apply under Alternative E:

Obtain a right-of-way from the State of Alaska for the portion of Colorado Creek trail from the Elliott Highway to the White Mountains NRA.

#### **2.10.2.4.2.4. Minerals**

Decisions for minerals management are broken down into four sections: Fluid Leasable, Solid Leasable, Locatable, and Salable Minerals. In addition to the decisions listed as Common To All Subunits in section 2.6.3.5, the decisions in the following mineral sections would apply under Alternative E.

##### **2.10.2.4.2.4.1. Fluid Leasable Minerals**

Fluid leasable minerals are defined by the Mineral Leasing Act and include oil, gas, coalbed natural gas, and geothermal resources.

##### **DECISIONS:**

The entire subunit, approximately 1,016,000 acres would be closed to fluid leasable minerals (Map 38).

Remaining lands in the subunit (4,000 acres in the Livengood area) would be recommended open to mineral leasing, subject to Standard Lease Terms, Fluid Mineral Leasing Stipulations, and Standard Operating Procedures.

#### **2.10.2.4.2.4.2. Solid Leasable Minerals**

Solid leasable minerals are defined by the Mineral Leasing Act and include coal, oil shale, native asphalt, phosphate, sodium, potash, potassium, and sulfur.

##### **DECISIONS:**

The entire subunit, approximately 1,016,000 acres would be closed to solid leasable minerals (Map 38), including coal.

Remaining lands in the subunit (4,000 acres in the Livengood area) would be recommended open to mineral leasing, subject to Standard Lease Terms and Standard Operating Procedures.

As stated in section 2.6.3.5.2 Common to All Alternatives, coal leasing is deferred because the coal screening process (as identified by 43 CFR 3420.1-4) has not been completed in the planning area. A RMP amendment would be needed before coal leasing could occur. Only those BLM-managed public lands that have development potential may be identified as acceptable for further consideration for coal leasing.

#### **2.10.2.4.2.4.3. Locatable Minerals**

Locatable minerals are minerals for which the right to explore, develop, and extract mineral resources is established by the staking of mining claims, under the General Mining Law of 1872. Examples of locatable minerals include gold, silver copper, zinc, certain limestones, and gypsum.

##### **DECISIONS:**

Similar to Alternative B, the White Mountains NRA and adjacent lands at Wickersham Dome, Cripple Creek, Perhaps Creek, and U.S. Creek (1,016,000 acres) would be remain closed to locatable mineral entry (Map 38).

Remaining lands in the subunit (4,000 acres) would be recommended open to mineral entry (Livengood area).

#### **2.10.2.4.2.4.4. Salable Minerals**

Salable minerals, also called mineral materials, include sand, gravel, dirt, and rock.

##### **DECISIONS:**

The Beaver Creek WSR Corridor (69,000 acres) would be closed to salable minerals.

All remaining lands, 951,000 acres would be open to salable minerals.

#### **2.10.2.4.2.5. Recreation**

##### **OBJECTIVE:**

SRMA specific outcomes-focused objectives, proposed recreation setting characteristics and the management framework for each RMZ can be found in Appendix H.

#### DECISIONS:

In addition to those decisions listed as Common To All Subunits under section 2.6.3.6, the following decisions would apply under the White Mountains Subunit under Alternative E.

Designate 1,016,000 acres of lands including Beaver Creek WSR Corridor, the White Mountains NRA, and associated lands as the White Mountains SRMA (Map 56). The SRMA would include seven Recreation Management Zones (RMZs) listed in the table below.

#### Implementation level management action:

Trapping and placement of bait and wildlife lures (scents) for the purpose of trapping fur bearers would be prohibited within 25 feet of BLM-maintained trails. Trapping includes but is not limited to the use of marten pole sets, snares, conibear, or leg hold traps. These restrictions would not apply to sections of trail on land managed by the State of Alaska where the BLM maintains access to the White Mountains NRA.

**Table 2.24. White Mountain Recreation Management Zones, RSC Settings and OHV Designations, Alternative E**

Name	Acres	RSC Setting <sup>a b</sup>	OHV designation
Research Natural Areas	13,000	Primitive	LIMITED
White Mountains Spine Area	14,000	Primitive	LIMITED
White Mountain Highlands	102,000	Semi-Primitive	LIMITED
Beaver Creek Corridor	69,000	Semi-Primitive	LIMITED
Cache Mountain	382,000	Backcountry	LIMITED
White Mountain Foothills	397,000	Middlecountry	LIMITED
Nome Creek	31,000	Frontcountry	LIMITED
Wickersham Dome/Blixt Cabin	8,000	Frontcountry	LIMITED
Other BLM lands	4,000	N/A	LIMITED

<sup>a</sup>Table 2.5

<sup>b</sup>RSC are descriptive conditions describing management parameters at the implementation level. These are not land use planning decisions

#### **2.10.2.4.2.6. Travel Management:**

In addition to those decisions listed as Common To All Subunits in section 2.6.3.7, the following decisions would apply under Alternative E.

The table above describes the Recreation Management Zones in the White Mountains SRMA under Alternative E (Map 56).

#### DECISIONS:

A comprehensive travel management plan for the White Mountains Subunit will be deferred until the completion of the RMP. Once the Record of Decision is signed for the RMP, additional data would be collected and a comprehensive travel management plan would be developed using a public process, allowing for additional public and agency input. This process will include publishing a *Federal Register* Notice, public scoping meetings and if any closures are proposed, a

formal hearing to address the closure procedures under 43 CFR 36.11 (h) as well as limitations affecting ANILCA provisions listed in Title VIII and Title XI.

Interim management prescriptions until completion of the Travel Management Plan: Current management outlined in Alternative A, No Action Alternative, with the addition of the following:

1,000 pound curb weight and 50 inch width limitation for snowmobiles to replace 1,500 pound GVWR limitation in the White Mountains SRMA.

1,000 pound curb weight and 50 inch width limitation for summer ATVs to replace 1,500 pound GVWR limitation in the White Mountains SRMA.

Beaver Creek WSR: Use of motorboats, hovercraft, and airboats is allowed without specific authorization. Launching of boats in the Nome Creek Valley (Nome Creek and Ophir Creek) is restricted to 15hp or less.

Weight and width limitations for UTV's: 64 inches width and less, and 1,500 pounds curb weight or less.

Designated trails and areas for UTVs:

1. Wickersham Creek Trail from Mile 28 Elliott Highway to the intersection with Trail Creek Trail.
2. Trail Creek Trail from the intersection with Wickersham Creek Trail to Lee's Cabin.
3. Mile 23.5 Elliott Highway to intersection with Wickersham Creek Trail.
4. Nome Creek tailings area.
5. Quartz Creek Trail from Nome Creek to Quartz Creek.

Additional trails could be added to the designed trail system through the travel management plan.

The Limestone Jags, Serpentine Slide, and Mount Prindle RNAs include limitations on OHV use. The OHV area designation in these RNA would change from Closed to Limited in this alternative. The RNAs would be limited to winter OHV use only by snowmobiles 1,000 pounds or less in weight and 50 inches or less in width.

#### Limitations on Travel Management Planning:

The step-down travel management plan will be developed within 5 years of the Record of Decision. Wildlife management decisions will set sideboards on what can be considered in the travel management plan.

Wildlife management prescriptions include limitations on OHV use in crucial caribou and Dall sheep habitat (Map 67). These will be implemented through travel management planning. Cross-country summer OHV use will not be allowed without a permit, but summer OHV travel on BLM-approved routes may be allowed where it is compatible with caribou and Dall sheep habitat.

Wildlife decisions identified in Alternative E include management prescriptions for non-motorized travel. Domestic sheep, goats and camelids (including alpaca and llama) are prohibited in Dall sheep habitat and adjacent lands.

Rationale: Limiting the use of OHVs by weight, seasonal closure, and/or to existing routes or in some cases considering dispersed cross-country travel will help maintain the appropriate recreational setting, reduce impacts to stream beds, soil, water, vegetation, fish and wildlife;

scientific and cultural resources. The White Mountains NRA is a fragile landscape with seasonally frozen ground and permafrost making summer uses of OHVs difficult. Traveling on ice-rich permafrost areas causes thawing, ground degradation, and vegetation slump. Management tools seek to protect the trails from excessive erosion and rutting and protect the investment the BLM has made to improve the trails. These decisions will be analyzed in the travel management plan.

Weight limitation changes from pounds gross vehicle weight rating GVWR to curb weight allows for the same types and sizes of vehicles allowed under Alternative A. Curb weight is consistent with the generally allowed uses on adjacent State lands.

#### **2.10.2.4.2.7. Withdrawals**

##### **DECISIONS:**

In addition to the decisions listed as common to all subunits in section 2.6.3.8 Withdrawals, the following decisions would apply to Alternative E.

Recommend to the Secretary of the Interior that ANCSA 17(d)(1) withdrawals within the White Mountains NRA be revoked to remove duplicate withdrawals.

Recommend to the Secretary of the Interior that PLO 5150 be modified to withdraw approximately 12,800 acres from the mining laws, including metalliferous minerals, at Wickersham Dome (FM., T. 4N., R. 2W., that portion of the township north and east of the Elliott Highway), for the purposes of maintaining recreation setting prescriptions and BLM facilities associated with the White Mountains NRA.

Modify PLO 4176, Recreation site withdrawal to allow for state selection of the Perhaps Creek parcel. The withdrawn lands are located at Perhaps Creek, U.S. Creek, and Cripple Creek, all of which are within FM., T.5N., R.5E.

Recommend to the Secretary of the Interior that ANCSA 17(d)(1) withdrawals be revoked to open approximately 4,000 acres outside the White Mountains NRA to locatable mineral entry and mineral leasing laws in the areas shown on Map 93.

**RATIONALE:** Removal of duplicate withdrawals will simplify and clean up the public land records for this area. Wickersham Dome provides access to the White Mountains NRA cabins and trails network and supports BLM facilities. Retaining a withdrawal on this area would help meet requirements under ANILCA to manage the NRA for recreational purposes. Retaining portions of PLO 4176 would protect Cripple Creek camp ground and U.S. Creek Wayside. The Perhaps Creek parcel is not developed for recreational use and should be made available for state selection.

#### **2.10.2.4.3. Special Designations**

##### **2.10.2.4.3.1. Areas of Critical Environmental Concern**

##### **DECISIONS:**

No ACECs would be designated.

### 2.10.2.4.3.2. Research Natural Areas

#### DECISIONS:

Three existing RNAs would be maintained: the Limestone Jags (5,170 acres), Serpentine Slide (4,270 acres), and Mount Prindle (3,150 acres) RNAs.

The RNAs would be limited to winter OHV use only; summer use of OHVs is prohibited. Natural processes, including wildland fire, would be allowed to continue with as little interference as possible. Hiking, hunting, and nature appreciation would be allowed. The RNAs would remain closed to mineral entry and mineral leasing. Primitive camping and hiking trails would be allowed in the RNAs. No surface-disturbing activities allowed except BLM-authorized research projects and primitive hiking trails.

### 2.10.2.4.3.3. Wild and Scenic Rivers

#### DECISIONS:

Decisions listed as Common To All Subunits in section 2.6.4.1 would apply.

Under Alternative E, no rivers would be recommended suitable for designation under the Wild and Scenic Rivers Act.

RATIONALE: ANILCA closed the White Mountains NRA to the location of new mining claims and in all alternatives of this EIS, the Fossil Creek area would be closed to mineral leasing and OHV use would be limited to the winter. These decisions would protect the values of Fossil Creek. There is not widespread public or state support for designating Fossil Creek. For these reasons, Fossil Creek has been determined to be not suitable for designation under Alternatives C, D, and E.

## 2.10.3. Comparison of Alternatives: White Mountains Subunit

Table 2.25, “White Mountains Subunit: Summary of Alternatives” provides a **comparison of major allocation decisions and decisions that vary by action alternative (B, C, D, and E)**. There are additional decisions that are common to all action alternatives that are not displayed in these tables. Decisions may be paraphrased to save space. All acres are approximate and rounded to the nearest 1,000 acres. For the full text of all decisions, see section 2.6 Management Common to All Subunits and All Action Alternatives, section 2.10 White Mountains Subunit, Appendix A, *Standard Operating Procedures and Fluid Mineral Leasing Stipulations* and Appendix H, *Recreation Management Zones*.

**Table 2.25. White Mountains Subunit: Summary of Alternatives**

<b>Program or Resource</b>	<b>Alternative A (No Action)</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>	<b>Alternative E (Proposed RMP)</b>
<b>Fish and Aquatic Species</b>	Riparian Conservation Areas (RCAs) not addressed.	Manage 14 watersheds (Map 8) as RCAs.	Manage 13 watersheds (Map 9) as RCAs.	Manage eight watersheds (Map 10) as RCAs.	Same as Alternative B.
	Ongoing restoration in Nome Creek.	Nome Creek is a High Priority Restoration Watershed.			
	Watershed assessments not addressed	Complete watershed assessments as necessary for management.			
<b>Visual Resources</b>	Assign all BLM-managed lands to VRM Classes. Manage according to the VRM class objectives described in section 2.6.2.9. Proposed VRM Classes are displayed on Maps 20, 21, 22 and 23.				
	69,000 acres VRM Class I (Beaver Creek WSR Corridor)	96,000 acres VRM Class I (Beaver Creek WSR Corridor, RNAs, and Primitive RMZ).		82,000 acres VRM Class I (Beaver Creek WSR and RNAs).	Same as Alternatives B and C
	507,000 acres VRM Class II (RNAs, Primitive and parts of the Semi-Primitive Management units, view shed of Beaver Creek)	553,000 acres VRM Class II (Semi-Primitive and Backcountry RMZs).	217,000 acres VRM Class II (Semi-Primitive and part of Backcountry RMZs).	123,000 acres VRM Class II (Semi-Primitive and part of Backcountry RMZs).	882,000 acres VRM class II (Semi-Primitive, Backcountry, and middlecountry RMZ)
	428,000 acres VRM Class III (remainder Semi-Primitive Management Unit)	367,000 acres as VRM Class III (Middlecountry and Frontcountry RMZ).	267,000 acres as VRM Class III (remaining Backcountry RMZ).	321,000 acres VRM Class III (Backcountry RMZ).	None
	4,000 acres unclassified	4,000 acres VRM Class IV (other BLM lands).	440,000 acres VRM Class IV (Middle-, and Frontcountry RMZs and other BLM lands).	494,000 acres VRM Class IV (Middle-, and Frontcountry RMZs and other BLM lands).	42,000 acres VRM class IV (Frontcountry RMZ and other BLM lands)

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Wetlands and Floodplains</b>	Watershed management planning not addressed	Within five years of signing the ROD, or by management direction, undertake development of step-down Watershed Management Plan for the Beaver Creek WSR watershed.			
	Decisions specific to the “Maze” and wetland mitigation acres are not addressed.				Protect a 3-mile section of Nome Creek known as the “Maze” for historic value. 3.45 acres of Nome Creek wetland area/ponds preserved as wetland mitigation acres as compensation for ir retrievable loss of wetlands during 2010 road improvements.
<b>Wilderness Characteristics</b>	<b>Areas managed to protect wilderness characteristics as a priority over other resource values and multiple uses</b>				
	wilderness characteristics not addressed.	None	None	None	None
	<b>Acres and Areas managed to emphasize other resource values and multiple uses while applying management restrictions to reduce impacts to wilderness characteristics</b>				
	wilderness characteristics not addressed.	509,000 acres (50%). Primitive and Semi-Primitive RMZ (Map 74)	312,000 acres (31%). Primitive and Semi-Primitive RMZ and part of Cache Mountain. Backcountry RMZ (Map 75)	205,000 acres (20%). Primitive and Semi-Primitive RMZ and part of Cache Mountain. Backcountry RMZ (Map 76)	777,000 acres (76%). Primitive, Semi-Primitive, and Backcountry, and RCAs in middlecountry RMZs (Map 77)
	<b>Acres managed to emphasize other resource values and multiple uses as a priority over protecting wilderness characteristics</b>				
wilderness characteristics not addressed.	511,000 acres (50%)	708,000 acres (69%)	815,000 acres (80%)	243,000 acres (24%)	
<b>Wildlife</b>	Not addressed. No limits on types of pack animals for either casual or permitted use.	The use of domestic goats, alpacas, llamas, and other similar species would not be allowed in conjunction with BLM-authorized activities in Dall sheep habitat.			
		Domestic sheep, goats, and camelids (including alpaca & llama) are not allowed in Dall sheep habitat.	No prohibition on the use of domestic sheep, goats, and camelids (including alpaca & llama) for casual use.		Domestic sheep, goats, and camelids (including alpaca & llama) are not allowed in Dall sheep habitat.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Forest and Woodland Products</b>	Personal use of timber: allowed on all lands (1,020,000 acres).	Personal use of timber: allowed in non SRMA Lands (4,000 acres); not allowed within the White Mountains SRMA (1,016,000 acres).	Personal use of timber: allowed on 938,000 acres; not allowed within the Beaver Creek WSR Corridor and RNAs (82,000 acres).	Same as Alternative A.	Personal use of timber would be considered on all lands (1,020,000 acres).
	No commercial timber harvest is allowed within the White Mountains NRA (1,000,000 acres). Not prohibited outside the NRA.	Commercial timber salvage sales: considered in non SRMA Lands (4,000 acres); not allowed within the White Mountains SRMA (1,016,000 acres).	Commercial timber salvage sales considered on all lands (1,020,000 acres).		
<b>Forest and Woodland Products</b>	No commercial timber harvest is allowed within the White Mountains NRA (1,000,000 acres). Not prohibited outside the NRA.	Commercial timber sales: considered on other BLM lands (4,000 acres); not allowed within the White Mountains SRMA (1,016,000 acres).	Commercial timber sales: considered on 938,000 acres. Not allowed within the Beaver Creek WSR Corridor and RNAs (82,000 acres).	Commercial timber sales: Considered on 557,000 acres. Not allowed within the Beaver Creek WSR Corridor, RNAs, and crucial caribou and Dall sheep habitat (463,000 acres).	
	Forest products are reserved for local use only within the White Mountains NRA. BLM could consider commercial use of these products outside the NRA.	Allow personal use of forest products on all lands (1,020,000 acres). Commercial use of forest products would not be allowed within the White Mountains SRMA (1,016,000 acres). On remaining lands (4,000 acres) such uses would be considered.	Commercial use of forest products would not be allowed within the RNAs (13,000 acres). On remaining lands (1,003,000 acres) such uses would be considered.	Commercial use of forest products would be considered on all lands (1,020,000 acres).	
<b>Land Tenure</b>	Retain the White Mountains NRA, Beaver Creek, Wickersham Dome, Cripple Creek, U.S. Creek, and Perhaps Creek in federal ownership.			Same as Alternatives A-C except Perhaps Creek would be available for state selection.	
	Consider acquisition of private inholdings within the White Mountains NRA.				
	Not addressed.	If federal mining claims outside of the White Mountains SRMA (near Livengood) become null and void, and are not conveyed to the State, consider these lands for disposal or exchange.			
<b>Land Use Authorizations</b>	Two designated transportation corridors (Map 19).	Retain one transportation corridor extending from U.S. Creek Road to Nome Creek (Map 57).	None of the existing transportation corridors would be retained and no new corridors would be designated.		

<b>Program or Resource</b>	<b>Alternative A (No Action)</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>	<b>Alternative E (Proposed RMP)</b>
<b>Land Use Authorizations</b>	No ROW avoidance areas.	The RNAs, White Mountains ACEC, and Beaver Creek WSR Corridor would be ROW avoidance areas.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
<b>Fluid Leasable Minerals</b> (e.g., oil and gas)	The White Mountains Subunit (1,020,000 acres) closed to leasing by public land orders. 1986 RMP recommended opening 428,000 acres in the Semi-Primitive Motorized Management Unit, but decision was not implemented. (Map 48)	All BLM lands, 1,020,000 acres closed.	Same as Alternative B.	451,000 acres open with minor constraints; 569,000 acres closed.	4,000 acres open with standard lease terms and standard operating procedures; 1,016,000 closed.
<b>Solid Leasable Minerals</b>	The White Mountains Subunit (1,020,000 acres) closed to leasing by public land orders. 1986 RMP recommended opening 428,000 acres in the Semi-Primitive Motorized Management Unit, but decision was not implemented. (Map 48)	All BLM lands, 1,020,000 acres closed.	Same as Alternative B.	451,000 acres open; 569,000 acres closed.	4,000 acres open with standard lease terms and standard operating procedures; 1,016,000 closed.
Coal leasing is deferred because the coal screening process (43 CFR 3420.1-4) has not been completed. A RMP amendment would be needed before coal leasing could occur. Only those BLM-managed public lands that have development potential may be identified as acceptable for further consideration for coal leasing					
<b>Locatable Minerals</b> (e.g., gold)	The White Mountains Subunit (1,020,000 acres) closed to leasing by public land orders. 1986 RMP recommended opening 428,000 acres in the Semi-Primitive Motorized Management Unit, but decision was not implemented.	All BLM lands, 1,020,000 acres closed.	Same as Alternative B.	160,000 acres open to leasing: 149,000 acres for gold and 11,000 acres for rare earth metals.	Same as Alternative B.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Salable Minerals</b> (e.g., gravel)	1,020,000 acres open to disposal of sand, gravel, rock, and other saleable minerals if compatible with other provisions of the plan.	371,000 acres open to salable minerals; 649,000 acres closed.	951,000 acres open; 69,000 acres closed (Beaver Creek WSR Corridor).	1,020,000 acres are open; 0 acres closed.	Same as Alternative C.
<b>Recreation</b>	Plan does not identify the White Mountains as a SRMA, but it is managed as such.	Designate 1,016,000 acres as the White Mountains SRMA. Establish desired recreation setting character classes (Table 2.5, "Recreation Setting Character Matrix for the Eastern Interior Planning Area").			
	Four recreation management units: Primitive, Semi-Primitive Motorized, Wild and Scenic River, and Research Natural Areas (Map 48)	Establish seven RMZs (Appendix H and Map 53).	Establish seven RMZs (Appendix H and Map 54).	Establish six RMZs (Appendix H and Map 55).	Establish seven RMZs (Appendix H and Map 56)
<b>Travel Management</b>	OHV area designations: 4,000 acres undesignated; 13,000 acres Closed; 1,003,000 acres Limited.	OHV area designations: 13,000 acres closed (RNAs); 1,007,000 acres Limited (includes 4,000 acres near Livengood)	Same as Alternative B.	Same as Alternative B.	OHV area designations: 1,020,000 acres Limited
	13,000 acres (RNAs) closed to motorized OHV use yearlong.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Winter motorized use allowed under interim management.
<b>Travel Management</b>	563,000 acres (Primitive Management Unit and Beaver Creek) limited by season of use (no summer OHV use).	635,000 acres (Semi-Primitive, Backcountry, and White Mountains Spine RMZs) limited by season of use (no summer OHV use).	567,000 acres (Semi-Primitive, Backcountry, and White Mountains Spine RMZs) limited by season of use (no summer OHV use).	513,000 acres (Semi-Primitive and Backcountry RMZs) limited by season of use (no summer OHV use).	Interim Management: Same as A, except for: change from GWVR to curb weight; RNAs classified as LIMITED and open to winter snowmobile travel; designated trails for UTVs; allowance of airboats and hovercraft. A Travel Management Plan would be developed
	440,000 acres limited by weight (summer). Cross-country use allowed for vehicles 1,500 lbs. gross vehicle weight rating or less.	4,000 acres (other BLM lands) limited by weight (summer)	Same as Alternative B.	459,000 acres limited by weight (summer). Includes Middlecountry and Wickersham Dome Frontcountry. Cross-country use allowed except in	

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
				Wickersham Creek Closed Area.	within five years of the ROD.
<b>Travel Management</b>	0 acres limited to designated routes.	368,000 acres (Middlecountry and Frontcountry RMZs) limited to designated routes, weight and width (summer).	436,000 acres (Middlecountry and Frontcountry RMZs) limited to designated routes, weight and width (summer).	31,000 acres (Nome Creek Frontcountry RMZ) limited to designated routes, weight, and width (summer). UTVs limited to UTV designated trails all zones.	Interim Management: Same as A, except for designated trails for UTVs.
	Summer cross-country travel allowed limited by weight (1,500 lbs. gross vehicle weight)	Summer OHV use limited to 139 miles of trails (Maps 53 and 54).	Same as Alternative B.	Summer cross-country travel allowed in some zones.	Interim Management: Same as A, except for designated trails for UTVs. A Travel Management Plan would be developed within five years of the ROD.
	0 miles of trail open to UTV use.	Same as Alternative A.	27 miles trails open to UTV use.	112 miles trails open to UTV use. (Map 55).	27 miles of trails open to UTV use under interim management. Additional trails may be added by Travel Management Plan.
<b>Travel Management</b>	117 miles winter trails closed to summer use.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.	Interim same as A. Deferred to Travel Management Plan.
	1,003,000 acres limited by weight (winter).	1,008,000 acres limited by weight (winter).	Same as Alternative B.	Same as Alternative B.	Interim same as A. Deferred to Travel Management Plan.
	Airboats and hovercraft prohibited in White Mountains NRA.	Airboats, hovercraft, and personal watercraft would be prohibited in the White Mountains Special Recreation Management Area.			Airboats, hovercraft, and personal watercraft allowed under interim management.
	Motorboat use allowed without specific authorization consistent with ANILCA with the following reasonable regulation: Launching boats with motors exceeding 15 horsepower is prohibited in the Nome Creek Valley.				

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Withdrawals</b>	Recommend retaining PLO 4176 Recreation site withdrawals (505 acres).	Recommend retain PLO 4176, Recreation site withdrawal (505 acres); Perhaps Creek, U.S. Creek, and Cripple Creek. (FM. T.5N., R.5E.); Manage Perhaps Creek to provide a gravel source for maintenance or construction of recreation facilities.		Recommend modification of PLO 4176 withdrawal to make the Perhaps Creek Parcel available for state selection. Retain that portion of the withdrawal covering U.S. Creek and Cripple Creek.	
	Section 1312(b) of ANILCA withdraws the White Mountains NRA from state selection and location, entry under the U.S. mining laws.				
	The White Mountains NRA is withdrawn by ANCSA (PLO 5180)	Recommend partial revocation of PLO 5180 to remove overlapping withdrawals within the White Mountains NRA.			
	PLO 5150 allows for mining of metaliferous minerals.	Recommend modification of PLO 5150 on 12,800 acres at Wickersham Dome (outside the NRA) to withdraw these lands to mining of metaliferous minerals.			
	Modification of PLOs to allow for disposal not addressed	Recommend modification of PLOs as needed to allow for disposal of Land tenure Zone 3 lands (Appendix G).			
Existing RMP does not cover 4,000 acres near Livengood.	Recommend retain 17(d)(1) withdrawal on 4,000 acres to prevent further encumbrance.			Partially revoke 17(d)(1) withdrawals to open 4,000 acres to locatable mineral entry and location.	
<b>Areas of Critical Environmental Concern</b>	No ACECs designated.	Designate the White Mountains ACEC (576,000) acres. (Map 64)	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
<b>Research Natural Areas</b>	Serpentine Slide (4,270 acres), Limestone Jags (5,170 acres) and Mount Prindle (3,150 acres) are designated as RNAs. These areas would be managed to maintain a Primitive recreation setting (Appendix H.3) and <del>would be closed to mineral location, mineral leasing, and motorized vehicles.</del>				Designated RNAs same as Alternative A. OHV use in RNAs limited to winter; no summer use of OHVs.
	No surface-disturbing activities allowed except BLM-authorized research projects. Closed to camping. Primitive campsites may be established outside the RNA boundaries and improved access in the form of trails could be developed.		Same as Alternatives A and B except primitive camping and development of primitive hiking trails would be allowed in the RNAs.		

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
Wild and Scenic Rivers	Outstandingly remarkable values have not been identified for Beaver Creek.	Identify Outstandingly Remarkable Values for Beaver Creek WSR as scenic, recreation, geologic, fisheries, and wildlife.			
	Other rivers in area have not been studied for eligibility or suitability.	Fossil Creek recommended suitable for classification as "scenic" (23 miles) (Map 77).	No rivers recommended suitable	Same as Alternative C.	Same as Alternative C.

## **2.11. Comparison of Impacts**

### **2.11.1. Impacts Common to All Subunits**

The following table provides a comparison of the impacts that are common to all four subunits in the planning area.

**Table 2.26. Comparison of Impacts: Common to All Subunits**

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Air Quality</b>	<p>Impacts on air quality from wildland fire management include smoke and fugitive dust, which could affect human health and visibility. The effects would vary from short-term and localized, for small wildland fires, to moderate term (weeks) and widespread for large wildland fires. Large wildland fires would result in substantial and uncontrollable air quality impacts. Surface-disturbing activities could directly affect air quality in the short-term by generating fugitive dust, smoke, or motor vehicle emissions; implementation of resource protection measures, permitting requirements, and emissions-control strategies, would minimize impacts. Increased motorized activity has the potential for degradation of air quality from recreation vehicle emissions. Expected air quality effects would typically be minor and localized for small groups. Large-scale group activities may have moderate short-term impacts on air quality, including visibility. Long-range atmospheric transport of emissions from other countries (ADEC, 2011a ; Law and Stohl, 2007) occurs periodically, and may impair air quality and visibility.</p>				
<b>Greenhouse Gas Emissions</b>	<p>Based on current and projected development, future BLM-authorized actions would have low potential to affect climate change, as indicated by estimates of relatively low current and future GHG emissions. Because the planning area is sparsely populated with no substantial industrial development, fossil fuel development, or changes in land use/land cover projected to occur, it is anticipated that no substantial change in anthropogenic GHG emission levels would occur during the life of the plan. GHG emissions associated with local communities would continue to be the largest anthropogenic source of GHG emissions in the planning area. In 2010 the Fairbanks and Delta areas contributed the most GHG emissions 1,893,205 and 196,382 metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>Eq.) respectively. Seasonal placer mining is the single largest BLM-authorized industrial activity in the planning area. In 2014 active placer operations (exploration, suction dredge, small and large placer mines) on BLM-managed lands contributed, in total, approximately 4,410 MTCO<sub>2</sub>Eq.; less than 20 percent of the 25,000 MTCO<sub>2</sub>Eq. annual emissions level, above which quantitative reporting of GHG emissions is recommended by CEQ (2014). For comparison, total GHG emissions for all subunits under Alternative D, the most pro-development alternative, were estimated at 8,007 MTCO<sub>2</sub>Eq. annually, well below the 25,000 MTCO<sub>2</sub>Eq. reporting limit. See section 4.3.1.1.1.2 Greenhouse Gas Emissions for more detail.</p>				
<b>Climate Change</b>	<p>Climate change is occurring and affecting resources in the planning area, primarily from warming seasonal and annual air temperatures. Average annual temperatures (1949–2005) increased approximately 4 degrees F. at Interior Alaska climate stations, Bettles, Big Delta, Fairbanks, and McGrath. Most of the warming occurred since the mid-1970s, with the greatest seasonal change in winter, approximately 8 degrees F., and spring about 5 degree F., and the least amount of change in autumn, 0.2 degree F. Annual precipitation has varied but not substantially. Current and future projected climate change, due to regional and global conditions, will continue to impact BLM-managed resources and current and future BLM-authorized actions in the planning area. Impacts are primarily related to a warming climate and include 1) thawing permafrost, 2) increased length of growing season, and 3) increased wildfire frequency.</p> <p>1) Much of Interior Alaska is underlain by discontinuous permafrost—frozen ground with highly variable ice content that restricts water drainage and strongly influences landscape water balance as well as the design and maintenance of infrastructure. Thawing permafrost increases permeability of previously frozen soils and changes the distribution of surface waters across the landscape through increasing or decreasing wetland surface area depending upon site-specific conditions.</p> <p>2) The length of the growing season in Interior Alaska has increased on average from 83 to 123 days over the last century (Wendler and Shulski, 2009). Changes in dates of snowmelt and freeze-up associated with the longer growing season benefit agriculture and forestry and decrease annual use of heating fuels with warmer temperatures. Negative impacts may include reduced water storage, altered timing of the spring break-up, and increased risk of more extensive wildfire and insect outbreaks, as well as disrupted seasonal migration of birds and other animals (Chapin, et. al., 2014).</p>				

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>3) The increase in fire severity has occurred during a period of warmer spring seasons associated with earlier snowmelt, drying of wetlands, and lengthening growing seasons. Increasing temperatures have resulted in increased over-winter survival of bark beetles, and a consequent increase in the number of acres of forest destroyed by these insects. Dead trees combined with warmer, drier conditions leave the forests more vulnerable to wildfires (Karl et al. 2008). The increase in fire occurrence has coincided with, and likely has been at least partially driven by, increases in lightning frequency since the 1990s (Faruch et al. 2011). More extensive and severe wildfires could shift the forests of Interior Alaska during this century from dominance by spruce to broadleaf trees (Barrett, et. al., 2011).</p>				
<b>Cultural and Paleontological Resources</b>	<p>Cultural and paleontological resources may be directly and adversely affected by surface and subsurface-disturbing activities. These activities can permanently disturb or destroy the fossils, artifacts, features, and architecture found at sites, or destroy the spatial relationships among them. Any activity that alters or destroys the objects or spatial relationships in a site consequently destroys the ability to interpret the past. Direct impacts would be avoided by project redesign or mitigated through data recovery. Indirect effects could result from activities that allow or facilitate access of people onto the public lands, particularly areas that were previously isolated. With more access, there would likely be an increased number of people finding cultural and paleontological resources and adversely impacting them, either intentionally, or unintentionally.</p>				
	<p>The potential for both direct and indirect impacts would be the lowest under Alternative A. All lands would remain closed to mineral entry, and surface-disturbing activities and new access would be the most limited. Construction of recreational facilities to meet increasing recreation demand and increased visitation would increase the potential for impacts.</p>	<p>The potential for direct and indirect impacts would be slightly higher than in Alternative A, but lower than Alternatives C and D. Fifteen percent of the BLM land would be opened to mineral entry, slightly increasing surface-disturbing activities and new access. More lands would be managed for Primitive, Semi-Primitive or Backcountry recreational opportunities. Less emphasis on recreational facility construction would lead to fewer potential impacts.</p>	<p>The potential for both direct and indirect impacts would be higher than Alternative B, but less than Alternative D. Sixty-one percent of the BLM land would be opened to mineral entry, making surface disturbance and new access more likely to occur. More lands would be managed for Middlecountry or Frontcountry recreational opportunities, increasing the potential for impacts due to increased emphasis on recreational infrastructure development.</p>	<p>The potential for both direct and indirect impacts described above be the highest under Alternative D. Seventy-four percent of the BLM land would be opened to mineral entry, making surface disturbance and new access more likely to occur. The potential for impacts due to increased emphasis on recreational infrastructure development would be higher than Alternative C.</p>	<p>The potential for direct and indirect impacts would be slightly higher than Alternative B, but less than Alternative C. Twenty-six percent of the BLM land would be open to mineral entry, slightly increasing the potential for surface disturbance and increased access. Impacts from recreation management would be similar to Alternative C.</p>

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<p><b>Fish and Aquatic Species</b></p>	<p>Fish and aquatic resources would be primarily affected by surface-disturbing activities which alter stream channels, remove or damage riparian vegetation, or result in soil erosion and sedimentation to aquatic habitat. Activities causing extensive stream channel or riparian alteration would likely result in unavoidable loss of fish and aquatic habitat, with both short- and long-term adverse impacts. Invasive species can adversely effect fish and aquatic resources through habitat change, predation, parasitic behavior, disease, competition, and hybridization. Initially, adverse impacts would be localized since the distribution of invasive species would be highly localized; if invasive species became widely established, however, major adverse impacts would be expected. The initial introduction of aquatic invasive species into the planning area would have adverse impacts at the local level; however as time progressed long-term, major adverse impacts would be expected as invasive species spread across the planning area. Measures proposed in the RMP aimed at limiting the introduction and spread of invasive species would benefit fish and aquatic resources. Management to avoid or minimize impacts to wilderness characteristics would potentially benefit fish and aquatic resources by minimizing surface-disturbing activities and decreasing recovery time from disturbance.</p> <p>Wildland fire directly and indirectly impacts fish populations and their prey through increased siltation, and changes in water quality and temperature. Wildland fire can change the nutrient input to water systems and changes to permafrost status can lead to altered hydrology. Fish will generally re-invade burned areas rapidly where movement is not limited by barriers. Fish population recovery generally tracks the increase in primary and secondary production that occurs in the early post fire period. Where sediment is continually delivered into the stream, there could be short-term negative effects on fish and macro-invertebrate communities. Forest harvest activity could reduce the natural source of large woody debris, reducing habitat complexity for fish. Removing trees within the riparian zone could also result in increased water temperatures and streambank erosion. Maintaining appropriately sized buffers along streams would greatly reduce impacts.</p> <p>Suction dredging has been shown to locally reduce benthic invertebrates, cause mortality to early life stages of fish, destabilize spawning and incubation habitat, remove large roughness elements such as boulders and woody debris, increase suspended sediment, decrease the feeding efficiency of sight-feeding fish, and reduce living space by depositing fine sediment (Thomas 1985, Harvey 1986, Griffith and Andrews 1981, Harvey and Lisle 1998, Barrett et al. 1992). Conversely, suction dredging may temporarily improve fish habitat by creating deep pools or more living space by stacking large non-embedded substrate (Harvey and Lisle 1998). Dredge tailings may increase spawning sites in streams lacking spawning gravel or streams that are armored by substrate too large to be moved by fish (Kondolf et al. 1991). The reduction in the feeding efficiency of fish may be offset the reduced risk of predation at moderate levels of suspended sediment (Gregory 1993). Rehabilitation of fish habitat, including channel stability and proper riparian function, may take decades to attain after conventional placer mining (Tidwell et al. 2000). Sedimentation becomes a factor in the suitability of the habitat for fish until channel stability and riparian function is attained. Increased sedimentation can limit the ability of fish to obtain food, smother fish eggs and reduce the amount of intergravel space available for eggs, juvenile fish, other organisms, and overwintering habitat. It may also create stressful conditions that could increase susceptibility to disease. Placer mining reduces the diversity of habitats (i.e., pools, riffles, undercut banks, overhanging riparian vegetation, large woody debris) resulting in reduced fish densities within post-reclamation stream segments. Streams where placer mining has occurred, may experience short duration but chronically occurring episodes of elevated turbidity. Turbidity commonly exceeds the State standard during periods of high flow and occasionally, as a result of water control issues, during active mining operations. Disturbance to riparian habitats and streambanks from OHV use and recreation could directly and indirectly affect fish and aquatic habitats. Where trails cross streams, soil and vegetation may be altered or destroyed resulting in unstable and eroding streambanks. Temporary campsites or development of trails can also lead to streambank erosion. The loss of riparian vegetation and subsequent bank erosion may lead to increased stream sedimentation. Increased sedimentation could affect fish through mortality, reduction in suitable spawning gravels, reduction in summer and winter rearing habitat, suffocation and mortality of eggs, and displacement of individual fish.</p>				

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>Road construction could have potential long-term impacts to fish and aquatic resources. Disturbance of soil during road construction creates a significant potential for erosion and sedimentation of nearby streams. Roads often increase the frequency of landslides, debris flow, and other mass movement. Culverts, if not properly designed and maintained, can create migration barriers to fish resulting in a loss of habitat. Up to 14 percent of the stream miles open to locatable minerals would fall within ACECs or RCAs. The collection of baseline hydrological data, active revegetation, and streambank stabilization in these areas, would increase the probability of meeting desired future conditions for aquatic habitat. If proposed reclamation efforts are properly implemented and sufficient to withstand flood events, desired habitat conditions may be achieved in three years, resulting in only minor and short-term impacts. Since designing and reconstructing fully functioning stream channels is very complex, combined with the harsh environmental conditions within the planning area, it's more likely that this level of reclamation would result in a strong positive trend toward the desired habitat conditions within 5 to 10 years.</p>				
	<p>Effects would generally be the lowest under Alternative A because the planning area is closed to new locatable mineral entry. Effects from off-trail OHV use would continue to occur.</p>	<p>Effects would be higher, 13 percent of the area would be opened to mineral entry, OHV use would be limited to existing or designated trails on much of the area, and the most RCAs would be identified.</p>	<p>Effects would be higher than under Alternatives A and B. Sixty percent of the BLM land would be opened to new mineral entry, OHV use would be limited to existing or designated trails on parts of the planning area, and fewer RCAs would be identified.</p>	<p>Alternative D would have the greatest potential to impact fish and aquatic resources 73 percent of the BLM land would be open to mineral entry and the fewest RCAs would be identified. Effects from OHV use would be similar to Alternative A.</p>	<p>Effects would be higher than Alternatives A and B, but less than Alternative C. Recommended withdrawal of RCAs, Black River, and ACECs from mineral entry would reduce potential impacts from mining compared to other action alternatives. Effects from OHV use would be similar to Alternative A.</p>
<p><b>Non-Native Invasive Species</b></p>	<p>Any disturbances on the landscape provide an opportunity for non-native invasive plants (invasive plants) to become established. Invasive plant seed and propagative parts and non-native invasive species (e.g., insects, pathogens, and invertebrates) may be transported to new locations on vehicles, watercraft, aircraft, equipment, or gear. The effect is compounded if vehicles, watercraft, aircraft, equipment, or gear come from outside the local area or the state. Infestations are concentrated around disturbances and areas of use; however, they may also occur downstream from mining operations and trail/road crossings. Climate change predictions, including longer frost-free seasons and thawing of permafrost, may accelerate the ability of non-native invasive species (invasive species) to become established (Rupp and Springsteen 2009). Infestations would be concentrated around disturbances and areas of use, such as trails, recreation sites, roads, mines, and other developments. Timely reclamation using native plant materials may diminish the potential for invasive plant species to become established at disturbed sites. Roadsides, trails, floodplains, and rivers are prime habitat for invasive plant species and vehicles, including watercraft and OHVs, are prime vectors for the introduction and spread of invasive plants along these corridors. Vehicles import (and export) seeds, often introducing previously unrecorded species. Any disturbance or use, including non-motorized, can contribute to introduction and spread of invasive plants. Additionally, seeds and other reproductive parts of invasive species can be transported by currents from upstream infestations to other areas of the waterways. Invasive plants are commonly introduced by the use of contaminated hay and straw. Hay is frequently fed at trail heads and seed can be passed once pack animals enter public lands. Introduction and spread of invasive plants could occur where infested gravel, fill, and other materials are moved from a source area to public lands. A weed-free gravel (WFG) certification program is being developed in Alaska. Certification programs, outreach/education efforts, and early detection and rapid response would reduce but not totally</p>				

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>eliminate effects. Invasive plant management strategies would be developed as a step-down plan from the Proposed RMP/Final EIS. The strategy would include integrated pest management, which would also address large and difficult to treat infestations. The primary difference between the alternatives is the level of surface-disturbing activities, which would correlate with the potential for introduction and spread of invasive species. The decisions in Alternative B would result in the lowest potential impacts on invasive species and Alternative D would have the highest potential.</p>				
	<p>The planning area is closed to mining, limiting surface-disturbing activities. OHV use would occur off of existing trails, increasing potential for new infestations. Prohibiting summer OHV use on 11 percent of the planning area and limiting rights-of-way to six transportation corridors in the Steese and White Mountains subunits, would reduce effects in these areas.</p>	<p>Although 13 percent of the area would be opened to mining, additional surface disturbance would be limited. OHV use would be more constrained than in Alternative A. Summer OHV use would not be allowed or would be limited to existing trails on 47 percent and 27 percent of the area respectively. SOPs, transportation corridors, and four ROW avoidance areas would reduce the potential for spread and new infestations of invasive species. Alternative B has the lowest potential for introduction or spread of invasive plants.</p>	<p>Sixty percent of the area would be opened to mining, resulting in additional surface disturbance. OHV use would be less constrained than in Alternative B. Summer OHV use would not be allowed or would be limited to existing trails on 20 percent and 45 percent of the planning area respectively. SOPs and two transportation corridors in the Steese National Conservation Area would reduce the potential for spread and new infestations of invasive species.</p>	<p>Seventy-three percent of the area would be open to mining. Limitations on OHV use would be slightly more restrictive than Alternative A, with 16 percent of the area closed to summer OHV use. OHV use would occur off of existing trails, increasing potential for new infestations. SOPs would be implemented. Alternative D would have the highest potential for introduction or spread of invasive species.</p>	<p>Twenty-six percent of the area would be open to mining, resulting in additional surface disturbance. OHV use would occur off of existing trails, increasing potential for new infestations. Prohibiting summer OHV use on 11 percent of the planning area would reduce effects in these areas. Allowing snowmachine use in research natural areas would increase the potential for spread of invasive species into these areas.</p>
<p><b>Soil and Water Resources</b></p>	<p>Relatively minor surface disturbances can lead to long-term adverse impacts to soil and water resources as much of the planning area is underlain by permafrost. Erosion of soils and subsequent instream sedimentation are the most important concerns for maintaining soil health and water quality. Surface-disturbing activities (i.e., OHV use, mining, trail or road construction, wildland fire management) have the potential to result in direct adverse impacts to soil and water resources regardless of subunit and alternative. Impacts may include increased soil erosion and sedimentation in streams, altered soil chemistry and nutrient composition, and reduced diversity of native plants (Hawkins 2000; Chapin et al, 2000). Management to maintain Special Status Species, vegetative communities, wilderness characteristics, and wildlife habitat, and special designations would generally benefit soil and water resources, as would management to reduce introduction and spread of invasive species. The implementation of SOPs which protect upland and riparian vegetation, would also contribute to water quality and healthy soils. These beneficial effects would be substantially similar for watersheds in all subunits and alternatives, mitigating impacts to surface and subsurface waters as well as wetlands and floodplain areas. Measures to restore disturbed fish and aquatic habitats and to protect healthy watersheds would result in long-term beneficial impacts to soil and water resources. Water and soils resources would be managed to reduce soil-erosion, minimize impacts to soil profiles, and comply with State of Alaska water quality requirements and storm water pollution prevention permit requirements. BLM-authorized uses would be analyzed</p>				

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>through the NEPA process and measures enacted to protect and/or restore healthy functioning watersheds, and minimize disturbance of soil resources. Not all effects could be mitigated. In general, effects would vary by the acreage open to surface-disturbing activities. Alternative D would be the least protective of resources and Alternative B would provide the greatest protection.</p>				
	<p>No RCAs are identified. Planning area is closed to mining thereby limiting surface-disturbing activities. Some OHV use would likely occur off of existing trails, increasing potential for adverse impacts to soil and water resources. Prohibiting summer OHV use on 11 percent of the planning area and limiting rights-of-way to six transportation corridors in the Steese and White Mountains Subunits would reduce impacts in these areas. On remaining lands the only limitation on OHV use would be 1,500 pound GVWR weight limit; cross-country travel is allowed.</p>	<p>Additional protection of soil and water resources would be provided by management of 73 RCAs. Although 13 percent of the area would be opened to mining, additional surface disturbance would be limited. OHV use would be more constrained than in Alternative A. Summer OHV use would be closed on 47 percent of the area and would be limited to existing designated trails on 27 percent of the area. SOPs, transportation corridors, and four ROW avoidance areas would reduce the potential for adverse impacts to soil and water resources. Alternative B has the lowest potential for disturbance and adverse impacts to soil and water resources.</p>	<p>Soil and water resource protection would be provided by management of 45 RCAs. Sixty percent of the area would be opened to mining, resulting in additional surface disturbance. OHV use would be less constrained than in Alternative B. Summer OHV use would be closed on 20 percent and limited to existing trails on 45 percent of the planning area. SOPs and two transportation corridors in the Steese National Conservation Area would reduce the potential for disturbance of soil and water resources.</p>	<p>Protection of soil and water resources would be provided by management of 22 RCAs. Seventy-three percent of the area would be open to mining. Limitations on OHV use would be slightly more restrictive than Alternative A, with 16 percent of the area closed to summer OHV use. OHV use would occur off of existing trails, increasing potential for disturbance of soil and water resources. SOPs would be implemented. Because of the relatively large areas open to mining Alternative D would have the highest potential for surface disturbance and adverse impacts to soil and water resources.</p>	<p>Additional protection would be provided by withdrawal of 73 RCAs and Black River watershed from mineral entry. Twenty-six percent of the area would be open to mining, resulting in potential surface disturbance. Prohibiting summer OHV use on 11 percent of the planning area would reduce effects in these areas. OHVs would be limited by weight over the entire planning area. Some off-trail use of OHVs would occur with impacts on soil and water resources similar to Alternative A. Research natural areas would be open to winter snowmachine use increasing the potential for impacts to soil and water resources in these areas.</p>
<b>Wetlands and Floodplains</b>	Same as Soil and Water Resources				

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Special Status Species</b>	<p>Effects on BLM Alaska sensitive species are similar to those described in the Vegetative Communities, Wildlife, and Fish and Aquatic Species sections. Given that effects from allowed activities are predicted to remain fairly localized, and that most habitats would remain in natural condition, it is not anticipated that any alternative would trend any sensitive species toward federal listing. Actions affecting wetland, riparian, and aquatic habitats could result in impacts because these habitat types support many sensitive animal species. All action alternatives open significant areas to placer mining, which could result in substantial local impacts to riparian and aquatic habitats and species, although in varying degree. Alternatives that maintain water quality and limit impacts to riparian habitats will best minimize impacts to sensitive animal species. Where established, RCAs will reduce impacts to riparian and aquatic habitats, primarily by improving reclamation. RCAs do not exist in Alternative A (although no areas are open to locatable or leasable minerals), are most extensive in Alternatives B and E, and least extensive in Alternative D. Reclamation requirements in all action alternatives, may increase reclamation success and reduce impacts. SOPs would have protective effects on some species. The potential for impacts to sensitive species is highest in Alternative D, lowest in Alternative B, and intermediate in Alternatives C and E. Alternative E (Proposed RMP) opens 26 percent of the planning area to mineral entry.</p>				
	<p>Placer mining activity could degrade riparian areas, stream habitats, and water quality, resulting in localized impacts to sensitive aquatic species. Continued management of Birch Creek WSR would provide some protection to the Alaska endemic mayfly. For all subunits except the White Mountains (closed to locatables), the expected impact to fish and aquatic resources (including sensitive species) from locatable minerals would be highest for Alternative D, and progressively less for Alternatives C, E, B, and A. Some terrestrial sensitive animal species may benefit from activities that promote early-successional habitats (e.g., timber removal, prescribed fire) while most would be negatively impacted from these types of activities. The rusty blackbird is most dependent on wetlands, making protection of lake and pond habitats more important for conservation of this species. Suitable lake and pond habitats are quite rare on BLM lands relative to the Yukon Flats and Tetlin National Wildlife Refuge, so it is very unlikely that any alternative could result in population-level impacts to this species. Potential impacting uses on golden eagles and short-eared owls include recreational activities near nest sites (especially along river cliffs), large-scale mining operations, improperly designed power lines, towers, or similar structures, and high levels of summer OHV use. The impact of approved activities on nesting golden eagles will be limited by the SOPs. The relatively low densities of eagles and short-eared owls and the low level of activities predicted will likely lead to low area-wide levels of impacts to populations of either species in any alternative. Most sensitive plant species occur in habitats with specialized conditions. Potential impacts to sensitive plant habitats occur mostly from summer OHV use, road and trail construction, and large mineral developments in upland habitats. Alternatives that allow locatable and leasable mineral development (or other activities that may create new roads and trails), and also allow cross-country OHV use in the same areas, represent greater potential impacts to sensitive plant species. Additionally, these activities are likely to facilitate the spread of non-native invasive plants, which may be the largest potential impact to sensitive plant species. Alternatives that close areas to cross-country OHV use will limit the potential effects.</p>				
<b>Special Status Species</b>	<p>Mosquito Flats would not be designated as an ACEC, but is withdrawn from mineral entry. Benefitting trumpeter swans and short-eared owls.</p>	<p>Mosquito Flats would not be designated as an ACEC and would be open to mineral entry. Increasing the potential for impacts to trumpeter swans and short-eared owls.</p>	<p>Management of the Mosquito Flats ACEC would provide benefits to trumpeter swans and short-eared owls.</p>		

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Vegetation</b>	<p>Management to maintain soil, water quality, fish habitat, Special Status Species, visual resources, wilderness characteristics, and subsistence, and special designations will generally benefit natural diversity of vegetative communities. The effects of solid leasable minerals, salable minerals, lands and realty, and renewable energy is predicted to be small due to the limited activity expected. The SOPs (Appendix A) would reduce potential impacts to vegetative communities in the action alternatives. RCAs would reduce impacts to riparian vegetation where they are identified. The potential impact of introduction and spread of non-native invasive plants (invasive plants) is large and most often occurs in conjunction with surface-disturbing activities or use of motorized vehicles. Requirements for weed-free hay, mulch, seed, and gravel sources would reduce potential for establishment of invasive plants. Cross-country OHV use, especially in recently burned areas, may represent the largest potential impact to vegetative communities, through spread of invasive plants. Wildland fire is the major determinant of vegetative communities. A natural fire regime is considered desirable and is maintained for most of the planning area through the Limited Management Option. Areas near the road system and communities are typically within Modified, Full, or Critical fire management options and fire suppression will artificially modify the fire regime in these areas. Greater public presence and establishment of human infrastructure, which could result from decisions in this plan, often leads to greater fire suppression which can cause deviations away from normal fire regime. Effects to vegetation of a longer fire return interval include older stand ages, changes in community composition, trend towards less productivity and growth, and larger areas of similar vegetation. Climate change is predicted to result in major changes to vegetation in the next 30 years as fire frequency increases. Activities which facilitate the spread of invasive plants will compound the effects of climate change and the regional increase in prevalence of invasive plants. Harvest of timber can have major effects on vegetation, although assumed low levels of harvest will result in minor impacts at the planning area scale. Potential impacts include: loss of vegetation cover, conversion of vegetation to an earlier successional state, and introduction of invasive plants. Regeneration of tree species can sometimes be delayed by heavy grass cover following harvest. Roads and trails created for forest harvest can result in both direct and indirect impacts on vegetation, including facilitating recreational OHV use and creation of new trails.</p>				
	There would be no seismic exploration.	Clearing of seismic lines causes direct destruction of vegetation and recovery of vegetation is slow. Lines may be used for OHV travel, which can exacerbate impacts and slow or prevent vegetation recovery. Impacts would be localized and limited due the low level of exploration anticipated.			
	Impacts from locatable minerals include both direct loss of habitat and changes in human use due to improved access. Placer mining disturbs riparian and near-stream vegetation and the stream channel which may result in downstream effects on riparian vegetation. Mining typically changes the vegetation from late seral to early seral communities. Recovery of habitats is highly variable and may be very slow. Aufeis formation can result in erosion and prevent or slow vegetation growth. It may require 50 years or more (following end of mining) for riparian habitat quality to approach pre-mining conditions. Lode mining disturbs upland vegetation, results in permanent change to the landscape, and typically requires high-standard road access. In addition to direct loss of habitat, roads can cause changes to vegetation through melting permafrost, obstruction or change in drainage, aufeis formation, erosion and deposition into streams, and dust deposition on adjacent vegetation. Invasive plants are frequently spread along roadways. Roads facilitate access to areas which may previously have been remote and inaccessible, resulting in indirect impacts.				
	Effects from mining would be limited to 21,000 acres of existing mining claims in the Fortymile, Steese,	834,000 acres in the Steese and Fortymile subunits (13 percent of planning area) would be opened to mineral entry. Effects	3,887,000 acres in the Steese, Fortymile, and Upper Black River subunits (60 percent of planning area) would be	4,755,000 acres in the Steese, Fortymile, and Upper Black River subunits (73 percent of planning area) would	Effects would occur on 1.713,000 acres (26 percent of planning area) open to mineral entry. Effects would be lower

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	and White Mountains subunits.	from mining would be higher than Alternative A.	opened to mineral entry. Effects would be higher than Alternatives A and B.	be opened to mineral entry. Effects would be highest in this alternative.	than Alternative C, but higher than Alternative B.
<p>Recreational facilities impact vegetation directly from loss of habitat, and indirectly through visitor use. High levels of visitors can impact vegetation through trampling. Recreationists using motorized vehicles typically have larger impacts to vegetation, both in area impacted and degree of modification. Effects of non-motorized recreation typically occurs in only limited areas of concentrated use. Impacts to vegetation from snowmobiles would be low and noticeable impacts limited to local areas of heavy use. Summer use of OHVs both on and off trails can affect the vegetation including: crushing and breakage of shrubs, exposure of mineral soil, changes in drainage patterns, compression of the organic layer, and increased thaw depth. In permafrost soils, this can lead to thermokarsting and erosion. In user-created trails, vegetative cover and composition may change or vegetation may be totally lost in the trail tread. Trails with exposed soil (whether managed or user-created) serve as routes of spread for invasive plants.</p>					
	Effects from OHV use would be the highest due to the lack of OHV designations on 63 percent of the planning area. Eleven percent is closed to summer OHV use. On remaining lands the only limitation on OHV use is a 1,500 pound GVWR weight limit; cross-country travel is allowed.	Effects from OHV use would be the lowest as less than 1 percent of the planning area would be closed to all motorized use, 47 percent would be closed to summer OHV use, and 27 percent would be limited to designated or existing trails. In the Steese Subunit subsistence users would be allowed summer OHV access, introducing impacts to areas limited to no summer OHV use in other alternatives.	Effects would be higher than Alternative B. Less than 1 percent would be closed to all motorized use, 20 percent would be closed to summer OHV use, and 45 percent would be limited to designated or existing trails. Cross-country summer use of OHVs 1,000 pounds curb weight and less would be allowed on 35 percent (all in the Upper Black River subunit).	Effects would be higher than Alternative C but less than Alternative A. Less than 1 percent would be closed to all motorized use and 16 percent would be closed to summer OHV use. Cross-country summer use of OHVs 1,000 pounds curb weight and less (1,500 pounds in Fortymile subunit) would be allowed on 83 percent.	Effects would be similar to Alternative A with the following differences. Research natural areas would be open to winter snowmachine use increasing the potential for impacts in these areas. OHVs would be limited by weight over the entire planning area.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Visual Resources</b>	<p>Surface-disturbing activities such as mining, trail construction, or facilities development effect visual resources due to changes in line, form, color, and texture on the landscape. Field camps temporarily impact visual resources by introducing different colors into a predominately green and brown landscape. Wildland and prescribed fires change line, color, and texture of burned areas in contrast to the surrounding unburned areas. Proper management of air quality, soils, vegetation, fish, and wildlife would generally protect or enhance visual resources, as would Special Designations such as WSR or ACECs. Recreation Management Zones are managed for different physical settings which include remoteness, naturalness and visitor facilities. Generally, areas managed for Primitive, Semi-Primitive or Backcountry settings would protect or enhance visual resources. Evaluation of individual projects for effects to visual resources, would reduce impacts in all alternatives and VRM Classes.</p>				
	<p>Effects described above would occur but would be limited by existing mineral closures, which should result in fewer surface-disturbing activities. Conversely, there would be fewer special designations, summer OHV use would be less constrained, and recreation setting character and VRM Classes are not identified for all lands.</p>	<p>Effects would be higher than Alternative A. Acres of surface disturbance would be slightly higher. Acres within special designations would include the largest area, OHV use would be the most limited, more lands would be managed for a Primitive, Semi-Primitive, or Backcountry setting, and 81 percent of the area would be managed as VRM Class I-II.</p>	<p>Effects would be higher than Alternative B. More lands would be opened to mineral entry, resulting in more surface disturbance. OHV use would be less limited than in Alternative B, but more limited than Alternative A. Fewer acres would be under special designations or managed for Primitive, Semi-Primitive, or Backcountry settings than in Alternative B. Thirty-four percent of the area would be managed as VRM Class I-II.</p>	<p>Effects would be the highest. This alternative would open the most land to mineral entry and have OHV limitations similar to Alternative A. Fewer acres would be under special designation of any alternative, except A. Less land would be managed for a Primitive or Semi-Primitive setting and 13 percent of the area would be managed as VRM Class I-II.</p>	<p>Effects would be higher than Alternative B, but lower than Alternative C. This alternative would open 26 percent of the lands to mineral entry. Levels of summer OHV use would be similar to Alternative A. More acres would be managed for a Backcountry setting than in Alternative C, protecting or enhancing visual resources. Sixty-one percent of the area would be managed as VRM Class I-II.</p>
<b>Wilderness Characteristics</b>	<p>Short-term and long-term effects to naturalness could occur from surface-disturbing activities associated with management of resources, mining activity, or land use authorizations. Increased access due to BLM-authorized activities may decrease opportunities for solitude while increasing opportunities for primitive, unconfined recreation. Visual resource management would help maintain naturalness. Recreation prescriptions would help maintain naturalness in areas where wilderness characteristics would be maintained. In other areas, recreation and travel management decisions may impact naturalness and opportunities for solitude. Effects on wilderness characteristics would be the lowest under Alternative B, somewhat higher under Alternatives C and E, and the greatest under Alternative D.</p>				
	<p>Not addressed.</p>	<p>Wilderness characteristics would be maintained on 5,012,000 acres (78 percent) in the Fortymile, Steese, Upper Black River, and White Mountains subunits.</p>	<p>Wilderness characteristics would be maintained on 2,074,000 acres (32 percent) in the Fortymile, Steese, Upper Black River, and White Mountains subunits.</p>	<p>Wilderness characteristics would be maintains on 741,000 acres (11 percent) in the Fortymile, Steese, and White Mountains subunits.</p>	<p>Wilderness characteristics would be maintains on 3,456,000 acres (53 percent) in the Fortymile, Steese, Upper Black River, and White Mountains subunits.</p>

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Wildland Fire</b>	In areas where wildland fire exclusion is attempted larger more severe wildland fires, that may be outside the range of natural variability, could occur. Areas that are in the Critical, Full, or Modified fire management options have the potential to lose key ecosystem components due to fire exclusion and move from Fire Regime condition class 1 to condition class 2 or 3. These effects may be mitigated through fuel management projects or changes to fire management options.				
<b>Wildlife</b>	<p>Management to maintain soil and water resources, Special Status Species, vegetative communities, visual resources, wilderness characteristics, and subsistence will generally benefit wildlife and their habitat, as would management of invasive plants. The effects of solid leasable minerals, salable minerals, lands and realty, and renewable energy are anticipated to be small due to the limited activity expected. The SOPs (Appendix A) will apply in all action alternatives and would reduce potential impacts to habitat and many wildlife species. A SOP which does not allow use of domestic sheep, goats, or llamas as pack animals by BLM-permittees (such as commercial outfitters) would reduce the potential for disease transmission to Dall sheep. Members of the public, however, could use these pack animals (except in Alternatives B and E) and potential impacts to Dall sheep are considerable. Measures to minimize impacts to fish habitat will generally benefit wildlife and habitat because of the high value of riparian habitats to many species. RCAs and High Priority Restoration Watersheds will reduce impacts to riparian vegetation, especially stream bank vegetation, resulting in lesser impacts to wildlife in general, and more specifically to BLM Alaska sensitive species and Bird Species of Conservation Concern.</p> <p>Invasive plants have the potential for impacts to wildlife due to alteration of habitat. Introduction and spread of non-native animal species is also a potential impact. All action alternatives include measures to monitor and control the spread of invasive species. These measures will reduce impacts, but some increased abundance of invasive plants are inevitable and loss of habitat for native wildlife species can be expected. Roads and trails (and associated vehicle use) are recognized as the primary avenues of spread of invasive plants. Alternatives which minimize creation of roads and trails, and off-trail summer use of OHVs will reduce potential spread and impacts of invasive plants. Treatment of invasive plants infestations may impact wildlife habitats, but generally less than continuation and spread of invasive plants at the site.</p> <p>A natural fire regime is considered beneficial to wildlife and is maintained over most of the planning area through the Limited Fire Management Option. Fire may improve habitat components for some species while degrading habitat for others. Over time, as vegetation recovers from fire, various species of wildlife would benefit from various successional stages of vegetation. Prescribed fire may be used to improve moose habitat. If browse is not a limiting factor on moose populations, there would be little impact on populations over the short-term. The short-term effects of fire on caribou winter range are negative. Lichens, primary winter forage for caribou, are highly susceptible to fire. Impacts to habitat include reduced availability of forage lichens for 60 to 80 or more years after wildfire (Klein 1982, Joly et al. 2003, Collins et al. 2011). On caribou summer ranges, forage quality of vascular plants is improved by fire. Caribou actively avoid burned areas for 35-50 years after a fire (Joly et al. 2003) and select stands greater than 80 years for foraging. It is speculated that, over the long-term, fire would likely be beneficial to caribou as it helps maintain the ecological diversity of the habitat and may prevent mosses from out-competing forage lichens. Periodic fires create a mosaic of fuel types and fire conditions that naturally preclude large, extensive wildland fires (BLM 2004b). Wildlife habitat may be destroyed, fragmented, or degraded due to construction of fire breaks or use of OHVs. Firelines may result in unplanned OHV trails and associated use. Degradation of firelines by thermokarst or erosion may prevent vegetation reestablishment. Impacts from fire suppression would be infrequent.</p> <p>No seismic exploration would occur.</p> <p>Seismic exploration in the Steese and Upper Black River subunits would directly impact wildlife. Direct loss of habitat occurs with clearing of seismic lines and recovery of vegetation is slow. Caribou would be temporarily displaced by winter seismic survey activities and/or increase movements. Continued vehicle use of seismic lines by recreational users may result in longer-term displacement of wildlife. In general, large and medium mammal responses to seismic activities are expected to be temporary avoidance of the local area. Small rodents</p>				

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
		such as voles could suffer direct mortality, but this would be insignificant to populations in the area. Most birds are absent at the time of year seismic exploration would occur (December-April), but resident species could be temporarily displaced and some early-nesters (such as owls) may have their nests destroyed. A total of 20 miles of seismic line is anticipated on BLM lands within the life of the plan. Impact of this amount of activity would likely be small and local in nature.			
<b>Forest and Woodland Products</b>	Measures to protect other resources, such as limits on the method, timing, and amount of harvest, could make harvest less economically feasible. Implementing closures to protect resource values or specially designated areas would result in the loss of some available acreage and opportunities for harvest. These restrictions and closures would have minimal impact under all alternatives, due to low timber values, lack of demand, and lack of access on BLM lands.				
	Effects would be the lowest under Alternative A, as closures and restrictions on harvest affect the fewest acres.	Effects would be the highest under Alternative B, as nearly half of lands would be closed to various types of harvest. Large areas would also fall under some type of special designation.	Effects would be somewhat lower than under Alternative B. Thirteen percent of lands would be closed to various types of harvest and fewer acres would fall under special designations.	Effects could be slightly higher than Alternative A but less than alternatives B and C. Only 5 percent of lands would be closed to various types of harvest and slightly less acreage would fall under special designation.	Effects would be higher than Alternatives A, C, and D, but less than Alternative B as 30 percent of lands would be closed to various types of harvest. Slightly more acres would fall under special designation than in Alternative C.
<b>Lands and Realty</b>	The primary effect would be the potential for requiring relocation, redesign, or denial of realty authorizations to protect other resources. In some cases, proposed projects could be denied in VRM Class I and II areas. In alternative B, designation of right-of-way avoidance areas would likely make it more expensive and difficult to obtain rights-of-way in these areas. Designation of ACECs in all alternatives may make it more expensive and difficult to obtain rights-of-ways within ACECs. This effect would be the most pronounced in the Fortymile Subunit. The potential for adverse impact decreases from Alternative B to Alternative E to Alternative C to Alternative D because the acres under VRM Class I and II designation decreases from 79 percent in Alternative B to 12 percent in Alternative D and the acres designated as ACECs decreases from 43 percent in Alternative B to 21 percent in Alternative D.				
<b>Leasable Minerals e.g., oil and gas</b>	Although all lands are closed in Alternative A, and Alternatives B, C, D, and E propose to close between 5.7 million acres and 1.3 million acres, to fluid mineral leasing, closure decisions would have little effect due to the lack of these resources on BLM-managed lands. Alternatives B, C, D, and E would open 834,000 to 5.2 million acres, to fluid mineral leasing. Little interest in exploration and no interest in leasing is anticipated in any subunit or alternative. Although decisions in Alternatives B, C, D, and E propose to open from 834,000 to 5.2 million acres, to solid mineral leasing, these decisions would have no effect due to the lack of these resources on BLM-managed lands and a decision to defer coal leasing to a future planning effort.				
<b>Salable Minerals e.g., sand and gravel</b>	All lands are open to salable minerals.	Alternatives B, C, D, and E would close 2,751,000 to 145,000 acres to salable minerals. The unavailability of salable minerals could make projects more logistically challenging or uneconomic. This effect would be minor as demand for salable minerals on BLM-managed lands would be low due to the remote nature of the closed areas, lack of infrastructure, and availability of mineral materials on state and private land.			

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Recreation Management</b>	<p>Measures to protect natural resources would generally benefit recreation by enhancing scenic quality and opportunities for fish and wildlife related recreation. The protection and interpretation of cultural sites would provide beneficial experiences for those seeking historical and cultural appreciation opportunities. Visual Resource Management would have would have long-term, - beneficial impacts on recreational activities that include scenic qualities as part of the experience. Negative effects may occur due to restrictions on trail, site, or facility development to avoid sensitive areas, protect view shed, or to prevent resource degradation. Resource development activities such as timber harvest, land use authorizations, gravel pits, or mining could result in increased trails, potential dislocation of wildlife and alteration of scenic visages. Gravel pits may also provide parking and motorized free-play areas. These could impact recreation resources and experiences of naturalness and closeness to nature in Semi-Primitive and Backcountry Zones. In Middlecountry and Frontcountry Zones, impacts would be less due to the more developed nature of these settings. The delineation of a recreation management areas (SRMA) would protect and enhance recreational resources while encouraging specific targeted outcomes (i.e., activities, experiences, benefits, and settings) in these areas. Travel management decisions would provide for a range of motorized and non-motorized recreation experiences, while protecting resource values and minimizing user conflicts. Proposed management in RNAs, ACECs, and WSRs would encourage recreation activities of a more non-motorized, Semi-Primitive nature. As the size or number of these areas increase, opportunities for non-motorized forms of recreation would also increase. Additional restrictions on OHV use or other recreational activities would reduce opportunities for some types of recreational experiences. Management of designated WSR to preserve and enhance Outstandingly Remarkable Values would provide long-term, beneficial impacts to users seeking recreation activities in these areas.</p>				
	<p>Not addressed.</p>	<p>Recreation users and BLM-permittees could not use domestic goats, sheep, or camelids as pack animals in Dall sheep habitat.</p>	<p>There would be no prohibition on the use of domestic goats, sheep, and camelids as pack animals for casual recreational use. However, these animals could not be used by BLM-permittees in Dall sheep habitat.</p>		<p>Same as Alternative B.</p>
<b>Travel Management</b>	<p>Measures to protect natural and cultural resources may reduce opportunities for travel-related activities. Trails may be rerouted to avoid sensitive sites or emergency closures may be implemented. Special designations such as ACECs, RNAs, or WSRs may result in additional limitations on travel. These decisions would limit the accessibility and availability of public lands and features, including roads, primitive roads, and trails. Activities that result in development of new access may increase opportunities for travel-related activities. Assignment of VRM classes generally benefits travel management by maintaining scenic character. Some limitations on trail construction could be applied based on the VRM class. Transportation facilities would need to be designed to meet VRM class objectives. In VRM Class I and II areas, transportation facilities should not attract the attention of the casual observer. In VRM class III areas, such facilities may attract attention and in VRM Class IV areas they may dominate the landscape. Resource development activities such as timber harvest, land use authorizations, or mining could affect travel management through the expansion of the existing transportation network or by degrading existing trails through heavy use. Mineral material sales could facilitate development or improvement of trails, by providing a source of materials close to project sites. Material sales could slightly increase the opportunities available for OHVs by constructing gravel pits and access roads.</p>				

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Economics</b>	<p>Recreation use is expected to grow slowly with increased population in the region. The largest economic effect would be from fluid leasable (oil and gas) and locatable minerals. Economic effects would be low for all alternatives, but slightly higher in Alternative D than in Alternatives A, B, C, and E. Non-market and Non-use values would be highest in Alternative A, mineral closures prevent most development. Under Alternatives B, C, D, and E, these values would decrease in proportion to acreage protected through mineral closures, Primitive or Semi-Primitive recreational settings, maintenance of wilderness characteristics, or special designations.</p>				
	<p>Alternative A could result in at total of 207 jobs and \$9.9 million income related to mining, mostly in the Fortymile and Steese subunits.</p>	<p>Alternative B could result in 37 additional jobs and up to \$1.2 million in additional income relative to Alternative A. New jobs would be in the Fortymile and Steese subunits.</p>	<p>Alternative C could result in 115 additional jobs and up to \$3.7 million additional income relative to Alternative A. New jobs would be in the Fortymile and Steese subunits.</p>	<p>Alternative D could result in 193 additional jobs and up to \$9 million in additional income relative to Alternative A. New jobs would be in the Fortymile and Steese subunits.</p>	<p>Same as Alternative B.</p>
<b>Environmental Justice</b>	<p>In twelve communities within the planning area, minorities, primarily Alaska Natives, make up 50 to 100 percent of the population. These communities have significantly subsistence oriented economies. Activities restricting subsistence practices, access, and resources may affect a segment of the local population. Activities likely to occur, other than those associated with mineral extraction or oil and gas, would primarily be transitory in nature, of short duration, and highly localized. Activities could temporarily divert, deflect, or disturb subsistence species from their normal patterns. These activities could alter the availability of subsistence species in traditional harvest areas, which could in turn affect harvest patterns by requiring hunters to travel further in pursuit of resources. Increased travel distances would result in greater expenditures for fuel and equipment. There could be an effect on the subsistence harvest activities of local minority populations as a result of these activities. The effects would likely be minor, short-term, and highly localized. Mining of locatable minerals could result in additional jobs and income to local residents in the environmental justice population, in the Fortymile and Steese Subunits. Increases in recreational use could result in positive effects if employment in guiding or associated activities accrue to local populations. This would be most likely under Alternative D.</p>				
<b>Social Conditions</b>	<p>Impacts to social conditions would result from a wide range of management decisions. Most impacts result in positive benefits to some individuals and groups, with negative impacts to others. Most impacts to individuals and groups would be minor to moderate in part because other opportunities exist for the activities within the planning area and on nearby lands managed by the State of Alaska or Native corporations. While it is possible for impacts from multiple resources to adversely affect individuals and groups in a cascading fashion, most individuals and communities exhibit sufficient resiliency to adapt.</p>				
<b>Subsistence</b>	<p>Any land disturbing activities have the potential to alter habitat, create barriers or directly disturb subsistence resources and therefore impact distribution and availability of the resources. Management measures to protect fish and wildlife, vegetation, soil and water resources would generally benefit subsistence resources through maintenance of healthy, functioning watersheds, riparian areas and high quality habitats to support healthy populations of fish, wildlife, and plant resources.</p>				

## 2.11.2. Comparison of Impacts Fortymile Subunit

The following table outlines impacts that would occur in the Fortymile Subunit. These are in addition to the impacts discussed as common to all subunits under Table 2.26, “Comparison of Impacts: Common to All Subunits”.

**Table 2.27. Fortymile Subunit: Comparison of Impacts**

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Fish and Aquatic Species</b>	Effects from mining, recreation, travel management and special designations could occur. Species affected would typically be Arctic grayling and whitefish species. Effects from recreation would be minimal under all alternatives.				
	No Riparian Conservation Areas (RCAs) are identified.	11 RCAs would provide additional protection to high priority fish habitat.	One RCA would be identified, but would have limited effect as it includes very little BLM land.	No RCAs are identified.	Withdrawal of 11 RCAs from mineral entry would provide additional protection to high priority fish habitat.
	Mining could occur on 10,000 acres of existing claims, covering 78 stream miles. Approximately 970 acres (14 stream miles) could be directly disturbed by placer mining. Both suction dredging and placer mining would impact fish. Impacts from suction dredging would be localized and minor assuming active spawning areas are avoided. Impacts from mining would be low to moderate, but could have long-term effects resulting in decreased levels of fish populations at the local level. This alternative likely provides the greatest protection to fish and aquatic resources because disturbance would be limited to fewest acres	Mining could occur on 43 percent of the subunit, or 1,400 stream miles, 1 percent of which are within RCAs. Approximately 1,200 acres (17 stream miles) could be directly disturbed by placer mining. Suction dredging and placer mining would affect impact fish over a larger area. The likelihood of impacts would be greatest in areas of medium to high mineral potential. Over 800 miles of stream with medium to high mineral potential and 44 percent of the stream miles within the subunit would be open to locatable minerals. Impacts may be low to moderate with long-term (10 to 20 years) effects. This would result in decreased levels of fish populations and habitat at the local level.	Mining could occur on 67 percent of the subunit, or 2,100 stream miles, none within RCAs. Approximately 1,200 acres (18 stream miles) could be directly disturbed by placer mining. Suction dredging and placer mining would affect impact fish over a slightly larger area. Over 1,200 miles of stream with medium to high mineral potential and 62 percent of the stream miles within the subunit would be open to locatable minerals. Impacts may be moderate with long-term (10 to 20 years) effects. This would result in decreased levels of fish populations and habitat at the local level. Based on the amount of potential disturbance, adverse impacts to fish and aquatic habitat under this alternative would	Mining could occur on 91 percent of the subunit, or 2,900 stream miles. Approximately 1,400 acres (21 stream miles) could be directly affected by placer mining. Over 1,400 miles of stream with medium to high mineral potential and 90 percent of the stream miles within the entire subunit would be open to locatable minerals. Impacts to fish and aquatic resources in this alternative may be moderate with long-term (10 to 20 years) effects. This would result in decreased levels of fish populations and habitat at local and potentially subunit levels. Alternative D would have the greatest potential for adverse impacts on fisheries and aquatic resources. Cross-country OHV use would be allowed in 97 percent of the subunit. Only 3 percent would be closed to summer use of OHVs.	Mining could occur on 60 percent of the subunit, or 1,900 stream miles. Same as Alternative B, approximately 1,200 acres (17 stream miles) could be directly disturbed by placer mining. Impacts from suction dredging would be the same as Alternative B. Over 1,400 miles of stream with medium to high mineral potential and 59 percent of the stream miles within the subunit would be open to locatable minerals. Impacts may be low to moderate with long-term (10 to 20 years) effects, leading to decreased levels of fish populations and habitats at the local level. The majority of the high value fish and aquatic resources would likely remain intact and functioning. Based on the amount of potential disturbance, adverse impacts to fish would be higher than Alternatives

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>and stream miles. Trail proliferation and cross-country OHV use resulting in increased erosion and sedimentation could have moderate, adverse short- and long-term impacts on fish and aquatic resources. Impacts from OHV use would be higher than other alternatives.</p>	<p>Based on the amount of potential disturbance, adverse impacts to fish and aquatic habitat would be greater than under Alternative A and less than Alternatives C and D. OHV use would be restricted to existing routes and 30 percent of the subunit would be closed to summer OHV use. This Alternative would provide the greatest protection and Impacts from Travel Management would be minimal.</p>	<p>be greater than under Alternative A and B, but less than Alternative D. Effects from Travel Management would be similar to Alternative B, although only 6 percent of the subunit would be closed to summer OHV use.</p>	<p>Unauthorized proliferation of trails may increase with a resulting increase in erosion and sediment impacts. Travel Management could have minor, long-term adverse impacts on fish and aquatic habitats. Effects would be higher than Alternatives B and C, but less than Alternative A.</p>	<p>A and B, but less than Alternatives C and D. Impacts from OHV use would similar to Alternative A. Removal of current restrictions on motorboat use would have little impact on fish or aquatic resources.</p>
	<p>The Fortymile WSR is closed to mineral entry and leasing, except for valid existing claims. Fish and aquatic species would benefit as habitat generally remains intact.</p>	<p>Effects from management of the Fortymile WSR would be similar to Alternative A. Dome and Gold Run Creeks would be recommended suitable for designation as WSRs, benefitting fish and aquatic resources because of development limitations. Designation of the Fortymile ACEC would provide additional protection to fish habitat.</p>	<p>Effects from management of the Fortymile WSR would be similar to Alternative A. The Fortymile ACEC would be designated. The ACEC would be smaller and management less protective than under Alternative B, but its designation would still benefit fish and aquatic species due to the increased resource protection within the ACEC.</p>	<p>Management of the Fortymile ACEC would be less protective. However, fish and aquatic resources could potentially benefit from increased protections the ACEC. Adverse impacts could occur in the “scenic” segments of the Fortymile WSR which would be open to locatable minerals.</p>	<p>Effects from management of the Fortymile WSR would be similar to Alternative A. Designation of the Fortymile and Mosquito Flats ACECs would benefit fish and aquatic resources by limiting adverse impacts from mining on valid existing claims.</p>

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Soil and Water Resources</b>	Impacts could result from locatable mineral activity on 10,000 acres of current mining claims, many of which have been previously worked. It is unlikely extensive additional access roads would need to be constructed in order to reach known mineral deposits. Impacts would be reduced through site-specific analysis and stipulations attached to permits for mining authorizations.	800,000 acres would be opened to placer mining with subsequent construction of roads and/or staging areas. Placer mining utilizing heavy equipment may adversely impact soil resources and water quality through erosion, unintended discharge of sediment laden water, and subsequent increased downstream turbidity. Mining operations could impact the natural flow characteristics of selected river segments. Disturbance would be reduced by SOPs and the site-specific analysis of subsequent authorizations.	The types of impacts would be the same as Alternative B, but would affect more acres. 1,253,000 acres would be open to locatable minerals and new development would likely occur. Since more acres would be open to mineral development than under Alternative B, there would be greater potential for adverse impacts to soil and water resources. Disturbance would be reduced by SOPs and the site-specific analysis of subsequent authorizations.	The types of impacts would be the same as Alternatives B and C, but would affect more acres. 1,713,000 acres would be open to locatable mineral entry. Since more acres would be open to mineral development, there would be a greater potential for adverse impacts. Alternative D would likely result in the greatest disturbance to soil resources and adverse impacts to water quality. Disturbance would be reduced by SOPs and the site-specific analysis of subsequent authorizations.	The types of impacts would be the same as Alternative B. Although approximately 1.1 million acres would be open to locatable mineral entry in Alternative E, the foreseeable level of mining activity is the same as Alternative B. Disturbance would be reduced by SOPs and the site-specific analysis of subsequent authorizations.
	No substantial disturbance of soils or impacts to water quality would be expected from recreation unless there were a substantial increase in development or recreation use levels.	Use of trails, picnic and camping areas, and facilities would likely result in moderate soil disturbance and limited impacts to water quality in localized areas.		Effects would be similar to Alternatives B and C, except there would be an increased potential for adverse effects to soil and water resources because there would be more emphasis on recreational infrastructure development.	Impacts would be similar in magnitude and extent to Alternatives B and C.
	Impacts from Travel Management would depend on size of vehicle, season of travel, and number of trips. With no OHV	Impacts would be lower than Alternative A due to implementation of OHV designations. OHV use would be limited to existing trails on 71	OHV use would be limited to existing trails on 94 percent of the subunit. Impacts on soil and water resources would be somewhat	This alternative differs in that cross-country summer use of OHVs would be allowed on 97 percent of the subunit. Since Alternative D would increase the acreage	Impacts to soil and water resources would be similar to Alternatives A and D. Cross- country OHV use would be allowed, however, use would be slightly more

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	designation in place outside of the WSR Corridor, there may be detrimental impacts to soil resources and watersheds from proliferation of user-created trails, subsequent soil erosion, and increased siltation in streams.	percent of the subunit. No substantial adverse impacts are expected because measures to reduce impacts to soil and water resources include trail maintenance on existing trails, summer OHV use restrictions and OHV weight restrictions.	greater when compared to Alternative B because of the increased acreage open to summer OHV use and the allowance for off-trail travel for game retrieval.	open to cross-country OHV travel compared to other Alternatives it would have the greatest potential for direct and indirect adverse impacts to soil and water resources associated with OHV use.	restricted than in Alternative A because weight limitations would apply to the entire subunit. Summer OHV use would be closed in the Mosquito Flats ACEC, providing protection for soil, water, and wetland resources.
<b>Wilderness Characteristics</b>	Wilderness characteristics would not be directly protected.	Wilderness characteristics would be protected on 51 percent of the subunit. Lack of activity and other management actions could indirectly protect wilderness characteristics on the remaining 49 percent of the subunit. Naturalness may be impacted over the short-term in localized areas.	Wilderness characteristics would be protected on 26 percent of the subunit. Lack of activity and other management actions could indirectly protect wilderness characteristics on the remaining 74 percent of the subunit. Naturalness may be impacted over the short-term in localized areas.	Wilderness characteristics would be protected on 3 percent of the subunit. Lack of activity and other management actions could indirectly protect wilderness characteristics on the remaining 97 percent of the subunit. Naturalness may be impacted over the short-term in localized areas.	Wilderness characteristics would be protected on 30 percent of the subunit. Lack of activity and other management actions could indirectly protect wilderness characteristics on the remaining 70 percent of the subunit. Naturalness may be impacted over the short-term in localized areas.
<b>Wildlife</b>	The subunit is closed to leasable minerals.	Although 47 percent of the lands would be open to leasable minerals, many sensitive wildlife habitats would be closed. If exploration occurred, there may be localized impacts to wildlife and habitat.	Effects would be similar to Alternative B, except a larger area and more of the caribou calving habitat would be open to leasing.	Effects would be similar to Alternatives B and C, except a larger area and most of the caribou calving habitat would be open to leasing.	Although 60 percent of the lands would be open to leasable minerals, many sensitive wildlife habitats would be closed. If exploration occurred, there may be localized impacts to wildlife and habitat.
	This alternative would minimize the potential for impacts to wildlife. Mining is occurring only on existing	Although 47 percent of the lands would be opened to locatable minerals, many sensitive wildlife habitats would	Effects would increase as 67 percent of the lands would be opened. Potential impacts to caribou calving and	About 91 percent of the lands would be opened, including most of the caribou calving/postcalving habitat on BLM land. Of	Although 60 percent of the lands would be opened to locatable minerals, many sensitive wildlife habitats would remain closed.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>mining claims (10,000 acres). Current mining is mostly suction dredging and small placer mines and is concentrated along and near the road- and river-accessible portions of the Fortymile WSR. These effects are mostly local in nature.</p>	<p>remain closed. Impacts on caribou and Dall sheep would be minor. Increased levels of suction dredging may result in disturbance to nesting peregrine falcons. Although the increase in mining activity is predicted to be small, the location of mining may change, requiring access (roads and trails) which may have larger impacts on wildlife. Application of SOPs would result in relatively minor reductions in impacts.</p>	<p>postcalving habitats will be greater, but the most important caribou habitats on the BLM land would remain closed, as would Dall sheep range and mineral licks. Increased levels of suction dredging may result in disturbance of more peregrine falcon nest sites. Although, the increase in mining activity is predicted to be small, new mines may be initiated in remote areas, requiring access which may have larger impacts on wildlife. Application of SOPs would result in relatively minor reductions in impacts.</p>	<p>the Fortymile caribou herd's recent calving/postcalving range, the only large area closed to locatable minerals would be within the Yukon-Charley Rivers NP. Seventy percent of the areas most highly used for caribou calving will be open to mineral entry. At predicted levels of mining, impacts on caribou would be modest during life of the plan. However, the increase in mining could be larger than predicted or located in key habitats, resulting in larger impacts. Increased levels of suction dredging may result in disturbance of more peregrine falcon nest sites. Despite the SOPs, disturbance of caribou, sheep, and undocumented raptor nests will still occur.</p>	<p>Potential impacts to caribou calving and postcalving habitats would be less than in Alternative D and similar to Alternative C. Of BLM lands in the area of concentrated calving/postcalving used during the last 16 years, 51 percent would remain closed to mineral entry. As would Dall sheep range on BLM land. Although the increase in mining activity is predicted to be small, operations may be larger than predicted. Also new mines may be located in remote areas, requiring access (roads and trails) which may have larger impacts on wildlife.</p>
	<p>Recreation affects wildlife primarily along the Taylor Highway and road-accessible river sections. Wildlife is displaced, at least temporarily, by recreational activities, and that effect is greater at high use sites. Disturbance of nesting raptors can potentially lead to</p>	<p>Impacts would be similar to Alternative A. The Fortymile SRMA (798,000 acres) has specific management objectives and prescription settings. Most of the SRMA would be managed for Semi-Primitive or Backcountry settings. This high proportion of Semi-Primitive and Backcountry management</p>	<p>Only the Fortymile WSR Corridor is included in the SRMA. The smaller SRMA would probably result in little difference in management, use or effects, in the near future. However, more accessible portions will likely see greater recreation-related changes, and access could be developed to some currently remote</p>	<p>As in Alternative C, only the Fortymile WSR Corridor is included in the SRMA. Some sections would be managed to allow greater recreation-related change to the landscape (e.g., more Frontcountry and Middlecountry), resulting in corresponding increases to impacts to wildlife, particularly in the more accessible portions of the subunit. Impacts to nesting</p>	<p>Same as Alternative C.</p>

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	<p>nest abandonment or reduced survival of nestlings and likely occurs at times along the Fortymile River. Recreational OHV users are becoming more abundant, traveling further and expanding the zone of impact, though use and impacts are still concentrated closer to roads.</p>	<p>will limit impacts to wildlife. Potential impact to nesting raptors may be reduced by implementation of the SOPs (Appendix A).</p>	<p>areas for purposes such as mining. Objectives for more intensive use in portions of the Fortymile WSR Corridor would result in somewhat greater changes to wildlife habitats than in Alternative B. Impacts to nesting raptors may be reduced due to the SOPs.</p>	<p>raptors may be reduced due to the SOPs.</p>	
	<p>There are no OHV designations and OHV use is relatively unrestricted outside of the Fortymile WSR Corridor. The summer cross-country use of OHVs has resulted in a proliferation of trails leading to local habitat impacts and disturbance impacts. The network of user-created, unsustainable trails can be expected to grow substantially under this alternative, with corresponding increase in impacts to wildlife.</p>	<p>Summer use of OHVs would be prohibited in Semi-Primitive areas (30 percent). On the remainder of the subunit, summer use of OHVs would be limited by weight (1,000 pounds curb weight; 1,500 pounds in Fortymile subunit) and to existing routes. These restrictions would greatly reduce potential impacts to wildlife through minimizing proliferation of new trails and reducing impacts to wildlife habitats from off-trail use.</p>	<p>Summer OHV use on existing routes would be allowed in essentially the entire subunit, except the Semi-Primitive portions of the Fortymile WSR Corridor (6 percent). The increase in impacts to wildlife would be small, because existing routes are very limited in the portion of the corridor which would be opened to OHV use (head of Hutchinson Creek). New managed trails that may be created, would be routed to minimize impacts to wildlife. Effects relative to Alternative B is dependent on extent of new access created for other activities.</p>	<p>The area where summer OHV use would be allowed would expand relative to Alternative C, due to less area in Semi-Primitive classifications (3 percent). In areas open to summer use, OHVs would be allowed to travel cross-country. Impacts under this alternative would be similar to Alternative A. Although summer OHVs would be limited to 1,000 pounds curb weight (1,500 pounds in Fortymile subunit), an expanding network of user-created trails can be expected.</p>	<p>Effects from OHVs will be similar to Alternative D because cross-country summer OHV travel will be allowed. Additionally summer OHV use would be allowed in essentially the entire subunit (except the Mosquito Flats ACEC). Use of airboats and hovercraft in the Mosquito Fork upstream into the Mosquito Flats wetlands could affect waterfowl nesting and moose calving. Timing of motorboat use may reduce impacts. Future travel management planning, to be completed within five years, may reduce impacts of summer OHVs.</p>

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>No ACECs exist, meaning special management considerations are not afforded to sheep and caribou.</p>	<p>The Fortymile ACEC (690,000 acres) would be managed to protect Fortymile caribou calving/postcalving and Dall sheep habitat. The ACEC would be closed to leasable and locatable minerals. Potential impacts to caribou would be small, but larger than in Alternative A (which has no ACEC, but where all caribou habitat is closed to locatable minerals).</p>	<p>A smaller Fortymile ACEC would be designated (554,000 acres). Portions of the ACEC would be open to mineral entry and leasing. Relative to Alternative B, this alternative would increase the potential for fragmentation of caribou calving/postcalving habitat.</p>	<p>554,000 acres would be designated as the Fortymile ACEC. The vast majority of the ACEC, including the most highly used caribou calving habitat and all Dall sheep habitat, except mineral licks, would be open to locatable minerals. Some fragmentation of habitats and reduction in habitat quality for caribou and Dall sheep are likely under this alternative.</p>	<p>362,000 acres would be designated as the Fortymile ACEC and 37,000 as the Mosquito Flats ACEC. Both ACECs would be closed to mineral location and leasing. Designation of these ACECs would benefit caribou, Dall sheep, moose, and wildlife using wetlands habitats. The majority of trumpeter swan nesting on BLM lands within the planning area occurs in Mosquito Flats and the area supports an unusually dense population of short-eared owls.</p>
<p><b>Locatable</b></p>	<p>Potential for exploration and development would be limited to 10,000 acres of existing mining claims. Mining activity would likely decrease as there would be no opportunities to stake new federal claims to offset claim attrition.</p>	<p>1,076,000 acres would remain closed to locatable minerals. Closures in the Fortymile River would have the most impact as this area has high mineral potential. Operating mining claims in the drainage currently exist, but if they were lost no additional staking could be made. Closures would constrain extraction of the minerals and their benefits to society would remain unavailable for the foreseeable future. Additionally, the infrastructure that typically accompanies development would not occur.</p>	<p>623,000 acres would remain closed. Although substantially more area would be opened to locatable minerals, impacts would be similar to Alternative B as the higher potential and more accessible areas in the Fortymile WSR Corridor would remain closed. The Mosquito Flats medium potential area would be open.</p>	<p>163,000 acres in the “wild” and “recreational” segments of the Fortymile WSR Corridor would remain closed, limiting development in these high potential areas. The “scenic” segments of the Fortymile Corridor would be opened, allowing for staking of new claims in one high potential area with relatively good access. Extraction of minerals would be less constrained than under other alternatives.</p>	<p>745,000 acres would remain closed to locatable minerals. Estimated mining activity and impacts would be the same as Alternative B. As in other alternatives, closure of the Fortymile River would have the most impact as this area has high mineral potential. Mosquito Flats, an area with medium mineral potential, would be closed.</p>

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Recreation</b>	Land use authorizations could result in additional development that may adversely affect those areas managed for Primitive or Semi-Primitive recreation experiences. Land use authorizations could also result in increased access opportunities. The Fortymile Subunit would continue to be managed for a variety of recreational opportunities. Existing facilities would be maintained. These actions would directly affect recreation management by ensuring that land- and water-based recreational opportunities continue to exist in both designated and undesignated areas.				
	Operators working state mining claims in the “wild” segments of the Fortymile WSR must camp below ordinary high water, because BLM does not allow long-term camping permits. The entire camp, as well as the suction dredging operation, is visible to recreational users. This may negatively effect those users anticipating a Primitive recreational experience on the “wild” segments of the Fortymile River.	The authorization of long-term camping permits in support of nearby state mining claims would not be allowed in any parts of the Fortymile WSR Corridor. This restriction would impact the scenic view shed and Primitive recreational experiences on any segment of the river where suction dredging was occurring on state mining claims. Effects would be similar to Alternative A, but would extend to the “scenic” and “recreational” segments of the Fortymile.	Effects from long-term camping would be the same as Alternative A.	The authorization of long-term camping permits in support of nearby state mining claims would be allowed in all segments of the Fortymile WSR Corridor. Camps associated with suction dredging could be located on the uplands. Recreational users of the river would still see the suction dredging operation, but camps would be screened from view, reducing impacts to scenic quality. The recreational experience on the “wild” segments of the Fortymile would likely be of a more Primitive nature.	Same as Alternative D.
	Mining and associated infrastructure could compromise the experiences of recreation users whose expectations include a high degree of solitude and tranquility, within a naturally-appearing landscape. Adverse impacts could also arise from intrusive noise and altered view shed. Impacts	Impacts would be similar to, but somewhat greater than Alternative A as mining activity increases in response to opening 800,000 acres to locatable minerals. These effects would mostly occur in areas of dispersed recreation use. Areas that currently have the most concentrated recreation use (e.g., Fortymile WSR Corridor, Fort Egbert	Impacts would be similar to, but slightly greater than under Alternatives A and B. 1,253,000 acres would be opened to locatable minerals. As in Alternative B, areas of concentrated recreational use would remain closed to new mineral entry.	Impacts would be similar to, but slightly greater than under Alternatives A, B and C. 1,713,000 acres would be opened to locatable minerals. The “scenic” segments of the Fortymile WSR would be opened to new mineral entry. Unlike the other alternatives, there would be effects from new mineral entry within portions of the Fortymile WSR Corridor.	In this alternative, 1,132,000 acres would be open to locatable minerals. The predicted level of mining activity and impacts would be the same as Alternative B.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	would be limited to 10,000 acres of existing mining claims, some of which are in the Fortymile WSR Corridor.	Historic Site, and Eagle Recreational withdrawal) would remain closed, but mining could occur on existing claims.			
	The Fortymile WSR Corridor (248,000 acres) would be managed as an SRMA. Facility enhancements (e.g., toilets, boat ramps) may be added to accommodate recreation demand.	The Fortymile SRMA would include 799,000 acres. Ninety-eight percent of the SRMA would be managed for Semi-Primitive (78 percent) or Backcountry (20 percent) settings. A much greater portion of the subunit would be reserved for the Semi-Primitive experiences of non-motorized use. Construction of facilities would be limited. These decisions would provide high-quality recreation opportunities for those users who desire an experience characterized by solitude, tranquility, and self-reliance.	The SRMA would be 248,000 acres, resulting in less facility enhancements and fewer restrictions on OHV use. Slightly more motorized opportunities would be available. Similar to Alternative B, management in the SRMA would provide for multiple recreation activities within a variety of RSC settings. Ninety-one percent of the SRMA would be managed for Semi-Primitive (58 percent) or Backcountry settings (33 percent). Like Alternative B, Semi-Primitive accounts for the largest setting. Effects on recreation from these settings would <i>similar to those described</i> under Alternative B.	The SRMA would include the same lands as Alternative C, but management of the SRMA would differ. Similar to Alternatives B and C, management in the SRMA would provide for multiple recreation activities within a variety of RSC settings. Only 22 percent of the SRMA would be managed as Semi-Primitive. Consequently, a much greater portion of the subunit is reserved for the Backcountry and Middlecountry activities of motorized use. More motorized opportunities would be available and enhancement of recreation facilities would be more likely than in Alternative C.	The SRMA would be 248,000 acres and impacts would be the same as Alternative C.
	There are no OHV designations. Travel within the Fortymile WSR Corridor is limited by weight, while travel outside	The OHV designation would be limited. Semi-Primitive areas (626,000 acres) would be closed to summer OHV use. More area would	The OHV designation would be limited. Effects would be similar to Alternative B, except more area would be available for	The OHV designation would be limited. Effects would be similar to Alternative B, except more area would be available for recreational activities that involve	Effects would be similar to Alternatives A and D in that cross-country OHV use would be allowed. Use would be slightly more restricted than in Alternative

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	<p>of the corridor is generally unrestricted. Resource and user conflict issues would not be addressed, possibly resulting in emergency closures to motorized use. There could be long-term, detrimental impacts to scenic view shed that enhance the quality of recreational experiences. While Alternative A would offer the most opportunities for motorized recreational activities; fewer opportunities would exist for semi-Primitive, non-motorized experiences.</p>	<p>be made available for recreational users seeking primitive, non-motorized forms of recreation. In contrast, less area would be available for those users seeking motorized forms of recreation. In the remainder of the subunit summer use of OHVs would be limited by weight and to existing routes. These management actions would negatively impact those users who utilize OHVs for accessing remote areas, and by those retrieving game. Alternative B offers the least opportunity for recreational activities involving motorized travel.</p>	<p>recreational activities that involve summer OHV use, because the Semi-Primitive area would be smaller (144,000 acres). In the remainder of the subunit, summer use of OHVs would be limited by weight and to existing routes, except for game retrieval. The would provide a direct benefit to recreational hunters who could retrieve legally harvested big-game animals off of pre-existing routes.</p>	<p>summer OHV use. The Semi-Primitive area (54,000 acres), which limits summer motorized use, encompasses only 3 percent of BLM lands, compared to 6 percent in Alternative C, 30 percent in Alternative B and none in Alternative A. These decisions could potentially diminish the recreational experience of users seeking a primitive, non-motorized type of experience, while increasing the area available for motorized use. There could be an increase in user conflict issues.</p>	<p>A because weight limitations would apply to the entire subunit. Summer use would be precluded in the Mosquito Flats ACEC (2 percent of BLM lands). All forms of motorized boat travel including hovercraft and airboats would be allowed in all segments of the Fortymile WSR. While providing more opportunity for motorize travelers, motorized boat use on wild segments of the river may detract from the naturalness enjoyed by most recreational users. Limitations in topography, access, and water levels will minimize the occurrence of user conflicts.</p>
	<p>No ACECs are designated.</p>	<p>Designation of the Fortymile ACEC (690,000 acres) would maintain or protect wildlife habitat, potentially resulting in beneficial impacts on wildlife viewing and hunting. Negative effects may also result, if additional restrictions are placed on recreational activities. Designation of Gold Run and Dome Creek</p>	<p>554,000 acres would be designated as the Fortymile ACEC. Effects would be the similar as those discussed under Alternative B, except less area would be designated to protect caribou and Dall Sheep habitat.</p>	<p>554,000 acres would be designated as the Fortymile ACEC. Effects would be the similar as those discussed under Alternative B, except management in the ACEC would be less protective of caribou and Dall sheep habitat. Thus, less potential would exist for beneficial impacts on wildlife viewing and hunting.</p>	<p>Designation of 362,000 acres as the Fortymile ACEC and 37,000 acres as the Mosquito Flats ACEC would maintain or protect wildlife habitat, with potential benefits on wildlife viewing and hunting opportunities. Negative effects may also result from designation where additional restrictions are placed on OHV use (Mosquito Flats ACEC) or other recreational activity. Positive effects of the Mosquito Flat</p>

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
		as WSR rivers, would provide long-term, beneficial experiences for individuals seeking historical and cultural appreciation opportunities.			ACEC includes protection of a sensitive wetland environment used for moose hunting. Conflict between recreational users may be reduced.
<b>Travel Management</b>	Mineral development has the potential to affect travel and transportation management through the expansion of the existing route network. The construction of winter roads and trails for mineral development would provide a direct benefit to OHV users through the enhancement of public access opportunities. These effects would be the highest under Alternatives C and D, and the lowest under Alternatives A, B and E. Management of the Fortymile WSR would impact travel in the “wild” segments where the construction of new roads, primitive roads, trails, or other provisions for overland motorized travel would generally not be permitted (BLM 8351 Manual).				
	Although the Fortymile WSR is managed as a SRMA, Recreation Opportunity Spectrum (RSC) classes are not established. RSC provides a framework for identifying the types of recreation activities to be managed for and is directly related to the travel management.	The RSC setting would maintain 78 percent of the Fortymile SRMA as Semi-Primitive, catering to non-motorized summer use and the winter-use of snowmobiles. The remaining 22 percent would provide opportunities for summer OHV use, but would limit use to existing routes. This alternative would limit travel management the most.	Fifty-eight percent of the SRMA would be managed as Semi-Primitive. The remaining 42 percent would provide opportunities for summer OHV use but would limit use to existing routes, except for game retrieval. This alternative would limit travel management less than Alternative B, but more than Alternatives D and E.	Twenty-two percent of the Fortymile SRMA would be managed as Semi-Primitive. The remaining 78 percent would provide opportunities for summer OHV use, including cross-country travel. More opportunities would exist for motorized travel, compared to Alternatives B and C, but less than Alternatives A and D.	Same as Alternative C, 58 percent of the SRMA would be managed with an emphasis on non-motorized recreational activities and the winter use of snowmobiles. The remaining 42 percent of the SRMA would be managed for more motorized recreational access.
	With no OHV limits outside of the Fortymile WSR Corridor, this alternative would provide the greatest opportunity cross-country motorized activities. For travelers seeking non-motorized forms	OHV designations would be established. Summer OHV use would be restricted to existing routes and vehicle weight on 70 percent of the subunit. Thirty percent would be closed to summer OHV use. Weight restrictions would apply to all areas during	OHV designations would be established. Effects would be similar to Alternative B, except 94 percent of the subunit would be made available summer OHV travel and off route travel could occur to retrieve game. This would provide a direct benefit to	OHV designations would be established. Ninety-seven percent of the subunit would be available for cross-country OHV travel, subject to weight limitations. Only 3 percent of the subunit would be closed to summer OHV use. Weight restrictions would apply to all areas during the winter.	Impacts would be the similar to Alternative A with the exception of more restrictive weight limitations outside of the SRMA and accommodation for the use of UTVs. A positive effect on users and compliance with weight restrictions would be anticipated. Allowance for slightly larger

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	of transportation, the Fortymile Subunit would continue to be managed to provide opportunities of a more primitive nature.	the winter. Restrictions would impact users by limiting OHV use where no limits have been in place before. Limitations imposed on summer-use of OHVs, may make some areas inaccessible, due to lack of existing routes. There would be a greater affect on non-local users who visit during the summer when OHV use is most restricted.	recreational hunters who could retrieve legally harvested big-game animals off of existing routes. Impacts on travel management would be slightly less for this alternative, when compared to Alternative B.	Unlike Alternatives B and C, cross-country travel would be allowed under this alternative. While more area is available to motorized users, less area is available for users seeking a primitive, non-motorized type of experience.	vehicles (UTVs) within the SRMA would have little impact on existing trail width or condition. Allowance for all forms of motorboats, including hovercraft and airboats would not greatly increase the use of these types of craft, due to natural barriers and low water which limit access.
No ACECs are designated.	Designation of the Fortymile ACEC could affect travel management if additional restrictions were placed on OHV use or trail construction. Impacts are expected to be negligible. Designation of Gold Run as a "wild" river would limit travel management options in the corridor. .	Effects of ACEC designation would be the similar to Alternative B, except the ACEC would be smaller, resulting in less effect to travel management. Additionally, part of the ACEC would be open to mineral exploration and development. If mining activity occurred, additional travel routes could be established and be added to the trail network.	Effects of ACEC designation would be the similar to Alternative B, except the entire ACEC would be open to mineral exportation and development, increasing the potential for establishment of additional travel routes.		Seasonal restrictions on summer OHV use in Mosquito Flats ACEC would limit motorized access within the wetlands (where travel is difficult due to wet conditions), but would not affect user-created routes surrounding the wetland. New routes may be pioneered around the ACEC to serve as new access points for non-motorized hunting within the ACEC. Management prescriptions for the Fortymile ACEC include no cross-country summer use. However, existing sustainable travel routes would likely be available for use limiting impacts to travelers.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Wild and Scenic Rivers</b>	No rivers are recommended suitable for addition to the Wild and Scenic Rivers System.	Gold Run and Dome Creek would be recommended suitable for designation as WSR, protecting their free-flow and ORVs until Congress made a decision on designation. Surface-disturbing activities could affect water quality. Mining on existing claims in Dome Creek could destroy the historic mining values that make the creek eligible for designation and also impact its free-flow.	Gold Run and Dome Creeks would not be recommended as suitable for designation. Designation and management of the Fortymile ACEC would protect Gold Run creek from impacts due to mining.	Gold Run and Dome Creeks would not be recommended as suitable for designation.	Same as Alternative C.
<b>Subsistence</b>	Alternative A would not significantly restrict subsistence use by communities in and adjacent to the planning area, as impacts to subsistence resources would be minimal. Impacts to subsistence species are expected to be localized and temporary and are not expected to impact resources at the population level. No impacts to access by subsistence users are anticipated.	Alternative B would not significantly restrict subsistence use of or access to fish, wildlife and vegetative resources by residents in the subunit. Most impacts to subsistence resources would be beneficial, and any impacts by way of the limited amount of development allowed to occur under this alternative would be minimized by Fluid Mineral Leasing stipulations and SOPs (Appendix A).	Alternative C would not significantly restrict subsistence use by communities in the planning area. Most impacts to subsistence resources and uses would be negligible, and any impacts from the limited amount of development allowed to occur would be minimized by the Fluid Mineral Leasing Stipulations and SOPs. Impacts to subsistence species would be localized and temporary, and not expected to impact resources at the population level. No impacts to access by	Alternative D, in and of itself, would not significantly restrict subsistence use by communities in or near the planning area given anticipated levels of development and application of the Fluid Mineral Leasing stipulations and SOPs.	Alternative E would not significantly restrict subsistence use by communities in the planning area. Most impacts to subsistence resources and uses would be negligible, and any impacts from the limited amount of development allowed to occur would be minimized by the Fluid Mineral Leasing Stipulations and SOPs. Impacts to subsistence species would be localized and temporary, and not expected to impact resources at the population level. No impacts to access

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
			subsistence users are expected to occur.		by subsistence users are expected to occur.
	Alternatives A and B when combined with the cumulative case would not result in significant restrictions.		No reasonably foreseeable significant restrictions have been identified for Alternative C when combined with the cumulative case. Most habitat important to subsistence resources is within the Fortymile ACEC or afforded protection by other management prescriptions.	When combined with the cumulative case, Alternative D may result in a reasonably foreseeable and significant restriction of subsistence use for rural communities within the planning area if significant activity occurs within the calving grounds or other crucial habitat of the Fortymile caribou herd.	Same as Alternative C.

### **2.11.3. Comparison of Impacts Steese Subunit**

The following table outlines impacts that would occur in the Steese Subunit. These are in addition to the impacts discussed as common to all subunits in Table 2.26, “Comparison of Impacts: Common to All Subunits”. Most of the impacts discussed below would also occur within the Steese National Conservation Area.

**Table 2.28. Steese Subunit: Comparison of Impacts**

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Fish and Aquatic Species</b>	Effects from mining, recreation, travel management and special designations could occur. Three species of salmon and numerous resident species could be affected. Effects from recreation would be minimal to minor and easily mitigated under all alternatives. The Birch Creek WSR Corridor is closed to mineral entry, benefitting high-value fish resources. Increased resource protection within the Mount Prindle and Big Windy Hot Springs RNAs could be beneficial to fish and aquatic resources.				
	No Riparian Conservation Areas (RCAs) are identified. However, few surface-disturbing activities are anticipated in riparian areas.	21 RCAs would provide additional protection to high priority fish habitat. Effects would be minimal due to lack of surface-disturbing activities.	18 RCAs would provide additional protection to high priority fish habitat. Effects would be minimal due to lack of surface-disturbing activities.	Eight RCAs would provide additional protection to high priority fish habitats. The protective effect would be limited as most RCAs overlay Birch Creek WSR which is closed to mining.	Same as Alternative B.
	No seismic exploration would occur.	Effects to overwintering fish from winter seismic surveys would be localized and would have little effect on fish populations.			
	Mining could occur on 7,000 acres of existing mining claims (5,000 acres in the Steese National Conservation Area), covering 100 stream miles. 370 acres (6 stream miles) could be directly disturbed by placer mining. Impacts from suction dredging would be localized and may be short or long-term. Impacts from mining would be low to moderate, but could have long-term effects resulting in an overall decrease in levels of fish populations at the local level. This alternative likely provide the	Effects from locatable minerals in the Steese National Conservation Area would be similar to Alternative A except that higher reclamation standards and SOPs would apply. Mining could occur on 41,000 acres (140 stream miles). Ten (6 percent) of these 140 stream miles occur in RCAs. Approximately 500 acres (seven stream miles) could be directly disturbed from placer mining. Impacts would likely be minor as only 9 percent of the stream miles are open to mining and only one mile falls in a high mineral potential area.	Mining could occur on 279,000 acres (430 stream miles), including parts of the Steese National Conservation Area. Ten (2 percent) of these 430 stream miles occur in RCAs. Approximately 770 acres (11 stream miles) could be directly disturbed from placer mining. Opening 250 stream miles to mining in medium to high mineral potential areas and the absence of higher reclamation standards on 95 percent of these streams, would result in readily detectable and long-term (10 to 20 years) adverse impacts. This could result in a downward trend of fish populations	Mining could occur on 699,000 acres (920 stream miles), including part of the Steese National Conservation Area. Sixty (6 percent) of these 920 stream miles occur in RCAs. Approximately 1,040 acres (15 stream miles) could be directly disturbed from placer mining. Opening 413 stream miles in medium to high mineral potential areas, would increase the potential for impacts. Higher reclamation standards would only apply on 6 percent of these streams. 45 miles of anadromous stream in Preacher Creek basin could be directly impacted by	Mining could occur on 34,000 acres (140 stream miles) including existing mining claims. Mining within the Steese National Conservation Area and RCAs would be limited to valid existing claims. Impacts to fish and aquatic resources would likely be low and localized because all high value fish and aquatic resources (RCAs) would be closed to new mining claims. Only 8 percent of the stream miles within the subunit would be open and only one mile falls within a high mineral potential area. Based on the amount of land open mineral entry, this alternative would provide

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>greatest protection due to the small amount of potential disturbance. Benefits from the higher reclamation standards and SOPs designed reduce recovery time may not occur. Alternative A may have more adverse long-term impacts than other alternatives.</p>		<p>at the watershed scale. Alternative C would provide less protection than Alternatives A and B, but more protection than Alternative D.</p>	<p>placer mining. Localized loss of riparian and streambank vegetation and creation of areas with channel instability could be widespread, creating a matrix of degraded habitats interspersed with “islands” of intact riparian areas. These islands would likely exhibit degraded pool and spawning habitat quality resulting from catchment erosion and downstream sedimentation. There could be significant impacts to both Chinook salmon spawning habitat and the high quality resident fish habitat within Preacher Creek drainage.</p>	<p>more protection to fish and aquatic habitat than Alternatives B, C, and D, but less than A.</p>
	<p>Winter cross-country OHV travel is allowed on 99 percent of the subunit. Only 6 percent of the subunit is closed to summer OHV use. Unauthorized proliferation of trails would result in increased erosion and sediment impacts. There could be localized impacts on fish and aquatic habitats.</p>	<p>Limitations on summer use of OHVs over 99 percent of the subunit would generally benefit fish and aquatic resources because of reduced potential for erosion and sedimentation associated with trail proliferation.</p>	<p>Closing 52 percent of the subunit to summer OHV use would benefit fish and aquatic resources. In the remaining areas, summer OHV use would be limited to existing routes. Impacts to fish and aquatic resources would be highly localized and associated with route erosion and stream crossings. Impacts would be minor and generally short-term.</p>	<p>Effects from Travel Management would be similar to, but more beneficial than Alternative A, as 40 percent of the subunit would be closed to summer OHV use.</p>	<p>Effects from Travel Management would be similar to Alternative A. Use of snowmobiles in research natural areas would not affect fish. Use of hovercraft or airboats on Birch Creek are not likely to affect fish or aquatic resources. This alternative provides less protection to fish from OHVs than Alternatives B, C, or D.</p>
<p>Management of Birch Creek WSR would benefit high-value</p>		<p>Effects from Birch Creek WSR and the RNAs would be the same as</p>	<p>Effects from Birch Creek WSR and the RNAs would be the</p>	<p>Effects from Birch Creek WSR and the RNAs would be the</p>	<p>Effects from Birch Creek WSR and the RNAs would be the</p>

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	fish resources. Fish and aquatic resource values are not high within the Mount Prindle and Big Windy Hot Springs RNAs, however increased resource protection in these areas could be beneficial.	Alternative A. The Steese ACEC (924,000 acres) would provide additional protection to fish and aquatic habitat outside of the Birch Creek WSR Corridor. Big Windy Creek would be recommended suitable for designation as a WSR, providing additional protection to low-value fish and aquatic resources.	same as Alternative A. Proposed management of a smaller Steese ACEC (457,000 acres) would provide additional protection to fish and aquatic habitat.	same as Alternative A. The Steese ACEC (193,000 acres) would provide less protection to fish and aquatic habitats because the ACEC is smaller and includes less fish habitat.	same as Alternative A. Effects from the Steese ACEC (457,000 acres) would be the same as Alternative C.
<b>Soil and Water Resources</b>	Four transportation corridors are established in the Steese National Conservation Area. The construction of new trails or roads within the corridors would adversely impact soil and water resources through increased erosion and siltation of streams. Impacts to soil and water resources would be reduced through site-specific analysis of subsequent authorizations.	Concentrated use in two transportation corridors would likely impact soil resources and potentially water resources, but would limit disturbance to a discrete area. Impacts to soil and water resources would be reduced through SOPs and site-specific analysis of subsequent authorizations. Right-of-way avoidance areas would provide protection for soil and water resources.	Effects to soil and water resources would be similar to Alternative B; two transportation corridors would be retained. However, there would be no right-of-way avoidance areas.	This alternative would provide the least amount of protection for soil and water resources because more lands would be open to potential ground disturbing activities such as mining and road construction. No transportation or right-of-way avoidance areas would be designated.	Same as Alternative C.
	Impacts could result from locatable mineral activity on current mining claims (7,000 acres), some of which have been previously worked. Impacts would be	34,000 acres would be opened to mining and additional access routes would likely be constructed. Placer mine operations have the potential to adversely impact soil resources and	Impacts would be similar to Alternative B, except they would potentially affect more acres and require additional access. 274,000 acres would be open to locatable minerals and new development	Impacts would be similar to Alternatives B and C, but would affect more acres. 682,000 acres would be open to locatable mineral entry. Since more acres would be open to mineral development there	Impacts would be the same as Alternative B, except only 30,000 acres would be open to locatable mineral entry. Alternative E would have higher potential for adverse impacts to soil and water resources than

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	reduced through site-specific analysis and stipulations attached to permits for mining authorizations.	water quality through erosion of soils and fine-grain sediments and subsequent increased downstream turbidity in nearby streams. Mining operations could impact the natural flow characteristics of selected river segments. Impacts would be reduced through SOPs and site-specific analysis of subsequent authorizations.	would likely occur. Since more acres would be open to mineral development than Alternative B, there would be greater potential for adverse impacts to soil and water resources under Alternative C. Impacts would be reduced through SOPs and site-specific analysis of subsequent authorizations	would be greater potential for adverse impacts. Impacts would be reduced through application of SOPs and site-specific analysis of subsequent authorizations. Alternative D would likely result in the greatest disturbance to soil resources and adverse impacts to water quality.	Alternative A, but less than Alternatives C and D. Impacts would be reduced through SOPs and site-specific analysis of subsequent authorizations.
	Facility enhancements in the Steese National Conservation Area (e.g., roads, toilets, and parking areas) to accommodate increasing recreation demand would likely have limited impacts on soil or water resources. Recreation user activities may result in greater disturbance of soils or impacts to water quality because of limited oversight.	The Steese SRMA would be managed for Primitive recreation experiences of non-motorized use, minimal facilities development, and small user groups. These settings would provide additional protection for soil and water resources. Effects on non SRMA lands would be similar to Alternative A.	The Steese SRMA would be managed for more Semi-Primitive, Backcountry, Middlecountry, and Frontcountry experiences, allowing for increased development of facilities, landscape modifications, and larger group size. Alternative C provides less protection of soil and water resources than Alternative B, but more than Alternatives A and D. Effects on non SRMA lands would be similar to Alternative A.	Slightly fewer acres would be managed for Backcountry experiences and more for Middlecountry experiences compared to Alternative C. There would be an increased potential for adverse effects to soil resources relative to Alternatives B and C because there would be more emphasis on recreational infrastructure development. Effects on non SRMA lands would be similar to Alternative A.	More acres would be managed for Backcountry experiences and fewer acres for Middlecountry experiences compared to Alternative C. There would be an increased potential for adverse effects to soil resources relative to Alternative B, but a lower potential for adverse effects than in Alternatives C and D. Effects on non SRMA lands would be similar to Alternative A.
	Cross-country OHV use is allowed year round on 89 percent of the subunit subject only to weight restrictions; the remaining 11 percent is either closed (3,000 acres)	Same as Alternative A, 3,000 acres would be closed to OHV use. OHV use on 99 percent of the subunit would be limited to winter use of snowmobiles. Winter snowmobile use, both on and off trails, would	Effects to soil and water resources would be similar to Alternative B, but somewhat higher. 3,000 acres would be closed, 602,000 acres would be limited to existing trails, and 677,000 acres would	Effects would be similar to Alternative A but lower. 510,000 acres, or three times the area of Alternative A, would be closed to summer OHV use. Cross-country use of OHVs, subject	Impacts would be the same as Alternative A except 3,000 acres in research natural areas would be open to snowmobiles and use of airboats and hovercraft would be allowed. These exceptions

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	or limited by season of use (142,000 acres). This alternative would likely result in increased detrimental impacts to soil and water resources from proliferation of user-created trails and subsequent erosion.	have little effect on soil and water resources. There would be no substantial adverse impacts to soil and water resources.	be closed to summer OHV use. Limiting OHVs to existing trails on 52 percent of the subunit would reduce effects compared to Alternatives A and D.	to weight restrictions would be allowed year round 60 percent of the subunit. With more cross-country summer OHV use and increased visitation, Alternative D would increased potential for adverse impacts.	would not directly affect soil and water resources. Alternative E would be less protective of soil and water resources than Alternatives B, C, and D.
<b>Wilderness Characteristics</b>	Not Addressed	Wilderness characteristics would be protected on 94 percent of the subunit. Lack of activity and other management actions would indirectly protect wilderness characteristics on the remaining 6 percent of the subunit. Naturalness may be impacted over the short-term in localized areas.	Wilderness characteristics would be protected on 51 percent of the subunit. Low levels of activity and recreation settings would indirectly protect wilderness characteristics on the remaining 49 percent. Naturalness may be impacted over the short-term in localized areas.	Wilderness characteristics would be protected on 38 percent of the subunit. Low levels of activity and recreation settings would indirectly protect wilderness characteristics on the remaining 62 percent. Naturalness may be impacted over the short-term in localized areas.	Wilderness characteristics would be protected on 80 percent of the subunit through management of ACECs and RCAs. Low levels of activity and recreation settings would indirectly protect wilderness characteristics on the remaining 20 percent. Naturalness may be impacted over the short-term in localized areas.
<b>Wildlife</b>	There would be no effects from leasable minerals as the entire subunit is closed to leasing.	Only 34,000 acres near Circle would be open to leasable minerals. Winter seismic exploration could create local displacement of wildlife and some fragmentation of habitat.	274,000 acres would be open to leasable minerals. Effects from exploration would be similar to Alternative B, except that more lands are open to exploration.	682,000 acres would be open. Effects from seismic exploration would be similar to Alternative B, except more sensitive habitats are open, including some caribou calving and Dall sheep habitat.	30,000 acres near Circle would be open to leasable minerals. Winter seismic exploration in these areas could create local displacement of wildlife and some fragmentation of habitat.
	The subunit is closed to locatable minerals. However, mining is occurring on existing mining claims (7,000 acres). Impacts include localized disturbance	Only 34,000 acres near Circle would be open to locatable minerals. Caribou calving/postcalving and Dall sheep habitats would be closed. Impacts would be similar to Alternative	274,000 acres would be open. Dall sheep habitat and most current and historical caribou calving/postcalving habitat would be closed, minimizing impacts to	682,000 acres would be open. In addition to the sensitive habitats opened in Alternative C, this alternative would open additional caribou habitat and a corridor used by Dall	All but 30,000 acres near Circle would remain closed to locatable minerals eliminating potential impacts to Dall sheep and caribou calving habitat other than on existing

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>of wildlife and habitats by road, trails, and mining operations. The period of recovery of riparian and aquatic habitats is typically long. Roads and trails result in increased off-trail OHV use by recreation users. BLM lands historically used by the Fortymile caribou to access calving habitat north of the Steese Highway would be closed to locatable minerals, increasing the likelihood of reestablishment of caribou migration to calving habitat in the North Steese and White Mountains.</p>	<p>A, except near Circle. Additional access could be developed to reach claims. Little additional mining is expected. However, mineral price increases or changes in access could result in greater mining activity than anticipated.</p>	<p>sheep and caribou. Most known priority raptor nest sites are in closed areas. Substantial increases in placer mining activity are predicted, increasing localized disturbance to riparian and aquatic habitats and the miles of roads and trails needed for access. Roads and trails result in increased off-trail OHV use, however summer OHV use will be limited to existing trails in this alternative. Major portions of migration habitats are open to mineral location and leasing. Increased mining activity and density of roads could reduce the likelihood of reestablishment of caribou migration to calving grounds north of the Steese Highway, resulting in an effective loss of habitat.</p>	<p>sheep to access a mineral lick. Use of this corridor by Dall sheep could be impaired by mining or road activity. Impacts to riparian habitats and those due to increased access would be similar to Alternative C but would affect a larger area and may be more extensive as cross-country OHV use is allowed. Almost all of the area historically used by Fortymile caribou to access calving habitat north of the Steese Highway would be open to mineral entry. Relative to Alternative C, this alternative would provide less protection to north Steese National Conservation Area caribou calving/postcalving habitats and less assurance that migration of Fortymile caribou to these habitats will remain largely unimpeded.</p>	<p>claims. Placer mining on 100 existing claims would create areas of localized disturbance to riparian and aquatic habitats, which typically require long recovery periods, and may result in some road and trail construction for access. Almost all of the area historically used by Fortymile caribou to access calving habitat north of the Steese Highway would be closed to mineral entry increasing the potential that caribou will reestablish a pattern of migration north of the highway. Significant growth of the Fortymile herd may depend on expansion into calving range in the White Mountains (Boertje et al. 2012).</p>
	<p>Recreation affects wildlife primarily along the Pinnell Mountain Trail, Birch Creek, Mount Prindle, and in areas of OHV use. Wildlife is displaced, at least temporarily, by recreational activities.</p>	<p>The Steese SRMA would be managed as Primitive, Semi-Primitive, or Backcountry. The level of use expected would have very small impacts to wildlife. Most of the area would be in a Primitive classification (538,000 acres) and would prohibit</p>	<p>Impacts would be similar to Alternative B but more extensive. More lands are designated as Frontcountry and Middlecountry than in Alternative B, resulting in more facilities and greater recreational use, including motorized use. However, most key</p>	<p>The Alternative C Semi-Primitive RMZ adjacent to upper Birch Creek WSR Corridor is changed to Middlecountry or Frontcountry in Alternative D, potentially increasing recreational impacts to migrating caribou. The allowanee</p>	<p>More acres would be managed for Backcountry and Semi-Primitive experiences and fewer acres as Middlecountry experiences compared to Alternative C resulting in fewer facilities and lower levels of recreational use, including motorized</p>

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>Recreational OHV users are more abundant, are traveling further and expanding the zone of impact. Motor boat use on lower Birch Creek results in wildlife disturbance, including potential impacts to a few nesting bald eagles. Disturbance of nesting raptors along Birch Creek can potentially lead to nest abandonment or reduced survival of nestlings.</p>	<p>OHV use, including snowmobiles not used for subsistence purposes. This would largely eliminate potential impacts from recreational motorized vehicle use. Disturbance of raptors and temporary displacement of wildlife could still occur from non-motorized activities, but would be less likely.</p>	<p>wildlife habitats are in Primitive, Semi-Primitive, or Backcountry RMZs, with the exception of much of the caribou migration corridor.</p>	<p>of cross-country OHV use will compound the impacts in areas where allowed (Middlecountry and Frontcountry RMZs). Dall sheep use of a mineral lick on Preacher Creek (in the Preacher Creek RMZ) could potentially be affected by allowed cross-country OHV use, if that level of use increases.</p>	<p>use. Most key wildlife habitats are in Primitive, Semi-Primitive, or Backcountry RMZs with the exception of the caribou migration corridor.</p>
	<p>Most of the subunit is open to cross-country summer OHV travel. The area south of the Birch Creek Corridor, although open to OHVs, has received very little use due to the inability to legally cross Birch Creek and remoteness. If access were developed to the unit from the south, OHV use would likely occur in that area. Development of motorized access would expand the intensity and area of OHV use. Snowmobile use could potentially</p>	<p>Almost the entire subunit is closed to summer OHV use. No effects from recreational summer motorized use would occur, except on BLM lands near Circle and on Birch Creek. Winter OHV use would be allowed on 99 percent of the subunit. Extensive off-trail use could impact wildlife, especially caribou winter habitats that are sparsely or non-forested. However, this use would be monitored and adjusted to minimize impacts to caribou and Dall sheep.</p>	<p>The potential for impacts to wildlife from summer motorized vehicle use will be much reduced in this alternative relative to Alternative A, due to reduced area where OHVs are allowed and restricting of use to existing routes (48 percent is open to summer OHV routes). Similar to Alternatives A and B, 99 percent of the subunit would be open for snowmobile use and impacts would be the same as Alternative B.</p>	<p>Potential for impacts from summer OHV use are greater than Alternative C due to increased area in which summer OHVs are allowed (61 percent of subunit) and allowance of cross-country use. Impacts would be very similar to Alternative A. Alternative D includes the Wolf Creek Semi-Primitive RMZ, which is closed to summer OHV use, while Alternative A allows such use in that area; however the area is essentially inaccessible. Extensive off-trail use by snowmobiles could potentially impact caribou</p>	<p>Impacts would be the same as Alternative A except 3,000 acres in research natural areas would be open to snowmobiles and use of airboats and hovercraft would be allowed. Potential for impacts from summer OHV use are much greater than Alternative C due to increased area in which summer OHVs are allowed (89 percent of subunit). All lands are open to snowmobile use and extensive off-trail use could impact caribou winter habitats that are sparsely or non-forested. However, this use would</p>

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>impact wildlife, especially caribou winter habitats that are sparsely or non-forested.</p>			<p>winter habitats. There are no specific management provisions for monitoring this use and adjusting management.</p>	<p>be monitored and adjusted to minimize impacts to caribou and Dall sheep. Hovercraft and airboat use in Birch Creek could result in disturbance of wildlife.</p>
	<p>Two RNAs are designated. No camping is allowed in the RNAs, limiting human activity and disturbance of Dall sheep, gyrfalcon, and other species.</p>	<p>Effects from RNAs would be the same as Alternative A. The Steese ACEC (924,000 acres) would be designated and managed to maintain caribou and sheep habitat quality. Because of other decisions in Alternative B, ACEC designation would have little additional effect. Big Windy Creek would be recommended suitable for designation as a “wild” river. Designation would have little effect on wildlife due to other management constraints in the area. However, WSR designation would be more permanent than provisions in this RMP.</p>	<p>Allowing primitive camping in the RNAs, may result in slightly greater disturbance of Dall sheep, gyrfalcon, and other species. Relative to Alternative B, this alternative eliminates large areas (457,000 acres) of historical Fortymile caribou calving and migration habitat from the Steese ACEC which could result in reduced potential for future use of these habitats by caribou. The ACEC would result in significant modification of future management in portions of the Clums Fork drainage, an area with many existing mining claims. ACEC designation would limit motorized use and not allow new mining claims. The Clums Fork calving area was used by Fortymile caribou in the 1960s and 1970s. In Alternative A this area was closed to mineral entry to protect caribou calving habitat. The ACEC</p>	<p>Effects from RNAs would be the same as Alternative C. A smaller Steese ACEC (193,000 acres) would be less protective of caribou and Dall sheep habitat. The ACEC would be closed to mineral entry, location, and leasing. However, important sheep and caribou habitats outside the ACEC would be opened to mining and summer cross-country OHV use. Although activities in these areas are currently not heavy, the combined effects of opening them to mineral location, entry, and leasing and allowance of cross-country summer OHV use may result in degradation of wildlife habitat in these areas, including reduced use of the Preacher Creek Mineral lick by Dall sheep, reduced likelihood of recestablishing migration to White Mountains calving range by the Fortymile Herd, and reduced calving</p>	<p>Effects from RNAs would be the same as Alternative C. A Steese ACEC would not be designated in this alternative. Instead, an area equivalent to the Steese ACEC in Alternative C would be delineated as crucial caribou and Dall sheep habitat and very similar management decisions and SOPs applied. Wildlife habitat values should be maintained as in Alternative C, although potentially given slightly lower priority relative to other resources and uses.</p>

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
			designation will maintain the mineral closure, and minimize motorized use at a level which will maintain the value of the habitat for caribou.	habitat quality in these areas.	
<b>Locatable</b>	Potential for exploration and development would be limited to 7,000 acres of existing mining claims. Mining activity would likely decrease as there would be no opportunities to stake new federal claims to offset claim attrition.	Closure of 1,233,000 acres to mineral entry, including some high potential lands, would constrain extraction of the minerals and their benefits to society would remain unavailable for the foreseeable future. Although 34,000 acres of low potential mineral lands would be opened to mineral location, mining opportunity would still be greatly limited.	993,000 acres would be closed. The minerals in closed areas would remain unavailable for the foreseeable future. Potential for mining would increase as 274,000 acres would be opened to mineral location, including some high potential lands with road and trail access.	585,000 acres would be closed. Potential for mining would increase as 682,000 acres would be opened to mineral location, including high potential areas in the North Steese.	1,237,000 acres would be closed to mineral location. Only 30,000 acres would be open to staking of new mining claims. Activity would be limited to small-scale operations due to the limited resource potential. This alternative would provide more opportunities than Alternative A, but would still greatly limit mining opportunity.
<b>Recreation</b>	The Steese National Conservation Area and Birch Creek WSR would continue to be managed to provide a range of recreation opportunities. Birch Creek would continue to be managed to enhance primitive recreational float-boat experiences. Existing facilities would be maintained, ensuring that recreational opportunities continue to exist. Land use authorizations could indirectly and directly impact recreation resources and experiences of naturalness and escape from crowds and pressures of life, in Primitive or Semi-Primitive, or Backcountry Zones.				
	Primitive and Semi-Primitive setting would not be impacted since there is no defined management for lands with wilderness characteristics under this alternative.	1,199,000 acres would protect Primitive and Semi-Primitive settings, enhance related recreational activities, and limit activities that impact wilderness characteristics by the maintenance of wilderness characteristics.	647,000 acres would protect Primitive and Semi-Primitive settings, enhance related recreational activities, and limit activities that impact wilderness characteristics by the maintenance of wilderness characteristics. Development of recreational facilities may be somewhat constrained on 154,000 acres of Backcountry.	483,000 acres would protect Primitive and Semi-Primitive settings, enhance related recreational activities, and limit activities that impact wilderness characteristics by the maintenance of wilderness characteristics. Development of recreational facilities may be somewhat constrained on 407,000 acres of Backcountry.	1,012,000 acres would protect Primitive, Semi-Primitive and Backcountry settings, enhancing related recreational activities and limiting activities that impact wilderness characteristics by the maintenance of wilderness characteristics. Development of recreational facilities may be somewhat constrained

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>Four transportation corridors would impact naturalness if development occurred. Corridors could impact up to 20,000 acres. However, development would be unlikely and as a result, impacts would be minimal. Corridors could also enhance recreation opportunities by providing additional access to remote areas.</p>	<p>Impacts from transportation corridors would be similar to Alternative A except only two corridors are identified. Identification of the Steese ACEC and RNAs as right-of-way avoidance areas would protect recreation resources and experiences of naturalness on 924,000 acres.</p>	<p>Impacts from transportation corridors would be similar to Alternative A, but would be more consistent with recreation management objectives as the corridors cross Middlecountry and Frontcountry Zones. Development of rights-of-ways within corridors would be more likely as some lands would be open to new mineral entry.</p>	<p>No transportation corridors are identified. Approval of rights-of-way would impact recreation resources and experiences such as naturalness. Impacts would depend on the size of the project, level of use, and associated facilities. Future rights-of-way would not be concentrated in corridors, so impacts may be more dispersed.</p>	<p>on 488,000 acres of Backcountry. No transportation corridors are identified. Approval of rights-of-way would impact recreation resources and experiences such as naturalness. Impacts would depend on the size of the project, level of use, and associated facilities. Future rights-of-way would not be concentrated in corridors, so impacts may be more dispersed. Only 30,000 acres would be open to mineral entry, reducing the need for additional access.</p>
<p>There would be no effects from leasable minerals.</p>	<p>Seismic exploration could both improve winter access and impact naturalness through clearing of seismic lines. The experience of escape from crowds would be impacted during seismic operations. Impacts would be minor as seismic exploration would be very limited.</p>				
<p>Mining on 5,000 acres of existing claims in the Steese National Conservation Area would impact naturalness but could improve access. Closure of the remaining lands would protect naturalness and recreation resources.</p>	<p>Mining on existing claims and 34,000 acres of newly opened lands near Circle would impact naturalness but could improve access. Closure of remaining lands, including all of the Steese National Conservation Area, would protect naturalness and recreation resources. Recreation settings would be protected within the Steese National Conservation Area.</p>	<p>Mining on existing claims and 274,000 acres of newly opened lands would impact naturalness, but could improve access. Closure of 993,000 acres would protect naturalness and recreation resources. Recreation settings would be protected on 959,000 acres within the Steese National Conservation Area.</p>	<p>Mining on existing claims and 682,000 acres of newly opened lands would impact naturalness, but could improve access. Closure of 585,000 acres would protect naturalness and recreation resources. Recreation settings would be protected on 648,000 acres within the Steese National Conservation Area.</p>	<p>Mining on existing claims and 30,000 acres of newly opened lands would impact naturalness, but could improve access. Closure of 1,237,000 to mining would maintain naturalness and recreation resources. Recreation settings would be protected within the Steese National Conservation Area.</p>	
<p>The Steese National Conservation Area and Birch Creek WSR Corridor would be</p>	<p>Eighty-three percent of the SRMA would be managed for a Primitive setting; 7 percent for Semi-Primitive</p>	<p>Forty-one percent of the SRMA would be managed for a Semi-Primitive setting; 12 percent for</p>	<p>Eight percent of the SRMA would be managed for a Semi-Primitive setting; 33 percent for</p>	<p>Forty-two percent of the SRMA would be managed for a Semi-Primitive setting; 39 percent for</p>	

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>managed for recreation opportunities based on the recreation opportunity spectrum (RSC) and managed as an SRMA. Management would provide for multiple recreation activities. Facilities could be built to protect resources and to enhance recreation activities and experiences.</p>	<p>(Birch Creek WSR); and 10 percent for Backcountry. Most of the SRMA would be managed for Primitive experiences of non-motorized use, minimal facilities, and small user groups. In the Semi-Primitive and Backcountry areas, facility development would be limited. These settings would protect and enhance the experiences of naturalness, escape from crowds and solitude.</p>	<p>Backcountry; 36 percent for Middlecountry; and 11 percent for Frontcountry. The greater emphasis on Middlecountry and Frontcountry would provide for more facilities development, more motorized recreation opportunities, and larger group sizes than Alternative B. Opportunities for Primitive experiences would be limited as only one percent of the SRMA would be managed as such.</p>	<p>Backcountry; 49 percent for Middlecountry; and 10 percent for Frontcountry. The greater emphasis on Middle- and Frontcountry would provide for more facilities development, more motorized recreation opportunities, and larger group sizes than Alternatives B and C. Opportunities for Primitive experiences would be limited as only 1 percent of the SRMA would be managed as such.</p>	<p>Backcountry; 10 percent for Middlecountry; and 9 percent for Frontcountry. Greater emphasis on Semi-Primitive and Backcountry would result in less facility development and smaller group size. Until development of a travel management plan, Alternative A OHV management would apply. As a result, more extensive summer use of OHVs would impact naturalness through development of user-created trails. Opportunities for primitive experiences would be limited as only 1 percent of the SRMA would be managed as such.</p>
	<p>Closure of 3,000 acres in research natural areas to OHV use would somewhat limit motorized recreation but enhance opportunities for primitive experiences. Prohibitions on summer OHV use on 133,000 acres in Birch Creek and the Primitive Management Unit would negatively impact motorized assisted activities. Allowance of both</p>	<p>Closure of 3,000 acres to OHV use would somewhat limit motorized recreation but enhance opportunities for primitive experiences. Closure of 1,282,000 acres in Primitive, Semi-Primitive, and Backcountry zones to summer OHV use, except by permit, greatly would limit motorized recreation activities but would enhance opportunities for Primitive, Semi-Primitive, and Backcountry experiences.</p>	<p>Opportunities for summer motorized recreation would increase greatly compared to Alternative B. Closure of 3,000 acres to OHV use except by permit would result in impacts similar to Alternatives A and B. Prohibitions on summer OHV use in Semi-Primitive and Backcountry Zones (677,000 acres) and limiting summer OHV use to existing trails on the remaining lands (602,000 acres) would negatively</p>	<p>Opportunities for motorized recreation would increase compared to Alternatives B and C. Closure of 3,000 acres to motorized uses would limit motorized recreation but would enhance opportunities for Primitive experiences. Prohibitions on summer OHV use in Semi-Primitive and Backcountry Zones (510,000 acres) would negatively impact motorized assisted activities. Allowance</p>	<p>Research natural areas (3,000 acres) would be open to winter snowmobile use, negatively impacting non-motorized experiences while enhancing motorized experiences for those that benefit from motorized use. Until development of a travel management plan, Alternative A OHV management would apply. User conflicts would increase, naturalness would be negatively affected, and opportunity for solitude would decrease</p>

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	summer and winter cross-country OHV use on the remaining lands could result in user conflicts and impacts to naturalness, but would provide opportunities for motorized recreation.	Prohibitions on summer OHV use would negatively impact motorized assisted activities such as hunting. Allowance of winter motorized use on 99 percent of the subunit could result in user conflicts and impacts to naturalness and solitude, but would enhance winter motorized opportunities.	impact motorized assisted activities. Allowance of winter motorized use on 99 percent of the subunit would have similar effects to Alternative B.	of both summer and winter cross-country use on 769,000 acres could result in user conflicts and impacts to naturalness, but would provide opportunities for motorized recreation. Same as Alternatives B and C, winter motorized use could occur on 99 percent of the subunit.	in all zones. The level of effect would depend on vegetation, soil type, and season of travel. Noise at 90–108 dbA from airboats or hovercraft on Birch Creek would negatively impact float boaters.
Management of Big Windy and Mount Prindle RNAs (3,000 acres) would protect recreation resources and experiences of naturalness.					
Prohibiting primitive camping in the RNAs would impact recreation experiences by not allowing users to camp in close proximity to the area of activity, increasing travel time, and possible creation of unsustainable social routes.		Allowing primitive camping in the RNAs would enhance recreation experiences by allowing users to camp in close proximity to the area of activity. Some unsustainable social routes may develop.		Impacts from camping same as Alternatives C and D. Winter motorized use would impact non-motorized experiences while enhancing motorized experiences or those that benefit from motorized use.	
There are no designated ACECs. No rivers are recommended suitable for addition to the Wild and Scenic Rivers System.	Designation of 924,000 acres as the Steese ACEC would protect recreation resources and experiences of naturalness. Impacts may occur if restrictions are placed on facilities development and use to protect habitat. The designation of Big Windy Creek as a “wild” river would ensure the protection and enhancement of the ORVs, providing long-term, benefits to recreation experiences of naturalness and a closeness to the sights	Designation of 457,000 acres as the Steese ACEC would protect recreation resources and experiences of naturalness. Impacts to recreation use may occur if restrictions are placed on facilities development and use.	Designation of 193,000 acres as the Steese ACEC would protect recreation resources and experiences of naturalness. Impacts to recreation use may occur if restrictions are placed on facilities development and use.	Same as Alternative A.	

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
		and sounds of nature on 4,500 acres.			
<b>Travel Management</b>	The construction of winter roads and trails for mineral development would provide a direct benefit to OHV users through the enhancement of public access opportunities. These effects would be the highest under Alternative D, followed by Alternatives C, E, B, and A. Travel management actions would continue to provide for a range of motorized and non-motorized opportunities, while protecting resource values and minimizing user conflicts. Research Natural Areas would be closed to motorized use limiting the areas to non-motorized travel only. Management of Birch Creek WSR, would impact travel in river corridor where the construction of new roads, primitive roads, trails, or other provisions for overland motorized travel would not be permitted (BLM 8351 Manual).				
	Maintaining four transportation corridors would allow for concentrated travel within these corridors and could possibly restrict the development of rights-of-ways (ROW) and other travel routes in other areas. Existing mineral closures would remain in place, limiting the need for new access associated with mining.	Relinquishing two of the transportation corridors could potentially limit access to parts of the Steese National Conservation Area. However, ROW could still be authorized, outside of these corridors and within the two remaining corridors. Designation of ROW avoidance areas could limit future transportation routes. Effects would likely be minimal as few ROW are anticipated.	Effects would be the same as Alternative B except there would be no ROW avoidance areas designated and ROW may be more likely since new areas would be opened to mineral entry. The two corridors retained access areas opened to mineral entry.	No transportation corridors are identified. ROWs would be considered throughout the subunit, potentially resulting in additional access.	
	This alternative would offer the most opportunities for recreational activities that involve the use of motorized travel, including hunting and OHV riding; fewer opportunities would exist for recreational users seeking a primitive, non-motorized type of experience. More than 99 percent of the	The recreation setting character (RSC) would maintain 1 percent of the subunit as available to non-motorized recreation opportunities only. The remaining 99 percent would be closed to summer motorized use, but open to winter use of snowmobiles. Only 1 percent would be available for summer motorized experiences without a permit.	The RSC would maintain 47 percent of the subunit as available for summer-motorized experiences (limited by weight and to existing routes) while 53 percent would remain closed. In contrast, during the winter more than 99 percent of the subunit would be open to winter use of snowmobiles. Compared to Alternative B, much greater opportunity	The RSC setting would maintain 60 percent of the subunit as limited (by weight) to summer-motorized experiences, while 40 percent would remain closed to summer use. Same as Alternatives B and C, more than 99 percent would be available to the winter use of snowmobiles. While this alternative would offer the least opportunity for	While the RSC settings assume maintaining 19 percent of the subunit as limited (by weight) to summer-motorized experiences, and 81 percent closed to summer-motorized use, travel decisions from Alternative A would be implemented until a travel management plan is developed. This would lead to an increase in user-created routes, user

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	subunit is available for winter motorized use and more than 84 percent is available for summer-motorized experiences.		would be available for recreational activities that involve summer motorized travel.	primitive, non-motorized experiences, more opportunities would exist for recreational activities that involve the use of motorized travel compared to Alternatives B and C.	conflict, and an inability to maintain recreation setting prescriptions in some areas. More opportunities would exist for motorized users.
	About 89 percent of the subunit is open to summer-motorized use; 99 percent is open to winter snowmobile use. Limited only by weight (1,000 pounds curb weight and less), except for RNAs, which are closed to OHV use, this alternative provides the greatest opportunity for users seeking cross-country motorized activities.	Less than 1 percent of the subunit would be closed to motorized use yearlong; 99 percent would be open to winter snowmobile use. Summer motorized access could be authorized by permit. This alternative would greatly limit summer motorized use and access compared to the other alternatives.	Less than 1 percent of the subunit would be closed to motorized use; 99 percent would be open to winter snowmobile use. Summer motorized use would be limited to existing trails on 47 percent of the subunit, and not allowed on 53 percent. This alternative would offer more opportunity for motorized use and access than Alternative B, but less than Alternative A.	Less than 1 percent of the subunit would be closed to motorized use; 99 percent would be open to winter snowmobile use. Cross-country summer motorized use (limited by weight) would be allowed on 60 percent of the subunit and not allowed on 40 percent. Summer motorized use would be more limited than Alternative A, but less restricted than in Alternatives B and C.	Impacts would be the same as Alternative A with the following exceptions: No lands would be closed to motorized use. The use of airboats and hovercraft would be allowed and would result in conflicts with float boaters, noise impacts, safety concerns, and increase in user-created OHV routes in Birch Creek WSR corridor. Snowmobile use in RNAs would conflict with the Primitive recreation setting and lead to additional user-created routes.
There are no designated ACECs.	The Steese ACEC (924,000 acres) would be subject to restrictions to winter motorized use if necessary to protect wildlife habitat. Designation of Big Windy Creek as a "wild" river would prohibit new roads and trails.	The Steese ACEC (457,000 acres) would be subject to restrictions to winter motorized use if necessary to protect wildlife habitat. Effects would be less than Alternative B as the ACEC is smaller.	The Steese ACEC (193,000 acres) would be subject to restrictions to winter motorized use if necessary to protect wildlife habitat. Effects would be less than Alternative C as the ACEC is smaller.	The Steese ACEC (193,000 acres) would be subject to restrictions to winter motorized use if necessary to protect wildlife habitat. Effects would be less than Alternative C as the ACEC is smaller.	There are no designated ACECs, however crucial caribou and Dall sheep habitat would be subject to restrictions to winter motorized use if necessary to protect wildlife habitat.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Wild and Scenic Rivers</b>	No rivers are recommended suitable for addition to the Wild and Scenic Rivers System.	Big Windy Creek would be recommended suitable for designation as “wild,” protecting its free-flow and ORVs until Congress made a decision on designation. Surface-disturbing activities may impact water quality and outstandingly remarkable scenic, geologic and wildlife values.	Big Windy Creek would not be recommended suitable for addition to the Wild and Scenic Rivers System. Big Windy Creek is located in the Steese National Conservation Area and is withdrawn from mineral entry. These factors in addition to management of this area for a Semi-Primitive or Backcountry setting would generally protect river values in the absence of designation.		
<b>Subsistence</b>	Alternative A would not significantly restrict subsistence use by communities in and adjacent to the planning area, as impacts to subsistence resources would be minimal. Impacts to subsistence species are expected to be localized and are not expected to impact resources at the population level. No impacts to access by subsistence users are anticipated. Alternative A when combined with the cumulative case would not result in significant restrictions to subsistence use.	Alternative B would not result in significant reductions in subsistence resources or uses by residents in the subunit. Most impacts to subsistence resources would be beneficial, and any impacts by way of the limited amount of development allowed to occur under this alternative would be minimized by Fluid Mineral Leasing Stipulations and SOPs (Appendix A). Alternative B when combined with the cumulative case would not result in significant restrictions to subsistence use.	Alternative C would not significantly restrict subsistence use by communities in the planning area. Most impacts to subsistence resources and uses would be minor, and any impacts from the development allowed to occur would be minimized by the Leasing Stipulations and SOPs. With the exception of locatable minerals, impacts to subsistence resources are expected to be localized and temporary, and are not expected to impact resources at the population level. No impacts to access by subsistence users are expected to occur. No reasonably foreseeable significant restrictions have been identified for Alternative C when	Alternative D in and of itself would not significantly restrict subsistence use by communities in or near the planning area given anticipated levels of development and use of SOPs and Fluid Mineral Leasing Stipulations to reduce impacts. Alternative D when combined with the cumulative case may result in a reasonably foreseeable and significant restriction of subsistence use for rural communities within the planning area, if significant activity occurs within the migration or other crucial habitat of the fish and wildlife. The level of impacts on subsistence use depend on the response to increased opportunity for development of locatable	Alternative E would not significantly restrict subsistence use by communities in the planning area. Most impacts to subsistence resources and uses would be minor, and any impacts from the development allowed to occur would be minimized by the Leasing Stipulations and SOPs. Impacts to subsistence resources are expected to be localized and temporary, and are not expected to impact resources at the population level. No impacts to access by subsistence users are expected to occur. No reasonably foreseeable significant restrictions have been identified for Alternative E when combined with the cumulative case.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
			<p>combined with the cumulative case. Most habitat important to subsistence resources would be within the ACEC or afforded protection by other management prescriptions, including RCAs, riparian buffers and restrictions on off-trail OHV use.</p>	<p>minerals and cross-country use of OHVs. The Fortymile caribou herd could be impacted by activities in the Steese and Fortymile subunits.</p>	

## 2.11.4. Comparison of Impacts Upper Black River Subunit

The following table outlines impacts that would occur in the Upper Black River Subunit. These are in addition to the impacts discussed as common to all subunits under Table 2.26, “Comparison of Impacts; Common to All Subunits”.

**Table 2.29. Upper Black River Subunit: Comparison of Impacts**

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Fish and Aquatic Species</b>	Effects from mining, recreation, travel management and special designations could occur to three species of salmon and several resident species. Effects from recreation would be minimal to minor and easily mitigated under all alternatives.				
	No Riparian Conservation Areas (RCAs) are identified.	28 RCAs would provide additional protection to high priority fish habitat.	13 RCAs would provide additional protection to high priority fish habitat.	Five RCAs would provide additional protection to high priority fish habitat.	Withdrawal of 28 RCAs from mineral entry would provide additional protection to high priority fish habitat.
	No seismic exploration would occur.		Effects to overwintering fish from winter seismic surveys would be localized and would have little effect on fish populations.		
	There would be no effects to fish and aquatic resources from locatable minerals as the entire subunit would be closed to this use.	4,144 miles of stream would be open to mining, with 559 (14 percent) of these miles occurring in RCAs and 1,000 miles in the Salmon Fork ACEC. Mining is not expected to occur due to lack of mineral potential. If development occurred, impacts would be moderate and short-term within the RCAs and ACECs, and moderate and long-term in other areas, resulting in decreased fish populations and habitat loss at the local level.		4,144 miles of stream would be open to mining with 360 (9 percent) of those stream miles occurring in RCAs and 1,000 miles in the Salmon Fork ACEC. Mining is not expected to occur due to lack of mineral potential. Impacts would be similar to Alternative C except 200 fewer miles of stream would be within RCAs.	916 miles of stream would be open to mining with 3 of those stream miles occurring in RCAs. This alternative provides substantially more protection to high value fish and aquatic resources than Alternatives C and D. Mining is not expected to occur on lands opened to mining due to lack of mineral potential. If mining did occur in these areas, impacts would be moderate and long-term.
Impacts from unrestricted use of OHVs would likely be minimal. Most travel is by boat, snowmobile, or aircraft, which has little impact on fish and aquatic habitat.	OHV use would be limited by season and weight. Impacts would likely be minimal. Most travel is by boat, snowmobile, or aircraft which has little impact. This alternative would be slightly more protective than Alternative A.		OHV use would be limited by weight. Impacts would likely be minimal. Most travel is by boat, snowmobile, or aircraft which has little impact. These alternatives would provide more protection to fish and aquatic habitat than Alternative A, but less than Alternative B.		

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	Not addressed.	Fish and aquatic habitats would benefit, from designation of the Salmon Fork ACEC (621,000 acres) because the habitat would generally remain intact. The Salmon Fork would be recommended for designation as a WSR, providing additional protection of high-value fish and aquatic resources.	Travel management and locatable minerals decisions in the Salmon Fork ACEC (621,000 acres) would be less restrictive than in Alternative B providing less protection to fish and aquatic habitat. Fish and aquatic habitat benefit but to a lesser degree than Alternative B.	Management in the Salmon Fork ACEC (621,000 acres) would be less protective to fish and aquatic habitat than Alternative C. high-value habitats within the ACEC would rely on RCA management for protection. Fish and aquatic habitat would benefit less than under Alternatives B and C.	Fish and aquatic habitats would benefit, from designation of the Salmon Fork ACEC (623,000 acres) and withdrawal of the area from mineral entry because the habitat would generally remain intact.
<b>Soil and Water Resources</b>	The subunit is closed to locatable mineral entry and there are no existing mining claims. There would be no effects from locatable minerals.		Alternatives C and D open 1,739,000 and 2,361,000 acres to leasable and locatable minerals, respectively. Placer mining can adversely impact soils and water quality through erosion, unintended discharge of settling ponds, and subsequent increased downstream turbidity. Mining could impact the natural flow characteristics of river segments. However no mining is anticipated due to the low mineral potential.		Alternative E opens 547,000 acres to leasable and locatable minerals. If mining occurred, adverse impacts would be similar to Alternatives C and D except on fewer acres.
	Unrestricted use of OHVs could result in detrimental impacts from proliferation of user-created trails, subsequent soil erosion, and increased siltation in streams. The remote location and lack of access would limit impacts.	Effects would be similar to Alternative A but more protective of resources. Seasonal travel restrictions in the Salmon Fork ACEC and OHV weight restrictions on all lands would reduce the amount of potential surface disturbance to soils and water.	Effects would be similar to Alternative B, except there would not be a seasonal restriction on OHVs in the Salmon Fork ACEC; more area would be available for summer motorized travel. As a result, impacts on soil and water resources would increase slightly relative to Alternative B. These alternatives would be more protective of resources than Alternative A.		

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Wilderness Characteristics</b>	Wilderness characteristics would not be directly protected.	Wilderness characteristics would be protected on more than 99 percent of the subunit; all of the lands with wilderness characteristics.	Wilderness characteristics would be protected on 26 percent of the subunit. Lack of activity and other management actions would indirectly protect wilderness characteristics on the remaining 74 percent of the subunit. Naturalness may be impacted over the short-term in localized areas.	Wilderness characteristics would be not be directly protected. Lack of activity and other management actions would indirectly protect wilderness characteristics on most of the subunit. Naturalness may be impacted over the short-term in localized areas.	Wilderness characteristics would be protected on 47 percent of the subunit through management of Salmon Fork ACEC and RCAs. Lack of activity and other management actions would indirectly protect wilderness characteristics most remaining lands. Naturalness may be impacted over the short-term in localized areas.
<b>Wildlife</b>	The Upper Black River Subunit is very remote and infrequently visited. Due to its low mineral potential and limited access (high transportation costs) little resource development or motorized vehicle use is predicted under any alternative. As a result, few broad scale impacts are anticipated in any alternative.				
	The subunit is closed to locatable minerals. There are no existing mining claims. There would be no impacts to wildlife.		Management of the Salmon Fork ACEC and RCAs would reduce impacts of mining on wildlife habitat. In other areas, exploration or production could potentially create local displacement and some fragmentation of habitat. Given the limited activity expected, impacts would be local in extent.	Impacts will be similar to those in Alternative C, but could potentially higher in the Salmon Fork drainage than in Alternative C. Impacts would depend on levels of exploration, development, and claim staking.	Withdrawal of the Salmon Fork ACEC, Black River watershed, and RCAs from mineral entry would protect wildlife habitat from potential impacts due to mining, including the majority of the known bald eagle nesting habitat. Given the limited activity expected, impacts in other areas would be local in extent.
	The subunit is closed to leasable minerals. There would be no impacts to wildlife.		547,000 to 2,360,000 acres would be open to leasable minerals but no leasing is anticipated. Winter seismic exploration could create local displacement of wildlife and some fragmentation of habitat.		
	The unrestricted use of motorized vehicles could cause localized impacts to habitat. Impacts would be minimal. Most travel is	Effects would be similar to Alternative A but more protective. Seasonal OHV restrictions in the Salmon Fork ACEC and OHV weight limitations on all	Effects would be similar to Alternative B, except there would not be a seasonal restriction in the Salmon Fork ACEC; more area would be available for summer motorized travel. As a result, impacts to habitat may increase slightly relative to Alternative B.		

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	by boat, snowmobile, or aircraft, which has little impact on wildlife habitat.	lands would reduce potential habitat disturbance.			
	There are no designated ACECs.	The Salmon Fork ACEC would maintain habitat for Porcupine caribou, bald eagle, and other wildlife. Management of the Salmon Fork as a “wild” river would benefit wildlife, including a far northern population of nesting bald eagles.	Travel and leasable minerals decisions in the Salmon Fork ACEC would be less restrictive providing less protection to wildlife habitat. Wildlife would benefit but to a lesser degree than Alternative B. Impacts to nesting bald eagles are expected to be low.	Management in the ACEC would be less restrictive than Alternative C, providing less protection to wildlife habitat. There may be potential for impacts to nesting bald eagles and other wildlife, if mining claims were established or mineral leasing occurred.	Management and withdrawal of the Salmon Fork ACEC from mineral entry would maintain habitat for Porcupine caribou, bald eagle, and other wildlife.
<b>Locatable Minerals</b>	The entire subunit would be closed to locatable minerals, precluding any opportunity to explore and develop locatable minerals. Their benefits to society would be unavailable for the foreseeable future. However, mineral potential is very low and mining activity would be unlikely, even if lands were opened to mineral entry.		The entire subunit (2,360,000 acres) would be open to locatable mineral entry allowing an opportunity for mineral exploration. However, mineral potential is very low and mining activity is unlikely.		547,000 acres would be open to locatable mineral entry allowing opportunity for mineral exploration. Activity is unlikely given the low mineral potential.
<b>Recreation</b>	There would be no effects from locatable minerals as the entire subunit is closed and there are no existing mining claims.		The entire subunit would be open to locatable minerals, but mining is unlikely. If mining occurred, it could compromise the experiences of recreation users whose expectations include a high degree of solitude and tranquility, within a naturally-appearing landscape.		Same as Alternatives C and D, except only 547,000 acres would be open to mineral entry.
	Lack of OHV designations could result in emergency closures to protect resources and in long-term, detrimental impacts to scenic view shed that enhance recreational experiences. This alternative offers the	OHV use would be limited by season and weight. These management actions, while promoting the effects of special designations (through limiting summer-access to the Salmon Fork ACEC), would negatively impact those users who utilize OHVs for accessing remote	Effects would be similar to Alternative B, except the Salmon Fork ACEC would be available for recreational activities involving the summer-use of OHVs. This would provide beneficial access and experiences for those individuals seeking motorized hunting opportunities. This effect would likely be minimal, due to the low levels of motorized use likely to occur in the ACEC.		

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>most opportunities for motorized recreational activities; fewer opportunities would exist for users seeking a primitive, non-motorized experience. These effects would be minimal due to lack of access.</p>	<p>areas. These effects would likely be minimal due to the lack of access and low levels of motorized use likely to occur.</p>			
	<p>No ACECs are designated. No rivers are recommended suitable for addition to the Wild and Scenic Rivers System.</p>	<p>Designation of the Salmon Fork ACEC would help maintain fish and wildlife habitat, potentially with beneficial impacts on fishing, wildlife viewing and hunting. Negative effects could also result, if additional restrictions are placed on recreational activities to protect the values of the ACEC.</p>			
<b>Travel Management</b>	<p>There would be no effect from leasable minerals because the entire subunit is closed to mineral leasing.</p>	<p>Designation of the Salmon Fork as a "wild" river, would provide beneficial experiences for those individuals seeking wild river related recreational opportunities.</p>	<p>The Salmon Fork would not be recommended suitable for designation as a WSR and there would be no effect on recreation.</p>		
	<p>There are no OHV designations and motorized use is unrestricted.</p>	<p>OHV use would be limited by weight and season of use. Effects would be minimal as the subunit is inaccessible except by boat, aircraft, or snowmobile. If resource damage occurs, sustainable trail construction or area closures could occur.</p>	<p>547,000 to 2,360,000 acres would open to mineral leasing. Cleared seismic trails could be used as the beginning of a network of winter trails, potentially increasing access into the southern part of the subunit. Effects would be minimal due to the limited amount of exploration.</p>		
	<p>No ACECs are designated. No rivers are recommended suitable for addition to the Wild and Scenic Rivers System.</p>	<p>OHV use would be limited by weight and season of use. Effects would be minimal as the subunit is inaccessible except by boat, aircraft, or snowmobile. If resource damage occurs, sustainable trail construction or area closures could occur.</p>	<p>OHV use would be limited by weight. Effects would essentially be the same as Alternative B.</p>		
	<p>No ACECs are designated. No rivers are recommended suitable for addition to the Wild and Scenic Rivers System.</p>	<p>The Salmon Fork ACEC would result in restrictions on summer use of OHVs. Impacts would be negligible, as the ACEC is remote and difficult to access.</p>	<p>The Salmon Fork ACEC could effect travel management if additional restrictions were placed on OHV use. However, this would be unlikely as the ACEC is remote and difficult to access.</p>		

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
		If the Salmon Fork were designated as a “wild” river, there could be limitations on motorized travel in the river corridor.			
<b>Wild and Scenic Rivers</b>	No rivers are recommended suitable for designation under the WSR Act. Existing withdrawals from mineral entry would protect wildlife values of the river.	The Salmon Fork would be recommended suitable for designation as “wild,” protecting its free-flow and ORVs until Congress made a decision on designation. Surface-disturbing activities may impact water quality and outstandingly remarkable wildlife values.	The Salmon Fork would not be recommended as suitable for designation as a “wild” river.		The Salmon Fork would not be recommended as suitable for designation as a “wild” river. Withdrawal of the Salmon Fork watershed from mineral entry would protect the outstanding wildlife values without designation.
<b>Subsistence</b>	Alternative A would not significantly restrict subsistence use by communities in and adjacent to the planning area, as impacts to subsistence resources would be negligible. Impacts to subsistence species are expected to be localized and temporary and are not expected to impact resources at the population level. No impacts to access by subsistence users are anticipated.	Alternative B would not significantly restrict subsistence use of or access to fish, wildlife and vegetative resources by residents in the subunit. Most impacts to subsistence resources would be beneficial, and any impacts by way of the limited amount of development allowed and expected to occur under this alternative would be minimized by Fluid Mineral Leasing Stipulations and SOPs (Appendix A).	Alternative C would not significantly restrict subsistence use by communities in the planning area. Most impacts to subsistence resources and uses would be negligible, and any impacts from the limited amount of development allowed to occur would be minimized by the Fluid Mineral Leasing stipulations and SOPs. Impacts to subsistence species would be localized and temporary, and are not expected to impact resources at the population level. No impacts to access by subsistence users are expected.	Alternative D would not significantly restrict subsistence use by communities in or near the planning area given anticipated level of development and the implementation of the Fluid Mineral Leasing stipulations and SOPs.	Alternative E would not significantly restrict subsistence use by communities in or near the planning area. Most impacts to subsistence resources and uses would be negligible, and any impacts from the limited amount of development allowed to occur would be minimized by the Fluid Mineral Leasing stipulations and SOPs. Impacts to subsistence species are expected to be localized and temporary and would not impact resources at the population level. No impacts to access by subsistence users are expected.
The cumulative case, as presented in this analysis, is not expected to result in a reasonably foreseeable or significant restriction of subsistence resources or uses for rural communities within the planning area under any alternative.					

## **2.11.5. Comparison of Impacts White Mountains Subunit**

The following table outlines impacts that would occur in the White Mountains Subunit. These are in addition to the impacts discussed as common to all subunits under Table 2.26, “Comparison of Impacts: Common to All Subunits”.

**Table 2.30. White Mountains Subunit: Comparison of Impacts**

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Fish and Aquatic Species</b>	Effects from recreation would be minor and easily mitigated. The White Mountains NRA and the Beaver Creek WSR are closed to locatable minerals, benefitting high-value fish resources. Although fish and aquatic habitat resources are relatively low within RNAs, the protections provided in these areas would ensure these headwater areas remain intact, reducing potential impacts to fish and aquatic habitat lower in the drainage.				
	No Riparian Conservation Areas (RCAs) are identified.	14 RCAs would provide additional protection to high priority fish habitat.	13 RCAs would provide additional protection to high priority fish habitat.	8 RCAs would provide additional protection to high priority fish habitats.	Same as Alternative B
	There would be no effects to fish and aquatic resources from leasable minerals as the entire subunit would be closed to these uses.			451,000 acres would be open. No exploration or development is anticipated. Impacts would not occur.	4,000 acres would be open, but exploration or development is not anticipated. Impacts would not occur.
	There would be no impacts from leasing of hardrock minerals as it would not be authorized.			Leasing of hardrock minerals could occur on 250 stream miles (160,000 acres). Aquatic habitats may be degraded by suction dredging on 84 acres or 14 stream miles and by placer mining on 507 acres or eight stream miles. Direct impacts from lode exploration are not anticipated.	Same as Alternatives A, B, and C.
	Allowing summer cross-country travel by OHVs weighing 1,000 pounds and less on 43 percent of the subunit may result in increased proliferation of user made trails, with the potential of increased erosion and sediment impacts. Closure of 55 percent of the subunit to summer OHV use would	Limiting summer use of OHVs to designated trails on 36 percent of the subunit would significantly reduce proliferation of user made trails and associated impacts would be reduced. Closure of 62 percent of the subunit to summer OHV use, would protect high-value fish resources in Beaver Creek watershed.	Limiting summer use of OHVs to designated trails on 43 percent of the subunit, with an allowance for off-trail travel to retrieve legally harvested game, would reduce proliferation of user made trails and associated impacts compared to Alternatives A and D. Closure of 55 percent of the subunit to summer OHV use, would	Effects would be similar to Alternative A, except cross-country use of OHVs would be allowed on 45 percent of the subunit, the use of UTVs would be allowed on 112 miles of trail, and OHVs would be restricted to designated trails in the Nome Creek Valley. Proliferation of user made trails would continue resulting in increased erosion and sediment	Effects would be similar to Alternative A, except airboats and hovercraft would be allowed in the White Mountains and snowmobile use may occur in research natural areas. These types of uses are not likely to adversely impact fish and aquatic resources.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	provide protection to high-value fish resources in Beaver Creek watershed. Currently, there are no known impacts to fish and aquatic habitat from OHV, but this could change with the trend of increasing use.	Alternative B would provide the greatest protection. Impacts are expected to be minimal. Fossil Creek would be recommended suitable for designation as a WSR, generally providing additional protection to fish habitat.	protect high-value fish resources in Beaver Creek watershed. Alternative C provides slightly less protection than Alternative B, but more than Alternatives A and D. Impacts to fish and aquatic habitat are expected to be minimal.	impacts. This alternative has more potential to effect fish and aquatic habitat than Alternatives B and C. Fifty percent of the subunit would be closed to summer OHV use, providing protection to high-value fish resources in Beaver Creek watershed.	
<b>Soil and Water Resources</b>	Mine operations on 4,000 acres of existing claims have the potential to adversely impact soil resources and water quality through erosion, unintended discharge of sediment laden water, and subsequent increased downstream turbidity. Mining could impact the natural flow characteristics of river segments.				
	Two transportation corridors would concentrate the building of access roads and other rights-of-way (ROW). Construction of or continued use of existing trails and roads have the potential to adversely impact soil and water resources through surface disturbance.	One transportation corridor would concentrate the building of access roads and other ROW. Designation of the RNAs, White Mountain ACEC, and Beaver Creek WSR Corridor as ROW avoidance areas would protect soil and water resources by not allowing clearance of vegetation and construction of structures associated with ROW.	No transportation corridors would be identified and no ROW avoidance areas would be designated. This would allow for the construction of ROW throughout the subunit, and could result in disturbance to soil and water resources. However, few ROW are anticipated in the White Mountains NRA during the life of the plan.	Same as Alternative C, no transportation corridors or ROW avoidance areas would be identified. The Perhaps Creek portion of PLO 4167 would be revoked, allowing 200 acres to be transferred out of BLM management and open for development and associated surface-disturbing activities.	Same as Alternative C.
	The construction of facilities to support recreation activities would be ground disturbing, and thus could potentially affect soil and water resources. Past impacts have been low and future impacts	Potential disturbance from facility construction would be lower because most of the subunit would be managed for a Primitive or Semi-Primitive recreation setting. Impacts to soil and water resources from recreation	Potential disturbance would be higher because more acres are allocated to Backcountry and Middlecountry settings, and less to Primitive and Semi-Primitive settings. Alternative C allows for increased development of visitor facilities, landscape	Alternative D has the greatest number of acres allocated to Backcountry and Middlecountry settings and allows for the greatest increase in development of visitor facilities, landscape modifications, and group size. Thus, has greater potential to impact soil	Same as Alternative C.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	are expected to be minimal.	management are expected to be minimal.	modifications, and group size. It provides less protection of soil and water resources than Alternatives A and B, but more than Alternative D.	and water resources than Alternatives B and C and would have similar effects to Alternative A.	
	Disturbance of soil and water resources from OHV use is expected to increase because visitation is expected to double within the next 15 years. Construction of new trails and increased user visitation have the potential to adversely impact resources. OHV weight and seasonal restrictions would limit surface disturbance. However, cross-country summer use of OHVs could occur on 61 percent of the subunit.	Construction of new trails and increased visitation have the potential to adversely impact resources. Trail maintenance, seasonal travel restrictions and OHV weight restrictions would reduce the amount of surface disturbance potentially affecting soils and water. Restriction of OHVs to designated trails on 27 percent of the subunit should significantly reduce proliferation of user made trails. This alternative would be the most protective.	Trail maintenance, seasonal travel restrictions and OHV weight and width restrictions would reduce the amount of surface disturbance potentially affecting soils and water. Proliferation of user made trails should be significantly reduced. Off trail use for game retrieval would be minimal and dispersed resulting in few effects. Alternative C provides somewhat less protection than Alternative B but more than Alternatives A and D.	Alternative D greatly increases the amount of area where cross-country summer OHV use is allowed (83 percent of the subunit) and expands the type of vehicles allowed compared to Alternatives B and C. Hence, Alternative D has more potential to adversely impact soil and water resources through soil erosion and stream siltation than Alternatives B and C and would have effects similar to Alternative A.	A travel management plan would be developed for the subunit. During the interim, impacts would be largely the same as Alternative A with a few exceptions. Research natural areas would be open to winter snowmobile use, some trails would be designated for UTV use, and use of airboats and hovercraft would be allowed.
<b>Wilderness Characteristics</b>	Not Addressed	Wilderness characteristics would be protected on 50 percent of the subunit. Low levels of activity and recreation settings would indirectly protect wilderness characteristics on most of the remainder. Recreation facility development may impact naturalness in localized areas.	Wilderness characteristics would be protected on 31 percent of the subunit. Low levels of activity and recreation settings would indirectly protect wilderness characteristics on most of the remainder. Recreation facility development may impact naturalness in localized areas.	Wilderness characteristics would be protected on 20 percent of the subunit. Low levels of activity and recreation settings would indirectly protect wilderness characteristics on most of the remainder. Recreation facility development may impact naturalness in localized areas.	Wilderness characteristics would be protected on 77 percent of the subunit through management of ACECs, RCAs, and recreation settings. Recreation facility development may impact naturalness in localized areas.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Wildlife</b>	Use of motorized boats can result in disturbance of wildlife along Beaver Creek. Limitations on horsepower for boats launching at Nome Creek limits the distance and speed that many boats will travel, reducing potential impacts. Greater impacts could occur if use from private inholdings increased greatly, road access to lower Beaver Creek was developed, or technology advances allow easier travel with small motors. Management of Beaver Creek as a WSR, even though it attracts recreational use, limits impacts to wildlife overall.				
	Not addressed	A provision to monitor snowmobile use of non-forested caribou habitat and adjust management if necessary will minimize potential future impacts should use of these habitats increase.		Not addressed	Same as Alternatives B and C.
	There would be no effects to wildlife from leasable minerals as the entire subunit is closed to leasing.			451,000 acres would be open to leasing. If exploration or leasing occurred, which is unlikely, wildlife and habitat could be impacted. The greatest potential conflicts would be in lower Victoria Creek sheep habitat, and the area north of Nome Creek and upper Beaver Creek. Sheep movement between Victoria Mountain and Mount Schwatka and use of a mineral liek along Victoria Creek could be disrupted.	4,000 acres would be open to mineral leasing in the Livengood area, but no leasing is anticipated.
	The Primitive Management Unit (575,000 acres) is managed to protect remote, Primitive values. Impacts from recreation in this unit are minor. The Beaver Creek WSR is used mostly by summer float boaters, although motorized use is allowed and occurs mostly during hunting season in	Effects of recreation to wildlife would be reduced as the recreation settings manage for smaller changes to the landscape than in other alternatives. Primitive and Semi-Primitive settings would protect Dall sheep habitat in the White Mountains Spine area, and caribou and moose habitat in the upper Victoria Creek drainage.	Effects to wildlife will increase relative to Alternative B, with the increased area of Middlecountry and reduced area of Semi-Primitive settings. If the Baekeountry zone is managed to allow more human use than the Alternative A Primitive Management Unit, there may be minor additional impacts in those areas compared to	This alternative has fewer acres of Primitive and Semi-Primitive settings. Relative to other alternatives, it will allow motorized use in a large portion of Victoria Creek. Effects of recreation on wildlife will be higher than all other alternatives. The area of Middlecountry is increased greatly (to 451,000 acres) over other action Alternatives, and over the Semi-Primitive	This alternative designates the same recreation settings as Alternative C and results in a small increase (relative to Alternative A) in areas where widespread summer OHV use would be allowed. This would result in slightly higher negative effects than in Alternative C. Potential effects of summer OHV use include disturbance of Dall sheep and nesting raptors, vegetation and soil disturbance, and

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>the upper portion. The Semi-Primitive Motorized Unit (428,000 acres) is subject to the most recreational use (and variety of types of use).</p>		<p>Alternative A. Potential impacts to wildlife from Middlecountry management will be greatly reduced by limiting OHV use to designated trails.</p>	<p>Motorized Unit of Alternative A. Impacts would potentially occur to Dall sheep, caribou, moose and other wildlife, primarily in the northern portion of the White Mountains NRA.</p>	<p>introduction of invasive plants.</p>
	<p>Cross-country OHV use will continue to increase, resulting in direct loss of habitat. Sheep use in the area surrounding a mineral lick in upper Little Champion Creek may be hampered by increasing levels of motorized and non-motorized recreation. Due to the very scattered nature of small tors for escape terrain in the area between Champion Creek and Quartz Creek, sheep could possibly abandon use of that area under foreseeable levels of OHV activity. Caribou winter habitats in upper Victoria Creek could be affected by snowmobile use facilitated by trails created in summer by OHV users.</p>	<p>Restricting summer OHV use to 139 miles of designated trails on 491,000 acres will greatly reduce the potential impacts of summer OHVs on wildlife. Over time, managed/constructed trails will replace designated trails that are not sustainable. These trails can be routed to minimize impacts to sensitive wildlife and habitats. Pioneering of new routes will be greatly reduced and current non-designated routes will begin to recover. The area of wildlife habitat influenced by OHVs will decrease dramatically. Managed/constructed trails and OHV use will impact wildlife, but this impact will be much smaller and can be better managed.</p>	<p>The area open to summer OHV use on designated trails is somewhat larger than in Alternative B and off-trail use will be allowed for game retrieval. This provision may create some of the impacts associated with allowance of cross-country travel, but those impacts are expected to be relatively minor. Off-trail use for game retrieval will be very limited. relative to Alternatives A or D. Compared to Alternatives A or D, impacts of summer OHV use would be very small. UTVs (larger OHVs) will be allowed on 27 miles of trail. This allowance will have little impact. However, trails constructed to support use by large OHVs begin to approach roads in size and design, with relatively larger potential impacts.</p>	<p>Cross-country summer OHV use is allowed on a somewhat larger area than Alternative A. Effects from summer OHV use would be greatest in this alternative. In addition to effects described for Alternative A, opening of Victoria Creek drainage to OHVs could eventually result in a trail to or near lower Beaver Creek, potentially affecting Dall sheep in the area. Similar to Alternative C, UTVs would be allowed on designated trails but, the miles of designated UTV trail will approximately triple (112 miles). This allowance on select existing trails will have little impact. However, trails constructed to support use by large OHVs begin to approach roads in size and design, with relatively larger potential impacts.</p>	<p>Unlike Alternative C, summer OHVs would not be limited to designated trails, so the overall effects on wildlife and habitats would be considerably increased. Impacts from UTVs would be similar to Alternative C. This is the only alternative that allows use of hovercraft, airboats, and personal watercraft. Use of these types of watercraft could reduce use of the riparian area by moose and other wildlife, reduce use of riverside mineral licks by Dall sheep, and potentially disturb nesting birds. These impacts could be substantial. The ability of airboats to travel outside the channel would also result in impacts to wetlands, including nesting birds. Winter snowmobile use in research natural areas would result in a variety of impacts described in sections 4.3.1.12 and 4.3.3.3.</p>

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	No camping is allowed in three designated RNAs, limiting human activity and disturbance of Dall sheep, raptors, and other species.	Effects from the RNAs would be the same as Alternative A. The White Mountains ACEC would be managed to maintain caribou and sheep habitat quality. Designation of Fossil Creek as a “scenic” river would have little effect on wildlife due to other management constraints in the area.	Allowing primitive camping in the RNAs may result in slightly greater disturbance of Dall sheep, raptors, and other species. No ACEC would be designated. A smaller area of Dall sheep and caribou calving/postcalving habitat would be managed as a Wildlife Conservation Area, maintaining these habitats. Some degradation of habitat from motorized use is possible.	Effects from RNAs would be the same as Alternative C. A smaller area would be managed as a Wildlife Conservation Area, protecting most Dall Sheep habitats and the most highly used caribou calving/postcalving habitat. Portions of caribou the habitats could be impacted by motorized vehicle use, including cross-country summer OHV use.	Primitive trail development and camping may result in slightly greater human activity and disturbance of Dall sheep, raptors, and other species. Crucial caribou and Dall sheep habitats would be managed to maintain caribou and sheep habitat quality. Some degradation of wildlife habitat from motorized use is possible, especially in Bear, Quartz, Champion, and Little Champion creek areas.
<b>Locatable Minerals</b>	Impacts from mining would be localized on 4,000 acres of existing mining claims in the Livengood area, where a large lode mine is being developed. Impacts include direct loss of habitat, wildlife disturbance resulting in some level of avoidance, and changes in human use of the area. The White Mountains NRA would remain Congressionally withdrawn from locatable mineral entry, including known high mineral potential areas. Opening the NRA is outside the scope of the RMP.				
<b>Leasing for gold and rare earth metals</b>	Leasing of hardrock minerals would not be authorized. These minerals would be unavailable. There would be no related beneficial economic effects.			160,000 acres would be available for hardrock mineral leasing. This is predicted to result in suction dredging and placer mining leading to some economic benefits.	Same as Alternatives A, B, and C.
<b>Recreation</b>	Restrictions to address wildlife concerns could make recreation projects more costly, more difficult to accomplish, or unable to meet recreation management objectives. Healthy wildlife populations would benefit hunting, wildlife viewing, and trapping which are generally secondary activities in most RMZs. Access restrictions could offset that benefit by limiting participation in those activities. The biggest potential impact would be in limiting potential motorized and non-motorized recreational opportunities and possibly limiting further development of the winter cabin/trails program. The White Mountains NRA and adjacent facilities would be managed to enhance and promote recreational opportunities, ensuring that recreation opportunities continue to exist.				
There would be no effects to recreation from leasable minerals as the entire subunit is closed to leasing.				The Middlecountry RMZ, 451,000 acres, would be open. If leasing occurred, which is unlikely, desired recreation outcomes could be diminished.	4,000 acres would be open to leasable minerals. Mining is currently occurring on valid existing claims, thus there would be no added effect.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	Leasing of hardrock minerals would not be authorized. There would be no effects on recreation.			Direct impacts include visual, short-term user conflicts, and noise. Recreation users may be displaced. Increased turbidity may negatively affect quality of river floating experiences. Maintained trails may be damaged by heavy mining equipment.	Same as Alternatives A, B, and C.
	Summer cross-country travel by OHVs 1,500 pounds and less is allowed on 43 percent of the subunit. Resource and user conflict issues would not be addressed, potentially resulting in emergency closures. There could be long-term detrimental impacts to scenic view sheds that enhance the quality of recreational experiences. This alternative would offer greater allowances for recreational activities that involve the use of motorized travel; fewer opportunities would exist for recreational users seeking a primitive, non-motorized type of experience.	Summer use of OHVs would be limited to designated trails in the Middlecountry and Frontcountry RMZs (367,000 acres). Opportunities for cross-country summer OHV use, including exploring and hunting, would not be available. These restrictions would enhance scenic view shed and non-motorized recreational opportunities.	Effects from travel management would be similar to Alternative B. Additionally, allowances for off-trail travel by vehicles 1,000 pounds curb weight or less in the Middlecountry and Frontcountry RMZs, to retrieve legally harvested game would increase recreational opportunities for hunters. The ability to use the larger UTV type vehicles on 27 miles of trails would increasing the range of motorized opportunities.	Effects from travel management would be similar to Alternative A. The size of the area where summer cross-country OHV use is allowed would increase by 5 percent. Portions of the northern and northwestern White Mountains would be opened to limited cross-country travel. 112 miles of trail would be open to UTVs. Opportunities for motorized activities would be greatly enhanced. Alternatively, the recreational experience of users seeking a primitive, non-motorized type of outing could be diminished. Depending on use levels and resource damage, additional closures for summer OHV use could be put in place for specific areas.	Effects from travel management would be similar to Alternative A with the following differences. Use of airboats and hovercraft would result in conflicts with float boaters, noise impacts, and possible safety concerns. The ability for these types of watercraft to travel outside the river channel would result in disturbance to marsh and swamp vegetation and to moose during hunting season. The ability to use the larger UTV type vehicles on 27 miles of trails would increasing the range of motorized opportunities.
The White Mountains NRA and Beaver		A greater portion of the SRMA would be reserved	Management would shift away from a	The Primitive and Semi-Primitive settings	Same as Alternative C.

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>Creek WSR Corridor are managed as a Special Recreation Management Area (SRMA). Facilities (e.g., cabins, trails) may be added or enhanced to accommodate increasing recreational demand.</p>	<p>for Semi-Primitive experiences. Facility development could be limited to maintain Semi-Primitive settings. These decisions would provide high-quality recreation opportunities for users who desire an experience characterized by solitude, tranquility, and self-reliance. Mechanized users could experience some displacement due to motorized closures or increased restrictions.</p>	<p>Semi-Primitive setting towards Backcountry and Middlecountry settings, allowing for a slightly higher level of site and facility development. Some displacement of non-motorized users could be expected. Both motorized and non-motorized recreational use would benefit from improvements. Use would increase with a more moderate level of attainment anticipated for experiencing solitude, tranquility, and personal challenge and risk-taking.</p>	<p>would be greatly reduced compared to Alternative C. Allowing more recreational development in the northern part of the SRMA. The cabin and trail system could be expanded. The reduction in Semi-Primitive RMZ and Primitive settings would not greatly impact non-motorized recreational opportunities.</p>	
	<p>No designated ACECs. Habitat protections afforded by the White Mountain NRA designation protects wildlife resources, benefitting wildlife related recreation.</p>	<p>Designation of the White Mountains ACEC would benefit wildlife related recreation. Negative effects may result, if additional restrictions are placed on recreation.</p>	<p>Although no ACEC would be designated, decisions for management of wildlife and habitat protections afforded by the designation of the White Mountains NRA, would protect wildlife resources, benefitting wildlife related recreation.</p>		
	<p>No rivers are recommended suitable for addition to the Wild and Scenic Rivers System. Management of the White Mountains NRA would protect recreational values.</p>	<p>Designation of Fossil Creek as a “scenic” river would provide long-term beneficial experiences for those seeking scenic and natural landscapes and wanting to experience adventure.</p>	<p>Fossil Creek would not be recommended for designation as a “scenic” river. Management of this area for Backcountry recreational opportunities would provide long-term recreational experiences for those seeking scenic and natural landscapes and wanting to experience adventure.</p>		

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
<b>Travel Management</b>	Measures that are implemented to protect natural resources, such as wildlife, water, and soil could result in seasonal or permanent route restrictions or closures. BLM-authorized activities, such as rights-of-way, could slightly expand the route network. The Recreation Opportunity Spectrum (RSC) provides a framework for identifying the types of recreation activities that the public might desire, and is directly related to transportation and travel management opportunities in those areas. Since travel management decisions are applied to the same management units as the RSC, impacts from recreation are expected to be minimal. Management of Beaver Creek WSR, would impact travel in river corridor where the construction of new roads, primitive roads, trails, or other provisions for overland motorized travel would be limited.				
	Areas open to OHV use generally avoid crucial wildlife habitats. There is a seasonal closure to motorized use in peregrine falcon nesting areas.	Since OHV use is more restricted under Alternatives B and C, closures to protect wildlife could have a greater effect on travel opportunities than under Alternative A. Winter use of snowmobiles could be impacted by seasonal closures within winter caribou range. Snowmobile use in the winter habitat is generally very low, so impacts are expected to be low.		Effects would be similar to Alternative A.	Effects would be similar to Alternatives B and C. Winter use of snowmobiles could be impacted by seasonal closures for caribou. Decisions in travel management plans would be somewhat constrained by wildlife management decisions.
	The OHV designation is Limited except for RNAs, (13,000 acres) which are Closed. Some trails are managed as non-motorized recreation trails, benefitting non-motorized trail users by providing a place where only non-motorized use is allowed, but also limiting motorized users opportunities to travel in the same areas. Summer cross-country use of OHVs 1,500 pounds GVWR and less is allowed on 440,000 acres, providing	The OHV designation would be Limited, except for RNAs, (13,000 acres) which are Closed. Same as Alternative A, some trails would be managed as non-motorized. Travel would be restricted to 139 miles of designated trails on 367,000 acres. The amount of area where operating an ATV is allowable would be reduced. The designated trails are generally the same trails that have existed in the White Mountains for the past 15 years. The main difference from Alternative A is that OHVs would be required	The OHV designation would be Limited, except for RNAs, (13,000 acres) which are Closed. Same as Alternative A, some trails would be managed as non-motorized. Travel would be restricted to 139 miles of designated trails on 437,000 acres. Alternative C allows greater use of OHVs compared to Alternative B and allows the use of UTVs on 27 miles of trails. Proliferation of user made trails should be significantly reduced compared to Alternative A, because OHVs are restricted to designated trails except for game	The OHV designation is Limited, except for RNAs, (13,000 acres) which are closed. Same as Alternative A, some trails would be managed as non-motorized. Summer cross-country use of OHVs 1,000 pounds curb weight and less would be allowed on 464,000 acres and 112 miles of trail would be accessible for UTVs. Somewhat fewer acres (514,000 acres) would be closed to summer OHV use, providing some additional opportunity for summer motorized use in the northern and northwestern White Mountains. Travel	Impacts would be the same as Alternative A with the following exceptions. RNAs would be open to winter snowmobile use and 27 miles of trail would be open to UTVs, increasing opportunity for motorized recreation. Alternatively, by allowing snowmobile use in RNAs, the primitive recreation prescription for these areas would not be maintained. Conflicts between motorized and non-motorized users would increase. Allowance for UTVs may also increase user conflict as the trails were not designed for UTVs and it may be

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
	<p>many opportunities for motorized use. 563,000 acres are closed to summer OHV use, somewhat limiting opportunities in these areas.</p>	<p>to stay on the trail. Proliferation of user made trails should be significantly reduced. 636,000 acres would be closed to summer OHV use, making this alternative slightly more restrictive than Alternative A.</p>	<p>retrieval; trail proliferation could be higher than under Alternative B because of the allowance for game retrieval. Off trail use would be minimal and dispersed resulting in few effects. Similar to Alternative A, 566,000 acres would be closed to summer OHV use.</p>	<p>Management decisions would greatly increase the area where OHVs can travel and expand the type of vehicles allowed compared to Alternatives B and C. This would create a greater impact on non-motorized travelers.</p>	<p>difficult to pass. These impacts will decrease over time with trail widening, increased signing, and public education. Use of airboats and hovercraft would result in conflicts with float boaters, noise impacts, and possible safety concerns. Impacts from the use of these types of watercraft could lead to additional restrictions on motorboat use in the future.</p>
	<p>The three RNAs are closed to motorized OHV use. Impacts to motorized travel would be minimal since the RNAs are relatively inaccessible to this use.</p>	<p>Effects from RNAs would be the same as Alternative A. Designation of the White Mountains ACEC could result in limits on seasonal use of trails and construction of new trails. Designation of Fossil Creek as a “scenic” river, would not affect modification of existing trails or development of new trails.</p>	<p>Allowing primitive camping and development of primitive hiking trails in the RNAs would benefit travel management as trails could be established to provide for easier travel through the RNAs and users would not have to travel greater distances outside the RNA to camp.</p>		<p>The RNAs, closed in all other alternatives, would be opened to the use of snowmachines in winter (October 15 to May 1) with adequate snow cover. Trails could be constructed outside of the RNA boundary to improve access. Hiking and hunting would be allowed. Impacts to motorized travel would be minimal since most of the RNAs are relatively inaccessible to this use, except in the winter. Minimal positive effects to motorized recreationists as there would be some additional acreage open to winter use of snowmobile use. Scenic values could be impacted by allowing camping and with the development of hiking</p>

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
					trails, user-created travel routes from camping locations within the RNAs and by allowing cross-country winter OHV use.
<b>Wild and Scenic Rivers</b>	No rivers are recommended suitable for addition to the Wild and Scenic Rivers System. Management of the White Mountains NRA would generally protect river values.	Fossil Creek would be recommended suitable for designation as “scenic,” protecting its free-flow and ORVs until Congress made a decision on designation. River values would be protected by management of this area for a Backcountry setting.	Fossil Creek would not be recommended as suitable for addition to the Wild and Scenic Rivers System. Fossil Creek is within the White Mountains NRA and is withdrawn from mineral entry. These factors in addition to the management of this area for a Backcountry recreation setting would generally protect river values in the absence of designation.		
<b>Subsistence</b>	Alternative A would not significantly restrict subsistence use by communities in and adjacent to the planning area, as impacts to subsistence resources would be minimal. Impacts to subsistence species would be localized and are not expected to impact resources at the population level. No impacts to access by subsistence users are anticipated.	Alternative B would not result in significant reductions in subsistence resources or uses by residents in or adjacent to the subunit. Most impacts to subsistence resources would be beneficial, and any impacts by way of the limited amount of development allowed to occur would be minimized by the Fluid Mineral Leasing Stipulations and SOPs (Appendix A).	Alternative C would not significantly restrict subsistence use by communities in or near the planning area. Most impacts to subsistence resources and uses would be minor; any impacts from development would be minimized by the Leasing Stipulations and SOPs. Impacts to subsistence resources would be localized and temporary, and are not expected to impact resources at the population level. No impacts to access by subsistence users are expected to occur. Minimal competition for subsistence resources may	Alternative D would not restrict subsistence use by communities in or near the planning area. Any impact from responses to potential locatable mineral development and cross-county summer use of OHV would not be significant. Management decisions in Chapter 2 of this RMP and the Fluid Mineral Leasing Stipulations and SOPs would mitigate impacts.	Alternative E would not restrict subsistence use by communities in or near the planning area. Most impacts to subsistence resources and uses would be minor; any impacts from development would be minimized by the Leasing Stipulations and SOPs. Impacts to subsistence resources would be localized and temporary, and are not expected to impact resources at the population level. No impacts to access by subsistence users are expected to occur. As the Fortymile caribou herd expands its range into the White Mountains, participation by rural

Program or Resource	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E (Proposed RMP)
			occur if large numbers of non-local hunters are attracted to areas where off-trail game retrieval is allowed.		residents from across the state would increase. Participation by federally qualified subsistence users and non-rural residents could also increase.
The cumulative case, as presented in this analysis, is not expected to result in a reasonably foreseeable or significant restriction of subsistence resources or uses for rural communities within the planning area under any alternative.					

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**Chapter 3**

**Affected**

**Environment**



## 3.1. How to Read This Chapter

This chapter provides background information on the various resources and resource uses within the planning area, and describes their condition and trend. The chapter is organized into four sections: Resources, Resource Uses, Special Designations, and Social and Economic Conditions. Each of these four sections is split further into resources or program areas. Each section includes a discussion of the presence, condition, and trend of the topic area. For some resources, additional information in the affected environment can be found in Appendix M.3.

## 3.2. Resources

### 3.2.1. Air and Atmospheric Values

#### 3.2.1.1. Air Quality and Greenhouse Gas Emissions

This section provides an overview of the existing air quality conditions in the planning area and surrounding region, the regulatory framework, and reported greenhouse gas (GHG) emissions. The air quality section includes an overview of six “criteria” pollutant emissions including carbon monoxide (CO), lead (Pb), nitrogen oxides (NO<sub>x</sub>), ozone (O<sub>3</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter less than 10 micrometers (PM<sub>10</sub>) and less than 2.5 micrometers (PM<sub>2.5</sub>), and sulfur dioxide (SO<sub>2</sub>). The GHG emission section includes an overview of the three most important greenhouse gases, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). Throughout this report greenhouse gas emissions are presented using a common metric, carbon dioxide equivalents (CO<sub>2</sub>Eq.), which incorporates the relative contribution of each gas to the global average radiative forcing on a global warming potential (GWP) weighted basis.

##### 3.2.1.1.1. Air Quality

###### 3.2.1.1.1.1. Regulations, Guidance, and Policy

The U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for outdoor concentrations of the following “criteria”<sup>1</sup> pollutants: CO, Lead, NO<sub>x</sub>, O<sub>3</sub>, PM<sub>10</sub> – PM<sub>2.5</sub>, and SO<sub>2</sub> (Table 3.1). An ambient air quality standard establishes the concentration above which the pollutant is known to cause adverse health effects to sensitive groups within the population such as children and the elderly. Ambient air quality standards are classified as either “primary” or “secondary” standards. Primary standards define levels of air quality, including an adequate margin of safety, necessary to protect the public health. Secondary ambient air quality standards define levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

###### 3.2.1.1.1.2. Existing Environment: Air Quality

Much of the planning area is remote, largely undeveloped, and air quality is generally pristine. Regional and local air quality however, is periodically affected by local, regional, and global natural events and anthropogenic activities (ADEC, 2011a). Interior Alaska has various sources

<sup>1</sup>“Criteria” air pollutants refer to those air pollutants for which the United States Environmental Protection Agency has developed criteria on which to base National Ambient Air Quality Standards (NAAQS) under the Federal Clean Air Act.

of natural pollution including wind-blown dust from open riverbeds, smoke from wildland fires, and rarely ash emissions from remote volcanic eruptions. Although natural in source, these forms of pollution may impair visibility and adversely affect public health. The main contributors to anthropogenic air pollution in Interior Alaska are incomplete burning of fossil fuels from motor vehicles and heating, as well as smoke from wood stoves (ADEC, 2011b). In rural communities, such as Fort Yukon and Chalkyitsik, diesel power plants and seasonal dust from dirt roads also contribute to local air pollution (Delaney and Dulla, 2007). All of these forms of anthropogenic and natural air pollution impair visibility and occasionally impact public health.

The aerial extents for these forms of air quality impairment are a function of the nature and source of the pollution and the prevailing meteorological conditions (Malm, 1999). Seasonal atmospheric mixing conditions affect distribution and dispersal of air pollution. In winter, for example, strong inversions trap and concentrate air pollutants such as carbon monoxide, sulfur compounds, and other chemicals from incomplete burning of petroleum fuels. Communities within the planning area also use wood stoves for home heating and strong winter inversions increase the local concentration of fine particle ( $PM_{2.5}$ ) emissions from the stoves (Bourne et al. 2010). High altitude arctic haze persists in spring and originates as dust, smoke, and human-made pollution from parts of Asia and Europe (Law and Stohl, 2007). Due to limited amounts of snow, rain, or turbulent air to displace pollutants from the polar air mass in spring, arctic haze can linger for more than a month in the northern atmosphere (ADEC, 2011a).

Summer wildland fires from lightning strikes are common (Todd and Jewkes, 2006). Associated smoke cover can severely limit local and regional visibility, airborne particulate concentrations may reach health hazard levels, and wildland fire odors can attain nuisance levels. Depending on atmospheric conditions, smoke and ash from large wildland fires outside of Alaska may be transported great distances, adversely affecting air quality within the planning area (ADEC, 2011a). Wildland fire smoke periodically impacts air quality during summer months, typically late May through August.

Although infrequent, atmospheric transport of volcanic ash into Interior Alaska may impair air quality at any time of the year. In January and early February of 2006, a series of explosive eruptions occurred at Augustine Island off the southern coast of Alaska. By early February a plume of volcanic ash was transported northward into Interior Alaska (Sassen et al. 2007). During the summer of 1992, ash clouds from explosive eruptions at Mount Spurr Volcano in southern Alaska significantly disrupted air traffic across the United States and Canada. Plumes from the eruption events deposited significant amounts of ash in Interior Alaska (Neal et al. 1995, Schaefer and Nye, 2008).

Wind erosion and transport of dust occasionally impact local air quality along braided glacial rivers and in selected rural communities. There are no large industrial facilities within the planning area and no reports of substantial transport of industrial aerosols or odor from facilities in the greater Fairbanks area. Exhaust from diesel power generators in some rural communities can adversely impact local air quality visibility and odor (Delaney and Dulla, 2007). Rural refuse sites and water treatment plants may also create nuisance odor levels. Noise pollution from motorized vehicles occurs locally from vehicles, boats, and aircraft. Military air combat exercises over the planning area periodically increase noise levels, particularly from low-level jet aircraft over flights, sonic booms, and helicopter activity (FNSB, 2006).

Dust particles (silt) from dried glacial-fed river floodplains may be re-suspended during wind events and transported downwind, periodically (and temporarily) impacting air quality in local

communities. Significant dust storms only occur within the five- to six-month snow-free period during spring, summer, and early fall, although some river bars may be exposed to the wind in winter and dust may accumulate during winter in the snowpack before melting out in the spring (Pewe, 1955). Some glacial river floodplains produce dust clouds regularly, while other may do so only in unusually dry, windy conditions. Substantial dust may also originate from gravel roads, including portions of the Steese and Taylor highways, and in communities without paved roads. Air quality impacts from dust along local community roads in the planning area vary (Delaney and Dulla, 2007).

There are no long-term air-quality monitoring stations in the planning area. Monitoring of carbon monoxide and PM<sub>2.5</sub> is performed in the greater Fairbanks-North Pole area. Based on regional monitoring and agency reports from Fairbanks, Denali National Park, and Whitehorse, Yukon Territory, existing air quality in the planning area is generally excellent, with the exception of periodic smoke and associated particulate matter from summer wildland fires (NPS, 2013; USFWS, 2008). Much of the anthropogenic pollution emissions emanate from urban areas along the southwest border of the planning area, including Delta Junction, North Pole, and Fairbanks. Residential emissions also occur in several small towns and villages within the planning area. Vehicle emissions occur along the Chena Hot Springs Road and the Alaska, Steese, and Taylor highways. The Richardson, Elliott, and Dalton highways are major transportation corridors along the west-central border of the planning area. According to USFWS (2008a), concentrations of regulated air pollutants in the Yukon Flats National Wildlife Refuge (NWR), adjacent to the planning area, are considerably lower than the maximum concentrations allowed under the National Ambient Air Quality Standards and the Alaska Ambient Air Quality Standards.

**Table 3.1. National Ambient Air Quality Standards for six principal criteria pollutants.<sup>a</sup>**

Pollutant [final rule cite]		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide [76 FR 54294, Aug 31, 2011]		primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead [73 FR 66964, Nov 12, 2008]		primary and secondary	Rolling 3 month average	0.15 µg/m <sup>3b</sup>	Not to be exceeded
Nitrogen Dioxide [75 FR 6474, Feb 9, 2010][61 FR 52852, Oct 8, 1996]		primary	1-hour	100 ppb	98 <sup>th</sup> percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	Annual	53 ppb <sup>c</sup>	Annual Mean
Ozone [73 FR 16436, Mar 27, 2008]		primary and secondary	8-hour	0.075 ppm <sup>d</sup>	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particle Pollution Dec 14, 2012	PM <sub>2.5</sub>	primary	Annual	12 µg/m <sup>3</sup>	annual mean, averaged over 3 years
		secondary	Annual	15 µg/m <sup>3</sup>	annual mean, averaged over 3 years
		primary and secondary	Annual	35 µg/m <sup>3</sup>	annual mean, averaged over 3 years
	PM <sub>10</sub>	primary and secondary	24-hour	150 µg/m <sup>3</sup>	98 <sup>th</sup> percentile, averaged over 3 years

Pollutant [final rule cite]	Primary/ Secondary	Averaging Time	Level	Form
Sulfur Dioxide [75 FR 35520, Jun 22, 2010][38 FR 25678, Sept 14, 1973]	primary	1-hour	75 ppb <sup>e</sup>	99 <sup>th</sup> percentile of 1-hour daily maximum concentrations, averaged over 3 years
	secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

<sup>a</sup> Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb) by volume, and micrograms per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ).

<sup>b</sup> Final rule signed October 15, 2008. The 1978 lead standard ( $1.5 \mu\text{g}/\text{m}^3$  as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard. The 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

<sup>c</sup> The official level of the annual  $\text{NO}_2$  standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.

<sup>d</sup> Final rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, EPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard (“anti-backsliding”). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.

<sup>e</sup> Final rule signed June 2, 2010. The 1971 annual and 24-hour  $\text{SO}_2$  standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

## Criteria Air Pollutants

Summary descriptions of each pollutant are included here. “Criteria” air pollutants refer to those air pollutants for which the United States Environmental Protection Agency has developed criteria on which to base National Ambient Air Quality Standards (NAAQS) under the Federal Clean Air Act, including CO, Lead,  $\text{NO}_x$ ,  $\text{O}_3$ ,  $\text{PM}_{10}$  –  $\text{PM}_{2.5}$ , and  $\text{SO}_2$ .

### Carbon Monoxide (CO)

CO is a non-reactive pollutant that is a product of incomplete combustion of organic material, and is mostly associated with motor vehicle traffic, and in wintertime, with wood-burning stoves and fireplaces. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions. These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity, resulting in reduced levels of oxygen reaching the brain, heart, and other body tissues.

### Lead

Lead has a range of adverse neurotoxic health effects, and was released into the atmosphere via leaded gasoline products. The phase-out of leaded gasoline has resulted in dramatically decreased levels of atmospheric lead. Metal processing is currently the primary source of lead emissions. The highest concentrations of lead in air are generally found near lead smelters and general aviation airports; where piston aircraft use leaded fuel. Other stationary sources that generate lead emissions include waste incinerators, utilities, and lead-acid battery manufacturers and recyclers.

### Nitrogen Oxides ( $\text{NO}_x$ )

When combustion temperatures are extremely high, as in aircraft, truck and automobile engines, atmospheric nitrogen combines with oxygen to form various oxides of nitrogen. Nitric oxide (NO) and NO<sub>2</sub> are the most significant air pollutants generally referred to as NO<sub>x</sub>. Nitric oxide is a colorless and odorless gas that is relatively harmless to humans, quickly converts to NO<sub>2</sub>, and can be measured. NO<sub>2</sub> has been found to be a lung irritant capable of producing pulmonary edema. Inhaling NO<sub>2</sub> can lead to respiratory illnesses such as bronchitis and pneumonia.

### Ozone (O<sub>3</sub>)

O<sub>3</sub> is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. O<sub>3</sub> is not emitted directly into the atmosphere but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions.

### Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)

PM<sub>10</sub> and PM<sub>2.5</sub> consist of airborne particles that measure 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. PM<sub>10</sub> and PM<sub>2.5</sub> represent fractions of particulate matter that can be inhaled into the air passages and the lungs, causing adverse health effects. Particulate matter in the atmosphere results from many kinds of dust and fume producing industrial and agricultural operations, fuel combustion, wood burning stoves and fireplaces, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition, construction activities, and mining, are more local in nature, while others, such as vehicular traffic and wood burning stoves and fireplaces, have a more regional effect.

### Sulfur Dioxide (SO<sub>2</sub>)

SO<sub>2</sub> is a combustion product of sulfur or sulfur-containing fuels such as coal and diesel. SO<sub>2</sub> is also a precursor to the formation of atmospheric sulfate and particulate matter, and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain.

#### **3.2.1.1.1.3. Non-Attainment Areas; CO and PM<sub>2.5</sub>**

Under the federal Clean Air Act (CAA), the EPA designates air basins where National Ambient Air Quality Standards (NAAQS) are exceeded as “nonattainment” areas. These are areas where air pollution levels persistently exceed the state or national ambient air quality standards. If standards are met, the area is designated as an “attainment” area. If there are inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified.” Federal nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

The Fairbanks-North Pole urban area along the west central border of the planning area is in nonattainment status for the federal PM<sub>2.5</sub> (ADEC, 2015) and from 1990 – 2004 was in non-attainment for CO. On August 9, 2013 the EPA approved a continued Limited Maintenance Plan (LMP) for CO for the Fairbanks-North Pole urban area (EPA, 2013).

### Carbon Monoxide (CO)

The urban portion of the Fairbanks North Star Borough (FNSB) was designated in 1990 as a nonattainment area for CO, primarily for mobile sources, and classified as “moderate” (EPA, 2013). The area was subsequently reclassified as a “serious” nonattainment area for failing to

attain the ambient eight-hour CO health standard by the December 31, 1995 EPA deadline. A number of attainment plans were submitted to EPA (EPA, 2013), notably; 1) the State of Alaska submitted a maintenance plan and redesignation request on June 21, 2004. EPA proposed (69 FR 44632) and approved (69 FR 44601) the plan and redesignation to attainment on July 27, 2004, and 2) on April 22, 2013, the State of Alaska submitted the Second 10-Year Limited Maintenance Plan (LMP) for the Fairbanks, Alaska CO area. The area qualified for an LMP because the second highest 8-hour CO concentration for the Fairbanks area for the most recent 8 quarters (2011–2012) was 3.6 ppm, which is significantly below the LMP Option requirement of 7.65 ppm (ADEC, 2015).

#### Particulate Matter (PM<sub>2.5</sub>)

A portion of the Fairbanks North Star Borough, including the City of Fairbanks and the City of North Pole, was designated as a PM<sub>2.5</sub> non-attainment area in December 2009 (ADEC, 2015). These areas exceeded the health based 24 hour exposure limit of 35 micrograms/cubic meter for fine particulate matter (PM<sub>2.5</sub>).

Analysis shows that local emissions from wood stoves, burning distillate oil, industrial sources, and mobile emissions contribute to particulate pollution. For planning purposes, PM<sub>2.5</sub> is primarily a concern during the winter months (October through March) when extremely strong temperature inversions are frequent and human-caused air pollution impacts increase. For additional details see ADEC website <http://dec.alaska.gov/air/anpms/index.htm>. Summertime smoke from wildland fires are also a health concern, but are addressed as natural, uncontrollable, exceptional events.

#### **3.2.1.1.1.4. General Conformity Analysis**

The General Conformity Rule applies to federal actions occurring in non-attainment or maintenance areas when the net change in total direct and indirect emissions of non-attainment pollutants (or their precursors) exceeds specific thresholds (known as de minimis levels). The intent of the General Conformity requirements is to prevent the air quality impacts of federal actions from causing or contributing to a violation of the National Ambient Air Quality Standards (NAAQS – EPA, 2014) or interfering with the purpose of the State Implementation Plan (SIP). This means that under the Clean Air Act, Section 176 and 40 CFR, Part 93, Subpart W, Conformity Rules (EPA, 1993), federal agencies must make a determination that proposed actions in federal non-attainment areas conform to the applicable EPA approved state implementation plan before an action is taken.

The EPA Conformity Rule (EPA, 2013) establishes a process that is intended to demonstrate that the proposed federal action (1) would not cause or contribute to new violations of federal air quality standards; (2) would not increase the frequency or severity of existing violations for federal air quality standards; and (3) would not delay the timely attainment of federal ambient air quality standards.

A majority of the air emissions projected in the planning area result from wildfires. Proposed BLM activities within the planning area would not likely be a source of wildfires. Only a small amount of air emissions are projected to occur from prescribed burning. In the long-term, the intent of prescribed burning is to mitigate impacts from wildfires.

All prescribed burning within the Fairbanks PM<sub>2.5</sub> non-attainment area must meet the criteria contained in the Alaska Enhanced Smoke Management Plan (Alaska Department of Environmental Conservation, 2011), which prohibits smoke intrusions into smoke sensitive

receptor areas (SSRAs). As a result, the Conformity Rule is not applicable for BLM prescribed burning actions within non-attainment areas.

The Conformity Rule is not applicable for prescribed burning within non-attainment areas since the burning would (1) not likely cause or contribute to new violations of federal air quality standards; (2) would not increase the severity of existing violations for federal and state air quality standards; or (3) would not delay the timely attainment of federal air quality standards.

In addition, the Conformity Rule is also not applicable for wildfires that may occur within non-attainment areas. There is no reference to wildfires or the Conformity Rule in either the Alaska Enhanced Smoke Management Plan or Alaska State Implementation Plan (SIP). Summertime smoke from wildfires is considered as natural, uncontrollable, exceptional events (Alaska Department of Environmental Conservation, 2015) which will increase the amount of particulates (including PM<sub>2.5</sub>), carbon monoxide (CO), and other gaseous air pollutants (including greenhouse gases) in the atmosphere.

Within the Fairbanks PM<sub>2.5</sub> non-attainment area and Fairbanks CO maintenance area there would not likely be any BLM activities that would cause a deterioration of air quality. Local emissions from wood stoves, burning distillate oil, industrial sources, and mobile emissions contribute to particulate and CO pollution in the Fairbanks area. During winter months (October through March), extremely strong temperature inversions are frequent and human-caused air pollution impacts increase (Alaska Department of Environmental Conservation, 2015).

### **3.2.1.1.2. Greenhouse Gas Emissions (GHG)**

The burning of fossil fuels such as coal and oil, deforestation, land-use changes, and other sources have caused the concentrations of heat-trapping "greenhouse gases" to increase significantly in our atmosphere (NOAA 2014). These gases in the atmosphere absorb some of the energy being radiated from the surface of the Earth and then re-radiate this energy with some returning to the Earth's surface, essentially acting like a blanket that makes the Earth's surface warmer than it would be otherwise (IPCC, 2013). Although the Earth's atmosphere consists mainly of oxygen and nitrogen, neither plays a significant role in enhancing the greenhouse effect because both are essentially transparent to terrestrial radiation. The greenhouse effect is primarily a function of the concentration of water vapor, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and other trace gases in the atmosphere that absorb the terrestrial radiation leaving the surface of the Earth (IPCC, 2013). A number of scientists are confident that human activities are changing the composition of the atmosphere, and that increasing the concentration of greenhouse gases will change the planet's climate. For more detailed information see: <<http://www.epa.gov/climatechange/science>>.

#### **3.2.1.1.2.1. Regulations, Guidance, and Policy GHG**

Currently, there are no Federal or State regulations that establish ambient air quality emissions standards for GHGs. However, the U.S. Environmental Protection Agency, on October 30, 2009, published a rule for mandatory reporting of greenhouse gases (GHG) from large GHG emission sources and in 2010 implemented the rule, referred to as the Greenhouse Gas Reporting Rule (GHGRR), requiring facilities emitting more than 25,000 metric tons (MT) of carbon dioxide equivalents (CO<sub>2</sub>Eq.) to report their emissions to the EPA annually.

The EPA, the Council on Environmental Quality (CEQ), and Presidential Executive Orders provide GHG reporting guidance for federal agencies.

Executive Order (EO) 13514, issued October 5, 2009, "Federal Leadership In Environmental, Energy, and Economic Performance," introduced new GHG emissions management and reduction requirements for the federal government. On February 19, 2015, President Obama signed Executive Order (EO) 13693 — superseding EO 13514 — as part of the Federal government's commitment to lead by example in curbing the greenhouse gas (GHG) emissions believed to be driving climate change. For additional information see (<https://www.whitehouse.gov/administration/eop/ceq/sustainability>)

The CEQ issued guidance (December 2014), providing direction for federal agencies on when and how to consider the effects of GHG emissions and climate change in their evaluation of all proposed federal actions in accordance with the National Environmental Policy Act (NEPA) and the CEQ regulations implementing the procedural provisions of NEPA (CEQ Regulations 42 U.S.C. § 4321 et seq.; 40 CFR Parts 1500-1508). The CEQ guidance, incorporated here by reference, "is not a rule or regulation, and the recommendations it contains may not apply to a particular situation based upon the individual facts and circumstances." Guidance is focused on (1) encouraging agencies to draw from their experience and expertise to determine the appropriate level (broad, programmatic or project- or site-specific) and type (quantitative or qualitative) of analysis required to comply with NEPA, and (2) recommending agencies focus their analysis on the projects and actions with the greatest impacts by providing a reference point of 25,000 metric tons of CO<sub>2</sub>-equivalent (MTCO<sub>2</sub> Eq.) emissions on an annual basis below which a quantitative analysis of GHG emissions is not recommended unless it is easily accomplished. This guidance does not change or substitute for any law, regulation, or other legally binding requirement, and is not legally enforceable. Furthermore, the CEQ does not propose the 25,000 MTCO<sub>2</sub>Eq. reference point as an indicator of a level of GHG emission that may significantly affect the quality of the human environment, as that term is used by NEPA, but rather serves as a minimum standard for reporting emissions under the Clean Air Act.

### 3.2.1.1.2.2. Existing Environment – GHG Emission

Much of the Alaska GHG emissions discussion herein is summarized from the Alaska Department of Environmental Conservation Air Quality Division Report by Landsberg et al. (2015). This new report updates the Alaska State Greenhouse Gas Emissions Inventory with results from 1990 through 2010 providing statewide emissions as well as emissions from the stationary sources required to report under the federal Greenhouse Gas Reporting Rule. Stationary sources are typically larger industrial facilities operating in the state and are subject to air quality permit requirements.

The Landsberg et al. (2015) report addresses the six Kyoto greenhouse gases, and includes the global warming potential (GWP) of each of the gases (Table 3.2). The GWP compares the atmospheric warming ability of a compound to carbon dioxide. This comparison means that 1 pound of methane warms the atmosphere as much as 21 pounds of carbon dioxide (Table 3.2).

**Table 3.2. Greenhouse Gases Sources and Global Warming Potential (100-Year Time Horizon)**

Greenhouse Gas	Common Sources and Uses	Global Warming Potential CO <sub>2</sub> Eq.
Carbon dioxide (CO <sub>2</sub> )	Combustion	1
Methane (CH <sub>4</sub> )	Combustion, decomposition	21

Greenhouse Gas	Common Sources and Uses	Global Warming Potential CO <sub>2</sub> Eq.
Nitrous oxide (N <sub>2</sub> O)	Combustion	310
Sulfur hexafluoride (SF <sub>6</sub> )	Electrical insulator	23,900
Hydrofluorocarbons (HFCs)	Refrigerants	12–11,700
Perfluorocarbons (PFCs)	Semiconductors, medical uses	6,500–9,200

The GWP values in Table 3.2, from Landsberg et al. (2015), are based on GWP values published in 40 CFR Part 98 Table A-1 for a 100-year time horizon and vary somewhat from the revised United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines which use GWP values from the *IPCC Fourth Assessment Report (AR4)* (IPCC 2007). As an example, under current UNFCCC guidelines the GWP of methane (CH<sub>4</sub>) is 25 versus 21 reported in Table 3.2 and for nitrous oxide (N<sub>2</sub>O) is 298 versus 310 in Table 3.2. See (<http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf>) for additional information.

As background Table 3.3 partitions the GHG emission in Alaska by sectors for the years 1990, 2000, and 2005 through 2010, respectively, and includes emission sinks as well. From about 1995 through 2003, GHG emissions were relatively stable at about 50 million metric tons (MMT) of carbon dioxide equivalents (Table 3.3). Emissions peaked in 2005 and by 2009 had declined by about 23 percent. Some of this decline may be due to the relatively recent economic recession as emissions increased in 2010. The industrial sector, including the oil and gas industries, produces the most greenhouse gas 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 greenhouse gases in Alaska (Table 3.3).

**Table 3.3. Alaska Historical and Reference Case GHG Emissions, by Sector<sup>a</sup>**

Year	1990	2000	2005	2006	2007	2008	2009	2010
Electricity Production	3.05	3.62	3.69	3.96	3.74	3.73	3.65	3.51
Residential & Commercial	4.36	5.27	4.90	5.35	4.97	5.03	4.68	5.02
Industrial	24.87	26.33	27.02	23.21	23.36	21.33	21.04	20.26
Transportation	11.18	14.31	17.37	17.37	16.35	13.89	11.64	13.36
Industrial Processes	1.10	1.17	1.14	0.48	0.47	0.26	0.27	0.29
Waste	0.32	0.4	0.45	0.47	0.49	0.5	0.52	0.53
Agriculture	0.05	0.05	0.07	0.07	0.08	0.08	0.09	0.08
<b>Gross Emissions</b>	<b>44.93</b>	<b>51.16</b>	<b>54.64</b>	<b>50.92</b>	<b>49.45</b>	<b>44.81</b>	<b>41.88</b>	<b>43.04</b>
Emission Sinks	-6.5	-25.2	5.2	-29.04	-26.06	-30.31	-8.15	-22.37
<b>Net Emissions</b>	<b>38.43</b>	<b>25.96</b>	<b>59.84</b>	<b>21.87</b>	<b>23.39</b>	<b>14.5</b>	<b>33.74</b>	<b>20.67</b>
Increase Over 1990	0	6.23	9.71	5.99	4.52	-0.12	-3.05	-1.89
<b>Increase Relative to 1990</b>	<b>0%</b>	<b>14%</b>	<b>22%</b>	<b>13%</b>	<b>10%</b>	<b>0%</b>	<b>-7%</b>	<b>-4%</b>

<sup>a</sup>Alaska Greenhouse Gas Emissions, 1990, 2000, and 2005 through 2010 (MMT CO<sub>2</sub>Eq.), modified from (Landsberg et. al., 2015)

Variability of two key sectors in Table 3.3 should be noted. First, emissions in the residential and commercial sector is roughly flat, indicating that as the population in Alaska has grown, we have become more efficient in our energy use in these areas through various energy efficiency measures (Landsberg et. al., 2015). Second, the way we use land affects the ability of the natural environment to take up and store, or sequester, carbon, serving as “emission sinks” by removing carbon from the atmosphere. The land use, land use change, and forestry sector calculations take

into account a variety of factors that affect the ability of the soil and plants to store carbon. These “Emission Sink” factors are relatively stable over time, with the exception of wildfires, which can vary greatly from year-to-year.

Because the Fairbanks North Star Borough (57,000 mi<sup>2</sup>) encompasses much of the west central portion of the planning area, reported GHG emissions for the borough (Table 3.4) are considered more representative of the magnitude of current annual GHG emissions in the planning area than those reported for the State as a whole (Table 3.3). Discussion of the FNSB GHG emissions is largely summarized from the Alaska Center for Energy and Power (ACEP) 2008 report for the Fairbanks North Star Borough Baseline Greenhouse Gas Emissions Inventory, Base Year 2007 unless referenced otherwise.

Total 2007 GHG emissions for the FNSB, including the “air fuel” Sector were 4.32 MMTCO<sub>2</sub>Eq., or 44.3 metric tons per resident. Per Capita emissions in the FNSB are significantly higher (88 percent) than the national average, primarily as a result of the cold climate. On the other hand, the per capita emissions in the FNSB (no air fuel) are almost 50 percent lower than the average for the State of Alaska (Table 3.5), primarily because this inventory does not account for the bulk of industrial emissions in the State, such as those associated with the oil and gas industry outside of the FNSB area.

Table 3.4 shows the FNSB emissions by sector with air fuel combustion emissions included. Fairbanks International Airport air fuel emissions are added to the Transportation sector and emissions from air fuel at Eielson Air Force Base and Fort Wainwright are added to the Military sector. If fuel combusted by airplanes is not included, total 2007 FNSB emissions were 3.76 MMTCO<sub>2</sub>Eq. or 38.6 MTCO<sub>2</sub>Eq. per resident.

**Table 3.4. Fairbanks North Star Borough Emissions with Air Fuel**

Source	Emissions MMTCO <sub>2</sub> Eq.
Agricultural	0.01
Commercial	0.71
Industrial	1.03
Industrial Processes	0.05
Military	1.09
Residential	0.83
Transportation	0.55
Waste Management	0.06

To put the FNSB GHG emissions into perspective, it is interesting to compare how much the Borough is emitting compared to both the state of Alaska and the United States as a nation. Table 3.5 shows a comparison of these emissions sources, using recent GHG inventories from Alaska and the United States. In addition to total emissions, Table 3.5 also shows GHG emissions per capita, which is an estimate of the emissions for each individual living in the FNSB, Alaska, and the United States. This table shows that on a per capita basis, emissions in the FNSB are significantly higher (64 percent) than the national average, but lower than the average for the State of Alaska.

The higher per capita emissions in the FNSB, compared to the U.S., are largely a by-product of our cold climate. When considering climate as a factor, GHG emissions from heating are most directly and obviously impacted. However, emissions from transportation sectors are also higher in colder climates. The Alaska Center for Energy and Power has calculated as much as a 25 percent decline in motor fuel efficiency in winter compared to summer months, due to poor lubrication in bearings

and other moving engine components. The higher electricity use in the FNSB in winter months due to lack of natural light is also a factor related to our geographic location.

**Table 3.5. Per Capita Greenhouse Gas Emissions<sup>a</sup>**

Region	Emissions Estimate (MMT CO <sub>2</sub> Eq.)	Year	Estimated Population	Year	Emissions Per Capita (MTCO <sub>2</sub> Eq.)
United States <sup>b</sup>	7054	2006	299,398,484	2006	23.6
Alaska <sup>c</sup>	52.1	2005	670,053	2006	77.7
FNSB (no air) <sup>d</sup>	3.76	2007	97,484	2007	38.6
FNSB (w/air) <sup>d</sup>	4.32	2007	97,484	2007	44.3

<sup>a</sup> Modified from ACEP 2008

<sup>b</sup>US Total Emissions: United States Environmental Protection Agency, Inventory of U.S. Greenhouse Gas *Emissions Sources and Sinks: Executive Summary*, page 6; available from [http://epa.gov/climatechange/emissions/downloads/08\\_ES.pdf](http://epa.gov/climatechange/emissions/downloads/08_ES.pdf); accessed August 1, 2008.

<sup>c</sup>Alaska Total Emissions: Roe, Stephen et al. Alaska Greenhouse Gas Inventory and Reference Case Projections, 1990 to 2020 (Center for Climate Strategies, July 2007), page 3; available from Appendix C in: Alaska Department of Environmental Conservation. Summary Report of Improvements to the Alaska Greenhouse Gas Emissions *Inventory*. January 2008; available from [http://climatechange.alaska.gov/docs/ghg\\_ei\\_rpt.pdf](http://climatechange.alaska.gov/docs/ghg_ei_rpt.pdf); accessed July 31, 2008, page 65.

<sup>d</sup>(no air & w/air): ACEP, Alaska Center for Energy and Power, University of Alaska, 2008. Fairbanks North Star Borough Baseline Greenhouse Gas Emissions Inventory, Base Year 2007. Prepared for the Fairbanks North Star Borough by: Alaska Center for Energy and Power, University of Alaska, Gwen Holdmann, Organizational Director, John Murphy, Research Technician, September 23, 2008.

Estimates for annual GHG emissions for communities within the planning area (Table 3.6) were calculated using 2010 community census data and the most recent 2007 per capita GHG emissions (44.3 MTCO<sub>2</sub>Eq.) for the Fairbanks North Star Borough (ACEP, 2008). Calculated emissions in Table 3.6 illustrate the general magnitude of annual greenhouse gas emissions expected from each of the communities in the planning area with the understanding that emissions may vary considerably from community to community. In 2010 the Fairbanks and Delta areas contributed the most GHG emissions 1,893,205 and 196,382 MTCO<sub>2</sub>Eq. respectively. The Eagle area, at 12,803 MTCO<sub>2</sub>Eq., and Fort Yukon area at 42,129 MTCO<sub>2</sub>Eq., contributed the least emissions.

**Table 3.6. Estimated Annual Greenhouse Gas Emissions for Communities within the Planning Area, 2010<sup>a</sup>**

Community	Population <sup>b</sup>	Greenhouse Gas Emissions
	Year 2010	population x per capita <sup>c</sup> (MTCO <sub>2</sub> Eq.) <sup>d</sup>
Fairbanks North Star Borough	97,581	4,322,838
Southeast Fairbanks Census Area	7,029	311,385
Yukon-Koyukuk Census Area	5,588	247,548
Big Delta	591	26,181
Delta Junction	958	42,439
Deltana	2,251	99,719
Dry Creek	94	4,164
Fort Greely	539	23,878
<b>Delta Area</b>	<b>4,433</b>	<b>196,382</b>
Eielson AFB	2,647	117,262
Ester	2,422	107,295
Fairbanks	31,535	1,397,001
Fox	417	18,473
Harding/Birch Lakes	299	13,246
Livengood	13	576
Moose Creek	747	33,092

Community	Population <sup>b</sup>	Greenhouse Gas Emissions
	Year 2010	population x per capita <sup>c</sup> (MTCO <sub>2</sub> Eq.) <sup>d</sup>
North Pole	2,117	93,783
Pleasant Valley	725	32,118
Salcha	1,095	48,509
Two Rivers	719	31,852
<b>Fairbanks Area</b>	<b>42,736</b>	<b>1,893,205</b>
Tanacross	136	6,025
Tetlin	127	5,626
Tok	1,258	55,729
Northway	71	3,145
Northway Junction	54	2,392
Northway Village	98	4,341
Healy Lake	13	576
Dot Lake	13	576
Dot Lake Village	62	2,747
<b>Tok Area</b>	<b>1,832</b>	<b>81,158</b>
Alcan Border (Boundary)	33	1,462
Central	96	4,253
Chicken	7	310
Eagle	86	3,810
Eagle Village	67	2,968
<b>Eagle Area</b>	<b>289</b>	<b>12,803</b>
Beaver	84	3,721
Birch Creek	33	1,462
Chalkyitsik	69	3,057
Circle	104	4,607
Fort Yukon	583	25,827
Stevens Village	78	3,455
<b>Yukon River Area</b>	<b>951</b>	<b>42,129</b>

<sup>a</sup>Estimates are based on Census Population data for 2010 and 2007 per capita GHG emissions of 44.3 MTCO<sub>2</sub>Eq.

<sup>b</sup>Source ADLWD 2103a

<sup>c</sup>Source ACEP 2008

<sup>d</sup>To convert from metric tons to tons, multiply by 1.1023

Seasonal placer mining is the single largest BLM-authorized industrial activity in the planning area, particularly in the Fortymile and Steese subunits. Estimates of GHG contributions from travel and transportation activities, including emissions from OHV use, will be addressed in the forthcoming travel management plans. However for context, based on anecdotal reports from recreation staff, GHG emissions from recreation OHVs would likely be less than half of the annual emissions associated with the placer-mine industry.

Estimated GHG emissions for placer mine operations by subunit (Table 3.7) were calculated utilizing the BLM Solid Mineral Production Sand and Gravel Mining and Processing Emissions Calculator found in the BLM Greenhouse Gas & Climate Change NEPA (GHGCC-NEPA) toolkit an internal, web-based tool (<http://ghgtoolkit.blm.gov/>) that contains a suite of greenhouse gas calculators for specific resource development activities. Emission calculations are based on the type, quantity, load, and period of equipment use annually for placer mine activities including mining exploration, suction dredge operations, small and large placer operations, as well as equipment mobilization-demobilization.

**Table 3.7. Estimated Annual Greenhouse Gas Emissions for BLM Placer-mine Activities by Planning Area Subunit, 2014**

Subunit	Existing Environment <sup>a</sup> 2014, GHG Emissions <sup>b</sup> (MTCO <sub>2</sub> Eq.) <sup>c</sup>	Planning Area Subunit Percent Contribution from Placer-mine GHG Emissions
Fortymile Subunit	2,708	61%
Upper Black River Subunit	0	0%
Steese Subunit	1,154	26%
White Mountains Subunit	548	13%
<b>Subtotals</b>	<b>4,410</b>	<b>100%</b>

<sup>a</sup>Source Table 4.1 Mining Claims and Mining Plans of Operations or Notices in the Planning Area. Same as Alternative A.

<sup>b</sup>Source BLM Greenhouse Gas & Climate Change NEPA toolkit web-based tool (<http://ghgtoolkit.blm.gov/>), Solid Mineral Production Sand and Gravel Mining and Processing Emissions Calculator.

<sup>c</sup>To convert from metric tons (MT) to tons, multiply by 1.1023

Quantities of GHG emissions reported in Table 3.7 are *best estimates*, that illustrate the general magnitude of annual greenhouse gas emissions expected from current placer-mine activities in the planning area with the understanding that the number of operations, and hence emissions, may vary considerably from year-to-year.

In 2014 the Fortymile and Steese Subunits placer-mine operations contributed the most GHG emissions, 2,708 and 1,154 MTCO<sub>2</sub>Eq. respectively. About 87 percent of the estimated annual total emissions of 4,410 MTCO<sub>2</sub>Eq. attributed to the placer-mine industry in 2014 on BLM-managed lands within the planning area.

As discussed earlier in this section, the CEQ issued guidance (December 2014), providing direction for federal agencies on when and how to consider the effects of GHG emissions in NEPA actions and recommending agencies focus their analysis on the projects and actions with the greatest impacts by providing a reference level of 25,000 metric tons of CO<sub>2</sub>-equivalent emissions on an annual basis below which a quantitative analysis of GHG emissions is not recommended unless it is easily accomplished.

Comparatively the total annual placer-mine related GHG emissions of 4,410 MTCO<sub>2</sub>Eq. for the planning area is about 18 percent of the 25,000 metric tons of CO<sub>2</sub>-equivalent emissions reference value recommended by CEQ as a metric for federal agency quantitative reporting of GHG emissions.

There are no large-scale lode mines on BLM-managed lands. However for reference there are two large-scale lode gold mines within the planning area boundary; Fort Knox Mine near Fairbanks reported 2014 GHG emissions of 417,000 tonnes CO<sub>2</sub>Eq. ([www.kinross.com](http://www.kinross.com)) and Pogo Mine near Delta reported 2007 GHG emissions of 75,000 tonnes CO<sub>2</sub>Eq. ([www.teck.com](http://www.teck.com)).

### 3.2.1.2. Climate and Meteorology

The climate of eastern Interior Alaska is continental–subarctic; characterized by long, exceptionally cold winters, short, relatively warm summers, low annual precipitation, low humidity, and variable winds (Baily, 1980, Shulski and Wendler, 2007). Microclimate conditions within the planning area are influenced by variations in elevation, topography, and cloud cover. Annual mean temperature (about 28 degrees F.) is just below freezing (Wendler and Shulski, 2009), and annual precipitation usually varies from about 10 to 30 inches, with upland areas receiving more precipitation than lower areas. The seasonal precipitation pattern is normally

at a minimum in spring and at a maximum in late summer—July and August (Shulski and Wendler, 2007). Summer thunderstorms are common over the hills and upland areas. Climate strongly influences fire severity and frequency, with the greatest aerial extent of burning directly related to precipitation, temperature, and lightning strikes (Kasischke, et. al., 2006). Summer maximum temperatures range from the upper 70s to extreme readings in the 90s degrees F. Winter temperatures may be minus 50 degrees F. or lower for two or three weeks at a time (Western Regional Climate Center, accessed September 2015 at <http://www.wrcc.dri.edu/narratives/alaska>).

Snow cover and freezing temperatures typically persist from October through April. Local rivers normally begin freezing by the first week of October; melting of the river ice generally occurs in May. Wind conditions often reflect channeling and mountain valley flows due to complex terrain.

The high latitude environment causes the planning area to experience extreme seasonal variability in solar radiation. Seasonal climate variations influence local and regional air quality. The northeast portion of the planning area is north of the Arctic Circle – the invisible circle of latitude on the Earth's surface at 66°33' north, marking the southern limit of the area where the sun does not rise on the winter solstice, December 21, or set on the summer solstice, June 21. Daylight hours in the southeast portion of the planning area vary from a minimum of about four hours in winter, to more than 20 hours in summer. Lowlands, such as the Yukon Flats, experience frequent temperature inversions in winter (Western Regional Climate Center, 2011). Fairbanks, along the western border of the planning area, has some of the world's strongest inversions, sometimes 30 to 40 degrees F. colder at ground level than at several hundred feet above ground (Davis, 1976, Bourne et al. 2010). Ice fog forms from water vapor at temperatures colder than minus 30 degrees F. At these extreme temperatures, water vapor from motor vehicle exhaust is frozen as tiny ice particles as it exits the tailpipe, resulting in heavy buildup of ice fog along roadways and in urban areas.

Recent meteorological observations are available from the National Weather Service and the Alaska Climate Research Center for several small communities within the planning area including Eagle, Fort Yukon, and Circle City along the Yukon River, as well as Central, Tok, and Chicken. Historical data from these stations, however, have frequent breaks and are often discontinuous for extended periods. The most reliable continuous datasets for Interior Alaska are from Fairbanks and Big Delta along the southwest boundary of the planning area and from Bettles north and McGrath west of the planning area. Good climatological data are available for Big Delta, Bettles, and McGrath for the years 1949 onward. However, Fairbanks is the only climatological station in Interior Alaska with an unbroken 100-year record beginning in 1906. Wendler and Shulski (2009) compared the mean annual temperatures for Fairbanks to four other Interior Alaska stations, including Bettles and McGrath, and found that, although the absolute values differed, the overall pattern were quite similar (correlation coefficients greater than 0.99). Hence, Fairbanks climate data are used in this section as a broad representation of historical climate conditions for the planning area.

Fairbanks climate normals (1981–2010) for air temperature, precipitation, snowfall extremes, and degree days are summarized in Table 3.7. Daily and monthly extremes (1930–2014) for air temperature, precipitation, and snowfall are included in tables 3.8, 3.9, 3.10, and 3.11 respectively. These climate data are considered broadly representative of climate conditions found over much of the planning area. Additional climate data are available for selected sites from the University of Alaska Climate Research Center (ACRC) (<http://climate.gi.alaska.edu/station-map>) as well as from previously noted agency sources.

**Table 3.8. Summary of Normals for Air Temperature, Precipitation, Snowfall, and Degree Days, Fairbanks Alaska, 1981–2010 <sup>a</sup>**

Normal	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Temperatures Mean Maximum (F)	1.1	10	25.4	44.5	61	71.6	72.7	65.9	54.6	31.9	10.9	4.8	38.0
Mean (F)	-7.9	-1.3	11.4	32.5	49.4	60.4	62.5	56.1	44.9	24.2	2.6	-4.1	27.7
Mean Minimum (F)	-16.9	-12.7	-2.5	20.6	37.8	49.3	52.3	46.4	35.1	16.5	-5.7	-12.9	17.4
Mean Precipitation (in)	0.58	0.42	0.25	0.31	0.6	1.37	2.16	1.88	1.1	0.83	0.67	0.64	10.81
Snowfall (in)	10.3	8.1	4.9	2.9	0.9	0	0	0	1.8	10.8	13.2	12.1	65.0
Cooling Degree Day (Base 65 F)	0	0	0	0	1	23	31	6	0	0	0	0	
Heating Degree Day (Base 65 F)	2260	1858	1660	974	485	160	108	281	605	1265	1872	2141	

<sup>a</sup>Alaska Climate Research Center website; <http://climate.gi.alaska.edu/>, accessed June 08, 2014

**Table 3.9. Air Temperature Extremes, Daily and Monthly for Fairbanks Alaska, 1930–2014.<sup>a</sup>**

Temperature Extremes	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Highest Daily Maximum (°F)	52	50	56	76	90	96	94	93	84	72	54	58
Year	2009	1943	1994	2009	1947	1969	1975	1994	1957	2003	1936	1934
Lowest Daily Minimum (°F)	-66	-58	-49	-32	-1	29	34	23	3	-28	-46	-62
Year	1934	1947	1956	1944	1964	2006	1934	1947	1992	1935	1990	1961
Highest Mean (°F)	18.1	15.9	27.1	43.7	55.6	66.9	68.4	62.6	52.8	37.8	20.1	7.7
Year	1981	1980	1981	1940	2005	2004	1975	1977	1995	1938	1979	1985
Lowest Mean (°F)	-31.7	-25.3	-6.7	17.95	38.61	51.63	55.5	49.77	31.65	13.19	-10.5	-28.2
Year	1971	1979	1959	2013	1964	1949	1959	1969	1992	1996	1963	1956

<sup>a</sup>Alaska Climate Research Center website; <http://climate.gi.alaska.edu/>, accessed June 08, 2014

Table 3.10. Precipitation Extremes, Daily and Monthly for Fairbanks Alaska, 1930–2014<sup>a</sup>

Precipitation Extremes	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Highest 1-Day Maximum Precipitation (in)	1.33	0.86	0.87	0.92	0.78	1.38	2.27	3.42	1.21	1.17	0.91	0.94
Year	1937	1966	1963	2002	1992	1955	2003	1967	1954	1946	1935	1990
Highest Total Precipitation (in)	6.71	2.1	2.1	3.06	1.96	3.55	5.96	6.88	3.05	3.4	3.32	3.23
Year	1937	1944	1963	2002	2004	1949	2003	1930	1960	1935	1970	1984
Lowest Total Precipitation (in)	0.01	0.01	0.02	0.01	0.04	0.19	0.06	0.24	0.12	0.08	0.05	0.04
Year	1966	1976	2003	1944	2011	1966	2009	2005	1949	1954	2002	1952

<sup>a</sup>Alaska Climate Research Center website; <http://climate.gi.alaska.edu/>, accessed June 08, 2014

**Table 3.11. Snow Extremes Daily and Monthly for Fairbanks Alaska, 1930–2014 <sup>a</sup>**

<b>Snow Extremes</b>	<b>Jan.</b>	<b>Feb.</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug.</b>	<b>Sept.</b>	<b>Oct.</b>	<b>Nov.</b>	<b>Dec.</b>
Highest 1-Day Maximum Snow (in)	15.5	16	12.6	10.8	9.4	1.2	0	0.1	7.8	12.5	14.6	12.9
Year	1937	1966	1963	1948	1992	1931	1930	1995	1992	1946	1970	1965
Highest Total Snow (in)	65.6	43.1	30.4	25.1	14.1	1.2	0	0.1	24.4	26.2	54	50.7
Year	1937	1966	1991	1948	1992	1931	1930	1995	1992	1935	1970	1984
Lowest Total Snow (in)	0.7	0.2	0.1	0.1	0	0	0	0	0	0.7	0.2	0.4
Year	1966	2000	1968	1954	1936	1930	1930	1930	1934	2013	1953	1952

<sup>a</sup>Alaska Climate Research Center website; <http://climate.gi.alaska.edu/>, accessed June 08, 2014

### 3.2.1.3. Climate Change

Climate change refers to long-term fluctuations in temperature, precipitation, wind, and other elements of the Earth's climate system (EPA, 2013). Both natural and anthropogenic processes contribute to climate change. Examples of the natural influences that affect the climate system include changes in Earth's orbital cycle, sunspot activity, and volcanic eruptions. The climate system can also be influenced by changes in the concentration of various gases in the atmosphere, which affect the Earth's absorption of radiation (USGCRP, 2009). Scientists are confident that human activities are changing the composition of the atmosphere, and that increasing the concentration of greenhouse gases will change the planet's climate, however; they are not sure by how much it will change, at what rate it will change, or what the exact effects will be. For more detailed information see <<http://www.epa.gov/climatechange/science>>.

#### 3.2.1.3.1. Regulations, Guidance, and Policy

Secretarial Order No. 3285, issued on March 11, 2009 "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources," made production and transmission of renewable energy on public lands a priority for the Department of the Interior. This Order establishes a Department-wide approach for applying scientific tools to increase understanding of climate change and to coordinate an effective response to its impacts on tribes and on the land, water, ocean, fish and wildlife, and cultural heritage resources that the Department manages.

On September 14, 2009, DOI Secretary Ken Salazar signed Secretarial Order 3289 (amended February 22, 2010) entitled, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources." The Order establishes the foundation for two partner-based conservation science entities to address these unprecedented challenges: Climate Science Centers (CSCs) and Landscape Conservation Cooperatives (LCCs). CSCs and LCCs are the Department-wide approach for applying scientific tools to increase understanding of climate change and to coordinate an effective response to its impacts on tribes and the land, water, ocean, fish and wildlife, and cultural-heritage resources that DOI manages.

The Department of the Interior Climate Change Adaptation Policy (523 DM 1) was issued in December 2012 in response to the need to prepare for the impacts of climate change (DOI, 2012). The Policy articulates and formalizes the Departmental approach to climate change adaptation and provides guidance to bureaus and offices for addressing climate change impacts on the Department's mission, programs, operations, and personnel. The new policy also establishes clear Departmental leadership responsibilities for climate change adaptation implementation.

In November 2013, President Obama signed Executive Order 13653, which directs federal agencies to prepare for the impacts of climate change. Climate preparedness is one of three core elements of the President's Climate Action Plan.

Released in 2014, the Department of the Interior's Climate Change Adaptation Plan (DOI, 2014) focuses on the Department's work to address climate change through implementation of Executive Order 13653 and the Department's Climate Change Adaptation Policy (523 DM 1). Available at: <https://www.fedcenter.gov/programs/climate/#regs>

The Goal of Executive Order EO 13693 (March 19, 2015), "Planning for Federal Sustainability in the Next Decade" is to maintain Federal leadership in sustainability and greenhouse gas emission

reductions. Implementing Instructions for Executive Order (EO) 13693 were issued June 10, 2015, and provide Federal Executive departments and agencies with clarifying instructions for implementing EO 13693.

### 3.2.1.3.2. Existing Environment – Observed Climate Trends – Temperature

In this section Fairbanks climate data are used as a proxy for climate trends over much of the planning area because of the data quality, length of record, and strong correlation of the Fairbanks climatological dataset with data from other Interior Alaska climate stations. Selected climatological data from other representative Interior Alaska stations, Big Delta, Bettles, and McGrath are also presented.

Wendler and Shulski (2009) partitioned the 1906 to 2006 mean annual Fairbanks temperature data by decade and found the 1980s (-1.94 C, 28.5 F) followed by the 1920s (-2.39 C, 27.7 F) were the warmest decades in Fairbanks (Table 3.12). Reportedly, 1926 was the warmest year on record, with a mean annual temperature just above the freezing point; 1981 was the second warmest year on record, with a mean annual temperature at 32 degrees F. (0 C.).

**Table 3.12. Mean decadal temperatures, 1910s – 1990s, Fairbanks Alaska, degrees C <sup>a</sup>**

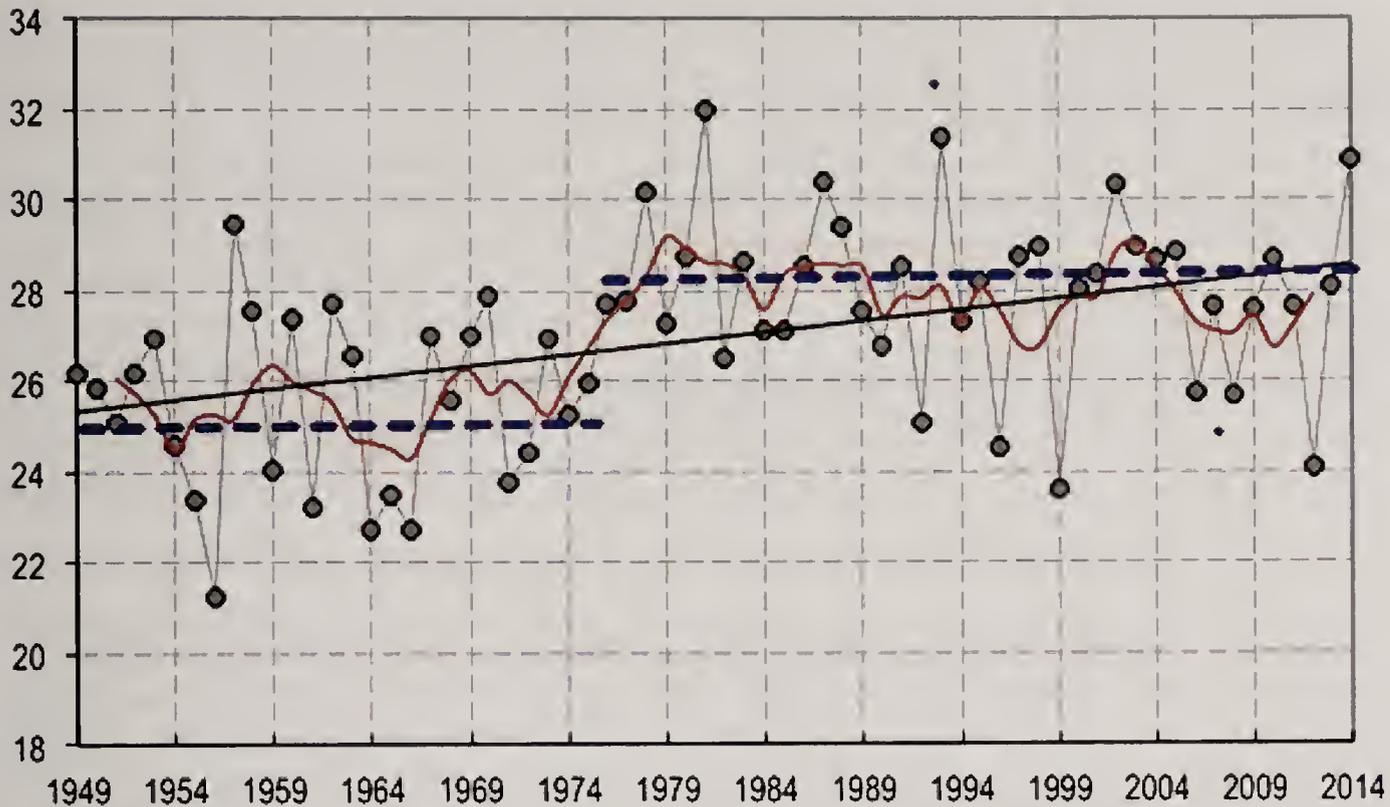
1910s	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s
-3.33	-2.39	-3.89	-3.00	-3.67	-3.78	-2.89	-1.94	-2.56

<sup>a</sup>From Wendler and Shulski (2009)

The coldest decades were the 1930s (-3.89 C, 25.0 F) and the 1960s (-3.78 C, 25.2 F). Generally, with the exception of the 1920s the decades from 1910 through 1960 were relatively cold and the decades from 1970 through 1990 were relatively warm. The largest and most sudden temperature change occurred in the mid 1970s.

The Alaska Climate Research Center (ACRC 2014) time-series chart of the mean annual temperature in Fairbanks from 1949 to 2014 clearly shows the mid-1970s step-change in warming as well as substantial variation not only from year-to-year but also in the five-year running mean of the temperature shown in red (Figure 3.1).

## Fairbanks Mean Annual Temperature (°F)



Red line = five-year running mean; Gray line = linear trend 1949–2014; Blue dashed lines = linear trend lines for period 1949–1975 and 1977–2014. Modified from the Alaska Climate Research Center, 2014, accessed online at <http://climate.gi.alaska.edu/Climate>

**Figure 3.1. Fairbanks mean annual temperature degrees F. (1949–2014)**

According to ACRC (2014), if a linear trend is taken through mean annual temperatures, the average change over the last 6 decades (1950–2010) is 3.0 degrees F. However, considering just a linear trend can mask some important variability characteristics in the time series. The period 1949 to 1975 was substantially colder than the period from 1977 to 2014; however, since 1977 little additional warming has occurred.

The stepwise shift appearing in the temperature data in the mid-70s corresponds to a phase shift of the Pacific Decadal Oscillation (PDO) from a negative phase to a positive phase (NOAA, 2013). The PDO, which is related to the sea surface temperature in the northern Pacific Ocean, was developed by Mantua et al. (1997) in an examination of the relationship between Pacific climate variability and salmon production in Alaska and the Pacific Northwest of the United States. Positive values are associated with a stronger Aleutian Low, which advects more relatively warmer air into Alaska, particularly in winter, resulting in positive temperature anomalies (NOAA, 2013; Wendler and Shulski, 2009).

When analyzing seasonal trends (Table 3.13), it can be seen that most of the warming in Interior Alaska since 1976 has occurred in winter, approximately 8 degrees F., and spring, about 5 degree F., with the least amount of change in autumn (0.2 degree F). These seasonal trends are consistent with synoptic conditions associated with the PDO positive phase which tends to increase southerly flow and warm air advection into Alaska during the winter, resulting in positive temperature anomalies.

**Table 3.13. Total change in average seasonal and annual temperature for Interior Alaska climate stations, Bettles, Big Delta, Fairbanks, and McGrath in degrees F.<sup>a</sup> (1949–2005)<sup>b</sup>**

Location	Annual	Spring	Summer	Autumn	Winter
Big Delta <sup>c</sup>	3.9	4.3	1.4	- 0.1	9.1
Fairbanks	3.9	4.7	2.5	- 0.1	8.3
McGrath <sup>d</sup>	4.1	5.2	2.9	0.3	7.6
Bettles	4.1	5.3	2.1	0.6	8.4
<b>Average Change</b>	<b>4.0</b>	<b>4.9</b>	<b>2.2</b>	<b>0.2</b>	<b>8.4</b>

<sup>a</sup>To convert degree Fahrenheit to degree Celsius = (Degree F. - 32) x 5/9. To convert degree Celsius to degree Fahrenheit = (Degree C.) x 9/5 + 32.

<sup>b</sup>Modified from Shuluski and Wendler, 2007

<sup>c</sup>Published annual temperature for Big Delta = 3.9 F, calculated annual average from seasonal averages = 3.7 F.

<sup>d</sup>Published annual temperature for McGrath = 4.1 F, calculated annual average from seasonal averages = 4.0 F.

Additionally, in their analysis of the Fairbanks temperature data Wendler and Shulski (2009) found:

- The frequency of very low temperatures (below -40 degrees C, or -40 degrees F.) has decreased substantially, while the frequency of very high temperatures (above 26.7 degrees C, or 80 degrees F.) increased only slightly. “The number of days with very low temperatures (less than -40 degrees C, or -40 degrees F.) has decreased, on average, from 14 to 8 days annually. However, the decrease is not linear, and a relatively large number of such events occurred in the 1960s. Warm days with temperatures above 26.7 degrees C or 80 degrees F. increased slightly, but this increase was smaller than the decrease in cold days. At the beginning of the time series, an average of 11 warm days a year occurred, while more recently 12 days are being observed annually.”
- The length of the growing season increased substantially (by 45 percent) as a result of an earlier spring and a later first frost in autumn. The length of the growing season, defined as the time period when the temperature in summer never dips below the freezing point, increased from 85 to 123 days over the century (45 percent).
- The date of the establishment of the permanent snow cover in autumn showed little change; however, the melting of the snow cover now occurs earlier in the spring, a finding in agreement with the seasonal temperature trends. An earlier snowmelt lowers the albedo of the surface, causing additional warming: this is the well-known snow-albedo feedback mechanism.

*As discussed in Shulski and Wendler (2007), global climate change is observed to be magnified in the polar regions, including Interior Alaska, because these areas are more sensitive to change, mainly due to the snow albedo feedback, which is an example of a positive feedback mechanism. Warming in this area leads to a reduction of snow and ice cover, which is highly reflective to solar energy and the exposure of more of the darker underlying surface with lower albedo (reflectivity). This causes more absorption of solar energy and a further warming of the surface and a snow and ice retreat. A similar feedback loop exists for a cooling trend (also termed positive feedback) in which cooling leads to more snow and ice, a more reflective surface, and further cooling.*

- The variation in the mean annual temperature of Fairbanks correlates poorly with the increasing CO<sub>2</sub> values and somewhat better with the PDO index. Even combined, CO<sub>2</sub> and the PDO index can explain only slightly less than half of the observed variation

### 3.2.1.3.3. Existing Environment – Observed Climate Trends – Precipitation

Fairbanks is sheltered by the Alaska Range to the south and the Brooks Range to the north, so advection of moist air is hindered and the annual precipitation is low. Seasonally, total precipitation decreases from summer to fall and from fall to winter, and spring is the driest season. Winter and spring also produce very low snowfall, as the atmosphere is cold and can hold only a small amount of water vapor. Shulski and Wendler (2007) reported somewhat marginal changes in seasonal and annual precipitation for Interior Alaska stations at Bettles, Big Delta, Fairbanks, and McGrath, for the period of record 1949 through 2005. (Table 3.14)

For the 1916–2006 Fairbanks precipitation record, Wendler and Shulski (2009) found precipitation decreased by about 11 percent, which they noted is not statistically significant; however, it was a somewhat counter-intuitive result, as warmer air can hold more water vapor. Potentially, the 11 percent decrease in precipitation, together with increasing temperatures, makes the occurrence of droughts and wildfires more likely.

**Table 3.14. Total change in average seasonal and annual precipitation, inches (1949–2005)<sup>a</sup>**

Location	Annual	Spring	Summer	Autumn	Winter
Bettles	2.9	0.6	0.8	0.7	0.6
Big Delta	-0.9	-0.6	-0.3	0.3	-0.2
Fairbanks	0.1	0	-0.2	0.6	-0.4
McGrath	2.7	0.8	-0.8	1.5	1.3
<b>Average Change</b>	<b>1.2</b>	<b>0.2</b>	<b>-0.1</b>	<b>0.8</b>	<b>0.3</b>

<sup>a</sup>Modified from Shulski and Wendler, 2007

### 3.2.1.3.4. Climate Change Impacts

In this section climate change impacts that may affect BLM management actions are summarized for Interior Alaska and are largely related to a warming climate. Warming temperatures pose serious threats to Interior Alaska, where average annual temperatures are just below freezing; a small increase in temperature can result in large impacts.

Key Points for Interior Alaska (1949–2005):

- Mean annual temperatures increased approximately 4 degree F (Table 3.13). Most of the warming has occurred since the mid-1970s, with the greatest seasonal change in winter, approximately 8 degrees F., and spring about 5 degree F., and the least amount of change in autumn, 0.2 degree F.
- There was no substantial change in annual or seasonal precipitation (Table 3.14) and projected future climate scenarios predict variable but not extreme changes in precipitation for Interior Alaska (NOAA, 2013).

### Thawing Permafrost

Much of Interior Alaska is underlain by discontinuous permafrost—frozen ground with highly variable ice content that restricts water drainage and strongly influences landscape water balance as well as the design and maintenance of infrastructure. Permafrost thaw results in the settling and/or slumping of soil and is one of the serious impacts of a warming climate in Alaska.

- Uneven sinking of the ground in response to permafrost thaw causes major issues for various types of infrastructure. Roads, runways, and buildings may shift, break, or collapse as the ground beneath them becomes soft and sinks. (Karl et al. 2009).
- Landscapes in Interior Alaska are getting drier. On average, lakes have decreased in area in the last 50 years (Roach et. al., 2011) due to a combination of permafrost thaw, greater evaporation in a warmer climate, and increased soil organic accumulation during a longer season for plant growth. Future permafrost thaw will likely increase lake area where permafrost is continuous and decrease lake area in places where the permafrost zone is more fragmented (Avis et. al., 2011).
- A continuation of the current drying of Alaskan lakes and wetlands may affect waterfowl management. Interior Alaska provides breeding habitat for millions of migratory birds that winter in more southerly regions of North America and on other continents.
- Numerous observations suggest increased surface erosion associated with thawing permafrost and melting ground ice resulting in *thermokarst* development in low gradient areas and increased thermal erosion on hill slopes—detachments of seasonally thawed layers—especially after wildfire (Gooseff et. al., 2009).
- Thawing permafrost increases permeability of previously frozen soils and changes the distribution of surface waters across the landscape through increasing or decreasing wetland surface area depending upon site-specific conditions (Hinzman et al. 2005).

## Length of Growing Season

The length of the growing season in Interior Alaska has increased on average from 83 to 123 days (45 percent) over the last century (Wendler and Shulski, 2009). Changes in dates of snowmelt and freeze-up associated with the longer growing season benefit agriculture and forestry and decrease annual use of heating fuels with warmer temperatures. Negative impacts may include reduced water storage, altered timing of the spring break-up, and increased risk of more extensive wildfire and insect outbreaks, as well as disrupted seasonal migration of birds and other animals (Chapin, et. al., 2014).

## Floods

Rapid springtime temperature increases can cause unseasonable and excessive snow melt at higher elevations, resulting in flooding. Regions of Interior Alaska are susceptible to floods caused by ice jams on rivers. In addition to upstream flooding caused by the damming effect of an ice jam, the dislodging of an ice jam can release large quantities of backed-up water and ice downstream into local communities, having catastrophic results (Shulski and Wendler 2007).

## Fires

During the decade of the 2000s, an average of 1,890,000 acres per year were burned in the interior sections of Alaska (17 percent of the landscape), which is 50 percent higher than in any previous decade since the 1940s (Kasischke et al. 2010). The increase in fire severity has occurred during a period of warmer spring seasons associated with earlier snowmelt, drying of wetlands, and lengthening growing seasons. Increasing temperatures (more specifically, a decrease in occurrence of extreme cold temperatures) have resulted in increased over-winter survival of bark

beetles, and a consequent increase in the number of acres of forest destroyed by these insects. Dead trees combined with warmer, drier conditions leave the forests more vulnerable to wildfires (Karl et al. 2008). It is also thought that deeper active layers in permafrost areas allow fires to persist in the organic horizons of black spruce forests (Kasischke et al. 2010). The increase in fire occurrence has coincided with, and likely has been at least partially driven by, increases in lightning frequency since the 1990s (Faruch et al. 2011).

Thick smoke produced in years of extensive wildfire represents a human health risk.

More extensive and severe wildfires could shift the forests of Interior Alaska during this century from dominance by spruce to broadleaf trees (Barrett, et. al., 2011).

### 3.2.1.3.5. Climate Projections

Eastern Interior Alaska is projected to become warmer and drier over the next century. Warmer temperatures and a longer growing season are expected to increase evapotranspiration enough to outweigh a regional increase in precipitation. Seasonal changes in climate will likely have profound impacts on the condition and health of wildlife habitat, lead to increased fire risk, and contribute to the likelihood of wetlands, streams, and lakes drying. (Rupp and Springsteen, 2009b).

NOAA (2013) completed projected future climate trends and scenarios for Alaska for the periods of 2021–2050, 2041–2070, and 2070–2099, with changes calculated with respect to the historical climate reference period of 1971–1999. In discussions NOAA (2013) refers to these future periods by their mid-points of 2035, 2055, and 2085, respectively and report for Interior Alaska similar results to projections completed by Rupp and Springsteen (2009).

“For all seasons, warming is simulated to increase with time. Winter is simulated to see the greatest temperature increases, ranging from around 4 degrees F. in 2035 to more than 12 degrees F. in 2085. The spread of individual model values is large for all seasons, and also increases with time.” There is large uncertainty associated with projected changes in precipitation — simulated change in winter precipitation varied from +10% to +48%. However, it is important to note that an increase in overall precipitation amount does not necessarily imply an increase in water availability. As temperatures rise, growing season for various types of vegetation will increase, thereby increasing the overall water uptake by plants. Similarly, warming temperatures will increase evaporation as well as the atmosphere’s holding capacity for water vapor. Thus, while model predictions may indicate a general increase in precipitation amount, this may not result in increased water availability (NOAA, 2013).

The Intergovernmental Panel on Climate Change (2013), reported global average temperatures increased by around 0.12 C between 1951 and 2012, and more recently at a somewhat lower rate of 0.05 C per decade in the period between 1998 and 2012. Observations and predictive models indicate that anthropogenic warming over the Arctic in winter will be greater than the global mean warming over the same period and that precipitation variability on regional scales will likely intensify (IPCC, 2013).

It is important to note that projected changes are likely to occur over several decades to a century and many of the projected changes associated with climate change described above may not be measurably discernible within the reasonably foreseeable future.

Existing and anticipated effects of climate change on resources and resource uses in the planning area are incorporated into the relevant sections. Vulnerabilities to climate change depend considerably on specific geographic and social contexts. BLM recognizes the importance of climate change and the potential effects it may have on the natural environment. The following resources have been or are anticipated to be affected by climate change: vegetation, water, soil, fish, and wildlife.

### **3.2.2. Cave and Karst Resources**

#### **3.2.2.1. Laws, Regulations, and Policies**

The Federal Cave Resources Protection Act (FCRPA) of 1988 was the first federal legislation to recognize caves and their contents as whole, integrated ecosystems. FCRPA declares significant caves on federal lands as an invaluable and irreplaceable part of the Nation's heritage. In many areas, improper use, increased recreational demand, urban spread, and a lack of specific statutory protection threaten caves. The purpose of FCRPA is to secure, protect, and preserve significant caves on federal lands for the perpetual use, enjoyment, and benefit of all people; and to foster increased cooperation and exchange of information between governmental authorities and those utilizing caves located on federal lands for scientific, educational, or recreation purposes.

DOI implementation regulations for FCRPA require federal lands be managed in a manner that, to the extent practical, protects and maintains significant caves and cave resources (43 CFR 37.2). BLM's policy and guidance for managing cave resources is to protect sensitive, fragile, biological ecological, hydrological, geological, scientific, recreational, cultural, and other cave values from damage and to ensure they are maintained for use by the public, both now and in the future (BLM 2008c).

In the planning area, the majority of caves are limestone dissolution joint-type caves (Juday 1989), formed when rainwater becomes acidic and acts as a solvent on limestone, dissolving calcium carbonate and eroding the rock into caves, chambers, and caverns. Cave resources are fragile due to their association with other resources such as groundwater hydrologic systems and biological communities (Moore and Sullivan 1997). They may also be considered non-renewable due to paleontological and archaeological deposits, speleothems (formations inside caves), and biological resources.

#### **3.2.2.2. Significant Caves**

An inventory of caves was conducted from 2001 through 2004 that identified hundreds of small caves in the White Mountains NRA. There are only six known significant caves in the planning area — three in the White Mountains, two in the Upper Black River, and one in the Steese. The three caves in the White Mountains are all within the Limestone Jags RNA. Because of their remoteness and lack of access, these caves are pristine and lack evidence of contemporary human use.

##### Significant Caves in the White Mountains NRA

1. **Bison Bone Cave (AK-029-001):** This is a small dissolution joint cave found on a very steep slope at the upper portion of Limestone Gulch. Bones are scattered throughout talus rocks on the floor of the cave. The carpal bones of a bison were found in the cave. The bone was aged by Carbon-14 dating method and was dated at 13,300 +/-160 years old.

2. Cave AK-029-002: This is a very small crack cave found just above Fossil Creek at the upper end of Limestone Gulch. The cave contains paleontological remains that were identified as long bone splinters. Aging and species identification processes were not conducted.
3. Cave AK-029-003: The BLM conducted a cultural survey of this cave. A large amount of rockfall covers the cave floor and no paleontological or cultural evidence was found. The cave was identified by David Klein in the 1950s while conducting biological surveys, and revisited by him in 1964. David Klein and BLM staff revisited the cave during the 2008 field season. The cave was almost unrecognizable to David Klein because of the large amount of rockfall that filled the cave over the past 40 years.

#### Significant Caves in the Upper Black River Subunit

1. Fort Creek/Smoky's Cave (AK-028-00): This is a shallow cave that was rumored to have been a trapper's cache. The BLM found no evidence of human use at the cave.
2. Mesa Cave (AK-028-002): This cave is relatively small and contains formations of the popcorn type. The popcorn formations originally were formed in the ceiling of the cave, although through the expansion and contraction of water, the ceiling rocks from the cave had fractured and fallen to the floor along with the popcorn formations. The formations were poorly developed and not very extensive.

#### Significant Caves in the Steese National Conservation Area

1. Sheep Cave (AK-028-003): This cave is located near a rocky bluff used as escape habitat by Dall sheep. There is no evidence of human activity.

### **3.2.3. Cultural and Paleontological Resources**

#### **3.2.3.1. Regional Prehistory**

Archaeological research in the Yukon and Tanana River basins indicates that humans have inhabited the region for more than 14,000 years, making Interior Alaska the focus of some of the earliest dated sites in the Americas. Multi-component and/or sites with well-developed stratification are relatively uncommon across Alaska, and many sites are found on the surface as environmental factors have limited the accumulation of sediment over extended periods of time.

Over the years, various Interior Alaskan cultural chronologies have been proposed and critiqued, and as yet no general consensus has been widely recognized (e.g., Bacon 1987; Cook 1969; Dixon 1985, 2001; Holmes 2001; Maschner 1997; Mason et al. 2001; and West 1967, 1975, 1996; see discussion in Potter 2005:70–80). For this section, the regional prehistory for the Upper Yukon, and Upper and Middle Tanana River basins is divided into three broad archaeological traditions: the American Paleoarctic Tradition, Northern Archaic Tradition, and Athabascan Tradition. These traditions, although not universally accepted by all Alaskan prehistorians, are general designations for what are commonly considered to be Alaskan prehistoric cultures represented by differences in artifactual typology and technology, as well as economy.

#### **American Paleoarctic Tradition (14,000 to 6,000 years ago)**

Several sites in the region have American Paleoarctic Tradition components that date 14,000 to 6,000 years ago (Holmes 1996, 2001; Bowers 1998). Early interior populations were terrestrial foragers, exploiting both upland and lowland areas, focusing on bison and wapiti (elk), but exploiting a broad range of animals including other large mammals, small mammals, fish,

and birds, especially waterfowl (Potter 2008a, 2008b). This economic pattern was continued even after the expansion of the boreal forest throughout Interior Alaska following the terminal Pleistocene, after roughly 10,500 years ago (Ager and Brubaker 1985; Potter 2008a).

In the middle Tanana River basin, “Chindadn” triangular points have been found at Healy Lake (Cook 1969; Holmes and Cook 1999), Broken Mammoth (Holmes 1996, 2001; Yesner 1994), Swan Point (Holmes 2001; Holmes et al. 1996), and Chugwater (Lively 1988; Maitland 1986). These bifacially worked points are dated to 12,000 to 10,000 years ago at the Broken Mammoth and Swan Point sites, and somewhat earlier in the nearby Nenana River basin (approximately 13,300 years ago).

Organic tools from this early period are rare, but are found at the lowest artifact levels at the Broken Mammoth and Swan Point sites, which are located west of Delta Junction near Shaw Creek. At Broken Mammoth, these tools included worked mammoth ivory pieces and an eyed bone needle, the latter of which was recovered near a hearth dated at 12,000 years ago (Holmes 1996:313). The Broken Mammoth site also has well-preserved fauna, including ungulates (wapiti, bison, caribou, sheep, and moose), fox, wolf, hare, ground squirrel, other small rodents, waterfowl (duck, geese, and swan), and salmonid fish (Holmes 1996; Yesner 1996). The Gerstle River site, located east of Delta Junction, with five components dating from approximately 12,000 to 8,800 years ago, functioned as a temporary field camp (Potter 2005). At this site, large mammals including wapiti (elk) and bison, killed nearby, were processed using expedient tools. Curated stone tools were also maintained at this site.

### **Northern Archaic Tradition (6,000 to 1,000 years ago)**

After approximately 6,000 years ago, new technologies, including side-notched projectile point/biface forms, begin to appear in Interior Alaska archaeological assemblages. Several archaeologists have designated these side-notched biface assemblages as part of the Northern Archaic Tradition (e.g., Anderson 1968; Workman 1978).

In the Tanana River basin, localities where notched bifaces are found include the mid-Holocene level at the Swan Point site (Holmes et al. 1996), the Tok Terrace site (Sheppard et al. 1991), the Healy Lake Village site (Cook 1969), Dixthada (Shinkwin 1979), the Chugwater site (Lively 1988; Maitland 1986), and several other localities. Several sites containing notched bifaces were found near Livengood (Derry 1976). Recent surveys have revealed other important Holocene sites (TNX-00047, TNX-00079, and TNX-00089) near Tok that contain both microblades and notched points (Potter et al. 2007, Sheppard 1999). Overall, the middle Holocene saw a shift in foraging economies throughout the region, from broad-based exploitation of both lowland and upland fauna to more pronounced hunting of caribou in upland areas. Lowland broad-spectrum resources such as bison, small game, birds, and fish were still exploited, albeit less frequently (Potter 2008a, 2008b).

### **Athabascan Tradition (1,000 years ago to A.D. 1880)**

The Athabascan Tradition is a prehistoric culture attributed to ancestors of northern Athabascan Indians of Alaska. These sites in the Yukon River basin date from at least 1,000 years ago to about A.D. 1880. Aspects of this tradition continue into the historic period in the late 19th century up to the present time. Early prehistoric Athabascan tradition sites are characterized by housepit and subsurface cache features, and are associated with a variety of flaked and ground stone, bone, and antler artifacts. Subsistence economies were transformed around 1,000 years ago to pronounced exploitation of seasonally abundant resources (primarily caribou and salmon). Cache pits have been documented at several Athabascan Tradition sites in the planning area including the U.S.

Creek site (CIR-00029; Mills 2004, 2006; Mills and Greene 2003), and several sites along the Tetlin River (TNX-00042 through TNX-00045; Higgs and Williams 1997).

Recent testing in an early historic house depression near Tok indicates that another significant change with the Athabascan Tradition is an increased use of expedient tools, a factor that may contribute to the potential archaeological visibility problem of Athabascan assemblages (Sheppard 2001). Historic Athabascan sites generally have a mixture of log cabin and house pit dwellings affiliated with a larger percentage of Euroamerican artifacts, as well as possible changes in site location in order to obtain trade goods.

Much of our understanding of Athabascan Tradition sites in Alaska comes from excavations at the following sites, both inside and outside of the planning area: sites around Lake Minchumina (Holmes 1986), sites near Eagle (Andrews 1987), the Tok Terrace site, Dixthada, and Swan Point. The upper, or more recent, components at Swan Point contain pecked and ground stone artifacts, as well as flaked stone tools including straight-based lanceolate bifaces and microblades (Holmes et al. 1996). Faunal materials found at Athabascan tradition sites include a broad spectrum of interior wildlife. Rainey (1939) identified moose, caribou, beaver, hare, small rodents, fish, and bird faunal materials from Dixthada. Plaskett (1977) adds black bear, Dall sheep, and marmot from the Nenana Gorge encampment to the list (see also Reuther et al. 2008).

### **3.2.3.2. Regional History**

Prehistory relies primarily on the archaeological and paleoenvironmental records. In contrast, the historic record combines accounts obtained through written and oral histories, in addition to archaeological studies. This section recognizes that recent history in the Yukon-Tanana area, which encompasses the planning area, is largely attributed to the coming together of two distinct cultural groups: Athabascans and Euroamericans. It is during the recent historic period that we see major changes in Interior Alaska, primarily due to a relatively rapid influx of Euroamerican peoples with a capitalistic, resource extraction-based economy settling into regions historically occupied or utilized by Athabascans who practiced a mobile subsistence-based economy. From historical times to present, both cultures have borrowed from each other to persevere in the interior, but two distinct cultures and ideologies still exist.

#### **Historic Athabascans**

At the time of direct Euroamerican contact, the region now comprising the planning area was utilized primarily by bands of Gwich'in, Han, Tanana, Upper Tanana, and Tanacross Athabascans (Andrews 1977; Crow and Obley 1981; McKennan 1981; Osgood 1981; Simeone 1982; Slobodin 1981). The basic historic Athabascan social group included a "band" of families whose subsistence activities centered on procurement of fish resources (both anadromous and freshwater) and terrestrial animals. Athabascan settlement locations are tied to a yearly subsistence cycle. Traditional Athabascan land uses in the planning area include fall hunting of moose, caribou, sheep, and other, smaller terrestrial animals, as well as trapping (Andrews 1975; McKennan 1981). Hunting was associated with seasonal movements along trails and frozen rivers, particularly as bands moved between rivers and uplands.

Athabascan subsistence cycles demonstrate the mobility and use of various landscapes and fauna during historic times. In general, summer was and remains a season for catching salmon and other freshwater fish species along clear creeks as opposed to glacially fed streams. Before the introduction of fishwheels in early historic times, fish were caught in willow sapling traps

constructed at the end of fish weirs (Mishler 1986). Fishing was accomplished near the village sites, and fish were stored and fermented in large subsurface caches. In the early fall, the bands dispersed into small family units who then went on hunting ventures (Mishler 1986). Seasonal procurement of caribou occurred at various times, focusing on interception during migrations in the fall and late-winter, and early-spring. Fences and surrounds were used during communal hunts to capture large numbers of caribou. Sheep hunts occurred in some upland areas. Hare, ptarmigan, spruce grouse, and over-wintering waterfowl were also hunted.

Simeone (1995) identifies several stages of change that have historically occurred for the Upper Tanana and Tanacross Athabascans, and that are generally applicable to the other regions. The vehicle of change has been contact with Euroamericans, first brought about by an expanding need for access to trade goods through other Alaska Native bands. More change occurred through direct contact and regular trade at trading posts established by Euroamericans, and was continued thereafter by miners and missionaries coming into the country. Athabascans became more involved in a cash economy (i.e., wage-labor, or goods for services), through direct contact that altered their former subsistence-based lifestyle (Simeone 1995). In 1915 a meeting was held in Fairbanks, Alaska, with chiefs from the lower portions of the Tanana River and U.S. government officials. The purpose of the meeting was to discuss the possibility of establishing reservations for Alaska Natives. After hearing about the conditions of reservation life in other parts of the country, the chiefs largely decided against establishing reservations for their people. At this time there were very few Euroamericans living outside the major settlements and gold fields in the interior and the chiefs still felt that “there would be plenty of room for everyone” (Olson 1981:706).

Following World War II, increased Athabascan contact with Euroamericans has sometimes resulted in conflicting ideologies and economies. In general, rural Athabascans today live in villages consisting predominately of Alaska Native inhabitants and where a subsistence lifestyle is maintained, but with considerable influence by Euroamerican technology and culture (Simeone 1995).

### **Euroamericans**

The Upper Yukon and Tanana watersheds have a documented Euroamerican history of about 130 years, and like Interior Alaskan Athabascan history, it has experienced significant changes since the about the late 1870s. Euroamerican history in the region initially started with the fur trade and gold prospectors, followed by government-sponsored mineral exploration, and construction of trading posts, roadhouses, and missions. The more successful posts eventually developed into permanent settlements (e.g., Delta, Eagle, Fairbanks, Fort Yukon) with a populace sustained by several eras of economic stimuli including resources extraction, trade and commerce, and military buildup related to World War II and the Cold War.

In 1885, Lieutenant Henry Allen (U.S. Army) explored the Tanana River during a remarkable expedition that began in the Copper River valley and ended on the Koyukuk River (Allen 1887). Allen's party visited seasonal Alaska Native camps at or near the communities of Last Tetlin, Tetlin and Mansfield (Allen 1887). Small gold finds in the 1880s along the upper Yukon River and its tributaries initiated further prospecting efforts in the area and the adjacent Upper Tanana drainage. One of these upper Yukon tributaries, the Fortymile River, witnessed the first large mining stampede in Alaska following discovery of gold at Franklin Bar in 1886, which ushered in the region's gold rushes by attracting hundreds of additional prospectors (Gates 1994; Grauman 1977). Larger gold finds that resulted in settlements within the planning area followed, including those at Circle city in 1893, the Seventymile in 1888, and at Mission Creek near Eagle in 1895.

The 1896–1898 Klondike gold strike in Canada brought thousands of Euroamericans into and through the planning area.

The town of Eagle on the Yukon River emerged as Alaska's commercial hub during this era and was the historic judicial and military seat; the army constructed Ft. Egbert at Eagle in 1899, and the first Interior federal-level court was established there in 1900. Prospectors late to arrive at the Eagle and Fortymile River region explored south to the Upper Nabesna River during the late 1880s. Their numbers increased dramatically with the discovery of gold on the Upper Nabesna in 1899 and copper in 1902. In 1898, Mendenhall's (1900) geological expedition reached the Tanana Valley via the Copper and Delta rivers. His party ventured as far as Jarvis Creek (near present-day Delta Junction), but failed to reach the Tanana before having to return to the Copper River. Another military reconnaissance lead by Lieutenant Castner in 1898, passed through the Delta area documenting Athabascan encampments, and attempted to reach Circle by traveling up the Goodpaster River (Robe 1943:65). The U.S. Army sent Captain W. Abercrombie to find an overland route to the American gold fields in Interior Alaska (Abercrombie 1900).

In 1902, a prospector named Felix Pedro struck gold on a small stream northeast of Fairbanks. With this strike, the rush began as prospectors and other settlers began to enter the Tanana River basin in force. The process of gold mining here, and elsewhere in Interior Alaska, can be divided into three broad overlapping phases, or "waves," of activity (see historic contacts in Burr Neely 2001; also Bowers and Gannon 1998). These waves are characterized as follows: in Wave I, individual miners entered and explored new mining regions, primarily with pans and sluice boxes; in Wave II, miners developed limited partnerships in order to pool resources, purchase equipment and support larger mechanized operations which transformed the landscape; and, in Wave III large-scale operations consolidated claims, using advanced and systematic methods of ore extraction, operating on a much larger scale than in the prior two phases, due to newly developed railroad access to the area (Burr Neely 2001). During this period, dredging to extract ore became commonplace. Although the initiation and timing of each Wave differed throughout the broad extent of the planning area, the same general pattern played out in different locales. Of course, some areas did not proceed past the first Wave (e.g., Upper Black River Subunit), as minerals were not found in sufficient quantities to prove economically viable.

The Washington Alaska Military Communication and Transportation System (WAMCATS) telegraph system was built during the first years of the 20th Century and ultimately spanned much of Interior Alaska. Large sections of the overland WAMCATS line snake through the planning area, and portions of it remain on the landscape today (Burr Neely 2007; Quirk 1974). The landline was quickly supplanted by wireless telegraph stations, including those at Fairbanks and Eagle.

Agriculture provided an additional viable occupation for people living in the Fairbanks and Delta Junction regions (Monahan 1959). In 1898, the Homestead Act of 1862 was extended to include Alaska. Soon, the middle Tanana River basin became the center of farming in Alaska, as farmers sold their produce to miners and other businesses in the region. After the arrival of the railroad to Fairbanks in 1923, farmers were forced to compete with outside producers. By the 1930s, the Matanuska Valley in Southcentral Alaska became the new center of commercial agriculture in Alaska (Price 2002) instead of the Interior. After World War II, homesteading and agriculture began to develop in earnest in the Delta Junction area, and State support in the 1970s and 1980s led to further agricultural growth in the Delta region.

During World War II, airfields were constructed in Northway and Tanacross and the Alaska-Canada Highway (ALCAN) was built through the Upper Tanana region to provide a

ground link between airfields along the Northwest Staging Route. In addition to the road, a communications line was concurrently constructed through the Tanana basin that provided critical open wire connections from Alaska to the contiguous United States. Tok was established in 1942 as an Alaska Road Commission camp. Other World War II and Cold War-related developments included construction camps and other associated features along the Alaska Highway, the CANOL (“Canadian Oil”) pipeline, the Haines-Fairbanks (ALCANGO) pipeline (Hollinger 2003), and military communications stations. Though unrelated to military history, the Taylor and Steese highways were also constructed during the early 1950s and further developed the interior’s transportation network and access to mining areas.

In the 1970s, development of the Trans-Alaska Pipeline System (TAPS), to ship oil from the oil fields near Prudhoe Bay to the ice-free port of Valdez, ushered in a statewide and local economic boom reminiscent of the Gold Rush. TAPS traverses the western portion of the planning area, generally following highway corridors. Several pump stations were established along the TAPS including those at Livengood and Delta.

In sum, extensive Euroamerican activity in the planning area over the past 130 years has resulted in a wide range of site types related to historic transportation (rivers, roads and trails), settlement, mining, communications, agriculture, military, and oil and gas related development.

### 3.2.3.3. Known Sites

There are currently 2,543 known historic and prehistoric cultural resource sites in the planning area (Table 3.15, “Known Cultural Resources Regardless of Land Status in the Eastern Interior Planning Area”), with 365 are found on currently BLM-managed lands. Most of the sites on BLM lands occur within the confines of the three Wild and Scenic Rivers, the Steese National Conservation Area, the White Mountains NRA, or on federal mining claims. As a result, these sites will remain under BLM’s management after completion of the land conveyance process.

**Table 3.15. Known Cultural Resources Regardless of Land Status in the Eastern Interior Planning Area**

Subunit	Historic Sites <sup>a</sup>	Prehis-toric Sites <sup>a</sup>	Historic/ Prehist sites <sup>a</sup>	Total Sites <sup>a</sup>	Acres (million)	Historic Site Density <sup>b</sup>	Prehis-toric Site Density <sup>b</sup>	Total Site Density <sup>b</sup>
Fortymile	1,574	429	20	2,023	15.85	100.6	28.3	127.6
Steese	122	34	0	156	4.20	29.0	8.1	37.1
White Mountains	71	57	2	130	3.15	23.2	18.8	41.3
Black River	172	56	6	234	7.76	22.9	8.0	30.1
<b>Total</b>	<b>1,939</b>	<b>576</b>	<b>28</b>	<b>2,543</b>	<b>30.96</b>	<b>63.6</b>	<b>19.5</b>	<b>82.1</b>

<sup>a</sup>Number of sites as of May 2009, regardless of land status

<sup>b</sup>Number of known sites per million acres

Table 3.15, “Known Cultural Resources Regardless of Land Status in the Eastern Interior Planning Area” lists the numbers of sites relative to the four subunits, without regard to present land ownership (i.e., State, Native corporation, federal, private). The types of sites are divided into those that are Historic, Prehistoric, and those that have both Historic and Prehistoric components. The table also lists the density of sites (number of sites per million acres) in each subunit.

In all subunits, the number of historic sites outnumber the number of known prehistoric sites. The historic sites are those dating younger than about A.D. 1880, or, in the case of Athabascan sites, those containing some evidence of European contact or trade. Site density is fairly consistent in all subunits except the Fortymile Subunit. This can be a bit deceiving, as about 500 of the historic “sites” in this subunit are standing buildings on Eielson Air Force Base. Even dismissing this large total, the total site density for the subunit still reaches 95 sites per million acres, which is still two to three times the total found in other subunits. Reasons for this discrepancy in site numbers across the planning area are explained below.

The data tabulated in Table 3.15, “Known Cultural Resources Regardless of Land Status in the Eastern Interior Planning Area” include site types for all of the potential prehistoric and historic sites that were expected in the planning area, based upon the regional prehistoric and historic histories presented above. That is, the planning area contains representative site types of all three prehistoric traditions spanning back almost 14,000 years, as well as all manner of historic Athabascan and Euroamerican sites outlined above.

Table 3.16, “Known Cultural Resources on BLM Lands in the Eastern Interior Planning Area” lists the known sites and their densities for the four subunits, but this time only for those sites that are currently found on BLM-managed lands. The majority of these site will likely remain under BLM's management, as most of them are on lands that are not open to conveyance.

**Table 3.16. Known Cultural Resources on BLM Lands in the Eastern Interior Planning Area**

Subunit	Historic Sites <sup>a</sup>	Prehis- toric Sites <sup>a</sup>	His- toric/Pre- historic sites <sup>a</sup>	Total Sites <sup>a</sup>	Acres (million)	Historic Site Density <sup>b</sup>	Prehis- toric Site Density <sup>b</sup>	Total Site Density <sup>b</sup>
Fortymile	225	21	2	248	2.07	109.7	11.1	119.8
Steese	49	18	0	67	1.28	38.3	14.1	52.3
White Mountains	26	3	1	30	1.02	26.6	3.9	29.5
Black River	3	17	0	20	2.36	1.3	7.2	8.5
<b>Totals</b>	<b>303</b>	<b>59</b>	<b>3</b>	<b>365</b>	<b>6.73</b>	<b>45.5</b>	<b>9.2</b>	<b>54.2</b>

<sup>a</sup>Number of sites as of May 2009, on BLM-managed land

<sup>b</sup>Number of known sites per million acres

The range of the types of sites found on BLM lands in the planning area is not as comprehensive as that found on non-BLM lands, relative to what was expected based upon historical overviews. For instance, at present there are no known sites that can definitively be assigned to the American Paleoarctic Tradition, and there are only a few that can certainly or probably be attributed to the Northern Archaic Tradition. Instead, the vast majority of the known *prehistoric* sites on BLM lands are surface or shallowly buried sites (less than eight centimeters in depth), and likely date to the late prehistoric Athabascan Tradition. This is not to say that there are no American Paleoarctic and Northern Archaic sites present. On the contrary, late Pleistocene and early-mid Holocene sites certainly exist on BLM lands in the planning area. Owing to a lack of systematic and/or sustained survey for prehistoric sites, those sites have yet to be found.

The nature of *historic* sites on BLM lands in the planning area, both Athabascan and Euroamerican, is a bit more representative of what was expected based upon the historic overview. The only types of sites not found on BLM lands that were identified in the overview are commercial agricultural sites and energy, transportation, and communications sites related

to the World War II and post-WWII booms (e.g., ALCAN, CANOL, ALCANGO, TAPS) that passed through the southern and western portions of the planning area from the 1940s through 1970s. All other manner of sites have been identified on BLM lands, including prospecting and mining sites ranging from ephemeral prospect camps to gold dredges and dredge camps, Ft. Egbert (an early 20th century Army post), small abandoned Euroamerican and Alaska Native settlements, WAMCATS sites and features, cemeteries and isolated graves, roadhouses, a federal Custom Station, trapping-related sites, trail shelter cabins, historic airstrips, and Alaska Native hunting sites and features.

It is apparent from Table 3.16, “Known Cultural Resources on BLM Lands in the Eastern Interior Planning Area” that numbers of known sites on BLM-managed lands are unevenly distributed across space, relative to the four subunits, a situation that is mirrored on a larger scale on all of the lands in the planning area (Table 3.15, “Known Cultural Resources Regardless of Land Status in the Eastern Interior Planning Area”). For instance, the Fortymile Subunit, with 248 sites, has four to 12 times as many known sites as the other subunits. Even after taking subunit acreage into account, known site density on the landscape is still much greater in the Fortymile than in the other subunits: It is twice that found in the Steese, three to four times that of the White Mountains, and 12 times that found in the Upper Black River Subunit.

Another key difference apparent in the Table 3.16, “Known Cultural Resources on BLM Lands in the Eastern Interior Planning Area” is that historic era sites greatly outnumber prehistoric sites, accounting for 76 percent of all sites, and 83 percent of the sites found on BLM lands. This is true for three of the subunits, where sites with historic components outnumber sites with prehistoric components 10:1 in the Fortymile, 3:1 in the Steese, and 7:1 in the White Mountains. The Upper Black River Subunit bucks this trend, with a 6:1 ratio in favor of prehistoric sites over historic ones.

Three reasons likely account for these differences. First, the vast majority of sites are historic as well as surficial resources; that is, collapsing and ruined buildings, structures, equipment and other artifacts and features that are visible on or above the present ground surface. Of the 303 known historic sites on BLM lands, more than 80 percent have standing or collapsing buildings, structures, or large pieces of metal equipment present, making them highly visible resources. This is particularly true in the Fortymile, Steese, and White Mountains subunits, where historic resources greatly outnumber prehistoric resources. The vast majority of these historic sites are less than 100 years old, which means most of these sites are not completely eroded or degraded down to the ground and are clearly visible today. Thus, they will be found more readily than buried and more ephemeral sites, and are more likely to be recorded.

Second, two of the main occupations that drew people into Interior Alaska during the early-mid 20th century were placer gold mining and trapping, and both focused much of their activities immediately alongside creeks and rivers. In particular, mining activities were quite extensive throughout the Fortymile drainage, with relatively intense occupation throughout the area dating at least back to the original A.D. 1886 gold discovery and stampede to the area, and continuing to the present day. This extensive and yet quite narrow geographic focus of activities, typically within a few dozens of feet of a stream edge, makes finding sites related to these two economic activities relatively easy.

Third, logistical constraints of field work in Interior Alaska, coupled with relatively limited BLM funding, has prompted the work in areas that are relatively cheaper and easier to get to, such as areas immediately adjacent to roads, trails, and floatable rivers and creeks. Helicopter-based

cultural surveys for the purpose of finding new sites are expensive and, as a result, are not frequently undertaken.

Logistical constraints have affected cultural work in the Upper Black River Subunit. No economically feasible placer gold, other ore bodies, or oil/gas deposits have ever been located in this subunit. The area continues to be used today much as it was used throughout the 20th century: For subsistence hunting and fishing by resident and adjacent Alaska Native groups, as well as for fur trapping. No roads have ever been built into this area. The relatively few airstrips are associated with villages, located further downstream and off of BLM lands, or are from past oil and gas exploration.

With limited access to the Upper Black River Subunit and no modern development driving cultural surveys, few cultural surveys have taken place. These few surveys include a two week float trip in 1991 (Kunz 1991), and two, one-day visits with a helicopter in 2006 and 2007 (Corbet 2006; Jeff Rasic, personal communication 2007). These limited efforts resulted in the discovery of three trapping cabin ruins and 17 surface prehistoric sites, the only known cultural sites within this vast area (Table 3.16, “Known Cultural Resources on BLM Lands in the Eastern Interior Planning Area”). One additional reconnaissance survey was conducted in 2009 and 19 archaeological sites were identified (Rasic 2009).

### **3.2.3.4. Paleontological Resources**

Little work has been done to inventory paleontological materials on BLM-managed lands in the planning area. In 1986, the BLM contracted for a collection of data on paleontological resources on BLM-managed lands (Lindsey 1986). Since that time, Drs. Ning Zhang and Robert Blodgett have compiled the Alaska Paleontology Database ([www.alaskafossil.org](http://www.alaskafossil.org)), an ongoing database of paleontological localities which is searchable by quadrangle for the entire State of Alaska, regardless of land ownership status. As of late 2008, more than 14,000 entries had been made into the database. Owing to funding sources, Zhang and Blodgett’s database has focused, although not exclusively, on pre-Pleistocene era invertebrates. Lindsey (1986), however, covers the Pleistocene vertebrate faunal, so combining these two sources provides an adequate assessment of the nature of this resource in the planning area. There is some overlap between the two sources, making an exact count of known localities difficult. The following discussion is based primarily on information from these two sources.

Lindsey (1986) reports about 113 occurrences of paleontological resources on BLM-managed lands in the planning area. All of these reported finds are located between the Yukon and Tanana rivers; no localities are known on BLM lands in the Upper Black River Subunit, north and east of the Yukon River. The reported finds are relatively evenly distributed from the U.S.-Canadian border and up to the Yukon River, between the mouths of the Tanana and Porcupine rivers.

As of late 2008, Zhang and Blodgett report about 615 occurrences of paleontological resources in the planning area, regardless of land status. The nature of the paleontological resources in the planning area spans the breadth of the Paleozoic Era (approximately 540-250 million years ago), the Mesozoic Era (approximately 250-65 million years ago), and the Cenozoic (approximately 65 million years ago to present). All manner of vertebrate and invertebrate faunal, as well as floral specimens, are reported, with the large-mammal vertebrate remains concentrating in the Pleistocene epoch (approximately 1.8 million years ago to approximately 10 thousand years ago). As yet, however, no dinosaur fossils are known from the planning area. In 2010, Harley Armstrong, regional paleontologist for the BLM, assessed all geological formations in Alaska

for their potential to yield significant paleontological resources (Armstrong 2010). Of the 307 different geological units listed for Alaska on this Alaska Potential Fossil Yield Classification (PFYC) List, 57 occur within the boundaries of the Eastern Interior FO, and of these, none is ranked higher than a “3”, where PFYC 1 is lowest in yielding significant paleontological resources and Class 5 is the highest.”

The distribution of fossil occurrences in the planning area are undoubtedly a function of the limited amount of inventory that has been conducted, and the nature of those activities that are producing the field samples and finds (i.e., placer mining; USGS sampling), and should not be taken as representative of the area.

## 3.2.4. Fish and Wildlife

### 3.2.4.1. Fish

#### 3.2.4.1.1. Fish Species Present

The planning area is known to support 17 native fish species and three stocked species in a variety of habitats, such as rivers, streams, lakes, and wetlands. None of these fish species are federally designated as either threatened or endangered under the Endangered Species Act (ESA). With few exceptions, the current condition of fish species in the planning area is good, and most fish populations are self-sustaining. Populations of Arctic grayling are able to support active sport fisheries, and populations of salmon, whitefish, northern pike, and sheefish are generally healthy enough to support subsistence fisheries.

Fish species present in the planning area may be categorized in four general categories: subsistence, commercial, sport, and non-sport. Subsistence fish species are an extremely important part of both the diet and the culture in rural Alaska. Fish that are caught for subsistence include salmon species such as Chinook salmon (*Oncorhynchus tshawytscha*), chum salmon (*O. keta*), and coho salmon (*O. kisutch*), and non-salmon species such as whitefish (*Coregoninae*), sheefish (*Stenodus leucichthys*), burbot (*Lota lota*), northern pike (*Esox lucius*), Alaska blackfish (*Dallia pectoralis*), and Arctic lamprey (*Lampetra japonica*). There is a commercial fishery for Chinook salmon, chum salmon, and coho salmon within the planning area, but there is no commercial fishery in waters managed by the BLM. Sport fish species include Arctic grayling (*Thymallus arcticus*), northern pike, burbot, and salmon. In addition, the Alaska Department of Fish and Game (ADF&G) Sport Fish Division has stocked area lakes with Arctic char (*Salvelinus alpinus*), rainbow trout (*Oncorhynchus mykiss*), and lake trout (*Salvelinus namaycush*). Non-sport fish are important prey for other species and include longnose suckers (*Catostomus catostomus*), slimy sculpin (*Cottus cognatus*), lake chub (*Couesius plumbeus*), and ninespine stickleback (*Pungitius pungitius*).

The current distribution of priority anadromous habitats are depicted on Map 82 and include areas determined to be Essential Fish Habitat.<sup>2</sup>

<sup>2</sup>Essential Fish Habitat (EFH) is those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity. Waters include aquatic areas and their associated physical, chemical and biological properties. Substrate includes sediment underlying the waters. EFH is identified for only those species managed under a Federal Fishery Management Plan, which at this time only includes Pacific salmon. This distribution of priority resident fish typically includes all drainages except for extreme headwater areas and shallow lakes.

### 3.2.4.1.2. Fish Habitat Description

Approximately 11,000 miles of streams and rivers are present on BLM-managed lands in the planning area. The planning area contains numerous anadromous fish streams, of which 400 miles are on BLM-managed lands. These streams are listed in the Anadromous Waters Catalog, maintained by the ADF&G (Johnson and Daigneault 2008) as shown in Map 82. In addition to streams and rivers, there are many lakes, sloughs, and other off-channel habitats in the planning area that support native fish species.

Indicators of fishery resource condition in the planning area are related to fishery habitat rather than population size. The condition of fish populations depends in large part on the quantity and quality of available habitat. One of the indicators frequently used to describe the condition of fish habitat is riparian proper functioning condition (PFC), which describes the quality of habitat near stream banks and lake shores. Riparian vegetation directly influences the condition, quality, and maintenance of aquatic habitats. Riparian plants filter sediments and nutrients, provide shade and regulate water temperatures, stabilize streambanks, provide cover in the form of large and small woody debris, produce leaf litter energy inputs, promote infiltration and recharge of groundwater (FEMAT 1993 and Takashi et al. 2002), and are responsible for the major proportion of the annual energy budget to stream food webs through leaf litter (Oswood et al. in Chapin et al. 2006). As a result of these functions, spawning beds for fish and microhabitats for macroinvertebrates remain relatively free of damaging fine sediment deposits and specific water temperature requirements (number of degree days) needed for egg development, reproduction and emergence of fish and macroinvertebrates are maintained.

The bank stabilizing function of riparian vegetation not only helps reduce erosion and influence channel morphology, but also acts to supplement instream cover by the development of undercut streambanks and by providing overhanging vegetation. Well-vegetated stream channels and stable streambanks help reduce turbidity and channel scouring resulting from high flows and can enhance primary production (Lloyd et al. 1987, Beschta et al. 1995). Riparian trees provide streams with critical instream habitat components such as woody material that creates pools, decreases flow velocity, provides refuge during the summer and winter for aquatic species, and provides shade, cover and a prey base for many species. Woody material also protects streambanks from erosion and provides microsites for riparian vegetation to be established.

The majority of the aquatic habitats managed by the BLM within the planning area are in natural or near natural condition. However, major stream altering activities in some areas have had an impact on aquatic resources. It's estimated that 150 to 200 miles of stream have been mined or reclaimed within the planning area since the 43 CFR 3809 Surface Management regulations were implemented {1981} (BLM 1988a,b,c). To date, few if any, of those stream miles are known to have achieved the desired stream and riparian habitat conditions outlined in Chapter 2. This is because the time scale for recovery of extensively altered stream channels in Interior Alaska is measured in decades (Tidwell et al. 2000, Arnette 2005) and because these altered stream channels may never reproduce the instream habitat conditions that existed prior to mining (Arnette 2005). Placer mining is or was occurring on some BLM lands in three of the four planning subunits: the Fortymile, Steese, and White Mountains. Streams impacted by placer mining are known to be in poorer condition, and are often considered either functional-at risk or nonfunctional. In some cases, such as portions of the Birch Creek watershed, fish populations that were historically present in streams affected by placer mining have been reduced in size or entirely displaced (ADF&G 1985). Due to the decadal (decades) time scale of recovery and

assuming that stream altering activities will continue, it's reasonable to conclude that fish and aquatic resources within the planning area may be of a downward trend.

The four major river drainages managed by the BLM in the planning area are Beaver and Birch creeks, and the Fortymile and Black Rivers, all tributaries to the Yukon River. Beaver and Birch creeks and the Fortymile River are all designated as Wild and Scenic Rivers (WSR). Beaver and Birch creeks are classified as "wild rivers"; the Fortymile WSR is classified as "wild, scenic, and recreational". Beaver and Birch creeks and the Black River are listed as anadromous rivers. The Fortymile River was removed from the list in 1999, due to a lack of supporting data (ADF&G 1999).

The upper 127 miles of Beaver Creek are designated as a Wild and Scenic River. It is located in the White Mountains NRA and supports small but viable Chinook, summer chum, and coho salmon populations. The BLM monitored Beaver Creek Chinook salmon escapement from 1996 to 2000 and the data revealed a declining trend similar to the overall decline of Yukon River Chinook salmon (Volk et al. 2009). Beaver Creek Chinook salmon were designated as a BLM Alaska sensitive species in 2004 due to the downward trend of this small population, but have recently been removed from that list and placed on a watch list. Placer mining disturbed approximately eight miles of stream bed and associated floodplain in Nome Creek, a tributary to Beaver Creek, from the early 1900s to the late 1980s. The BLM initiated a riparian reclamation and stream channel reconstruction project in Nome Creek in 1990. Since then, 5.5 miles of stream channel and approximately 210 acres of riparian habitat and floodplain have been reclaimed by annual maintenance of the stream channel, fertilizing, and willow planting. Beaver Creek also supports a healthy grayling and pike population which provides sport fishing opportunity for recreational anglers.

Birch Creek is located in the Steese National Conservation Area and the upper 110 miles are designated as a Wild and Scenic River. Placer mining operations have been active in the Birch Creek watershed for over one hundred years, resulting in elevated turbidity, poor water quality, and a reduction in fish habitat in the headwaters and tributaries to Birch Creek. As a result, Birch Creek was placed on the Alaska Department of Environmental Conservation impaired waterbody list in 1992. Combined efforts by placer-miner operators and regulatory and land management agencies to meet regulatory requirements have resulted in significant improvement of water quality in mined streams. At moderate to low flow, mined streams now typically meet Alaska Department of Environmental Conservation (ADEC) water quality standards. Many of the management activities in this area have focused on restoring water quality and improving fish habitat. The BLM undertook a substantial reclamation project in Harrison Creek, in the upper Birch Creek watershed, beginning in 2005. Harrison Creek reclamation is focused on restoring the connectivity of the stream channel to its floodplain, with the intent of reducing the amount of sediment eroding from the stream channel while allowing anadromous and resident fish populations to expand and colonize previously mined areas.

The upper Birch Creek Arctic grayling population increased in size between 1984 and 1990 (Townsend 1991). This was attributed to improved water quality and decreased turbidity resulting from improved mining practices, such as recycling mining water and reducing non-point source runoff from mines. Townsend (1996) found that the population of Arctic grayling in Birch Creek increased again between 1990 and 1995 and suggested that future increases would depend on the implementation of reclamation plans, such as improving stream bank and overburden stability and capturing sediments in settling ponds. Preacher Creek, a major tributary to Birch Creek, is generally a pristine system that provides spawning, overwintering, and rearing habitat for Arctic

grayling. Degradation of other portions of the Birch Creek watershed from mining activity may increase the importance of Preacher Creek for the production of Arctic grayling within the Birch Creek system. Preacher Creek also supports anadromous species such as summer chum and Chinook salmon. Birch Creek also supports small populations of Chinook, chum, and coho salmon, northern pike, sheefish, and other non-game fish species.

The Fortymile River, a designated Wild and Scenic River, is a northeasterly flowing tributary of the Yukon River of which the lower 20 miles flow through the Yukon Territory, Canada. Placer mining began over one hundred years ago in the Fortymile River drainage and continues today. Mining activities have led to stream channelization and a reduction in available fisheries habitat in Chicken, Lost Chicken, and Wade creeks. Since pre-mining fisheries data are unavailable, the full extent to which mining activities have impacted fish populations in the Fortymile River basin is unknown (ADF&G 1987b).

Suction dredging for gold is still a common practice in the Fortymile River, nevertheless, water quality indicators in the basin are relatively good. The ADF&G states that, dating back to the 1960s, only 16 juvenile and two adult Chinook salmon, 16 adult chum salmon and one unidentified salmon have been observed by State, federal and private entities in the Alaskan portion of the Fortymile River (ADF&G 1999). Their conclusion is that anadromous fish runs in the Fortymile River are at the upper limit of their natural distribution and may not successfully reproduce on an annual basis partly due to marginal habitat. Arctic grayling are the dominant fish species in the basin but are not particularly abundant.

The Black River watershed encompasses just over five million acres in the upper Yukon River drainage, of which the BLM manages 2.07 million acres. Most BLM-managed lands are located in the upper part of the basin, the Black River and its' tributaries are the most productive sources of fish in the area. This area is very remote and as a result, few fisheries studies have been performed in the drainage. In 2009, the BLM conducted fishery inventories on the Salmon Fork Black River (SFBR). Juvenile Chinook salmon were found during the inventories. Data collected during these surveys will likely result in extending the anadromous catalogue in the mainstem Salmon Fork and two of its tributaries. The SFBR is likely the most productive fish stream in the drainage, containing at least eight species of fish including Chinook salmon and a significant run of fall chum salmon. Sheefish use the SFBR for summer feeding and Alternative (1987) found evidence that suggests sheefish spawn in the SFBR. This would be significant as there are only five known sheefish spawning locations in the entire Yukon River drainage. Arctic grayling are found in good numbers throughout the SFBR and were the most abundant of all fish species sampled during a BLM fisheries inventory conducted in 1991.

### **3.2.4.1.3. Factors Affecting Fish Habitat and Production**

Although the majority of fisheries habitat within the planning area remains in a natural and undisturbed state, there are some areas that have been impacted by various disturbances, such as placer mining and road construction. In addition to human caused disturbances, a variety of factors, ranging from quantity and quality of habitat to harvest, climate conditions and disease, also affect both resident and anadromous fish production in the planning area.

Placer mining has resulted in the most significant and extensive impacts on fish habitat and production in the planning area. The adverse affects from placer mining in the Birch Creek drainage, specifically elevated turbidity levels, were high enough that in 1992 the Alaska Department of Environmental Conservation included Birch Creek on the list of impaired waters

where it remains today. Increased substrate embeddedness and turbidity resulting from active and abandoned mining claims directly and indirectly impact fish populations. Reynolds et al. (1989) reported that the loss of interstitial space in the stream bed due to siltation led to decreased survival of Arctic grayling fry and juveniles in Birch Creek. Indirect effects of mining, such as loss of summer feeding and reproduction habitat, may have more severe effects on Arctic grayling populations than direct effects (Reynolds et al. 1989).

Placer mining studies in the Birch Creek watershed found that fish habitat was decreased or eliminated by: (1) Channelization that resulted in fewer meanders and decreased stream length; (2) lack of pools, undercut banks, overhanging vegetation, and other features that provide cover for fish; (3) unstable stream banks resulting from bank and channel disturbance and lack of riparian vegetation; (4) decreased suitability of the stream-bottom substrates for fish and invertebrate habitation; and, (5) decreased food sources for the fish resulting from decreased invertebrate populations (Weber et al. 1985). These same deleterious effects to fish habitat from placer mining in active stream channels would apply to other mined streams within the planning area.

The BLM can minimize the negative effects of placer mining on fish habitat by developing and enforcing improved mining and reclamation techniques and by the use of stream buffers. For example, requiring the use of erosion control structures, such as silt fencing, can reduce sedimentation of instream habitats resulting from runoff. In addition, ensuring that stream reclamation plans consider watershed characteristics, are based on site-specific data, and use active revegetation techniques would be expected to accelerate stream and riparian habitat recovery. The BLM is actively working to develop guidance on stream reclamation and best management practices to ensure the rehabilitation of fish habitat post-mining. Riparian functioning condition is improving as a result of stream reclamation efforts in Nome Creek and is expected to improve in Harrison Creek once reclamation is complete. Water quality conditions have improved in Birch Creek and other tributaries in the Steese National Conservation Area, largely as a result of more stringent regulations.

It is widely accepted that road construction, especially within the floodplain, can adversely affect fish and fish habitat by introducing sediment into streams. Although the extent of impacts from road construction in the planning area is not known, it is reasonable to believe that some roads associated with mining operations have negatively affected fish habitat. Large amounts of sediment are introduced into the stream both during road washouts and flood events. Road culverts, if not properly designed and maintained, may act as fish barriers limiting upstream access to fish habitat.

*Ichthyophonus hoferi* is a parasitic organism infecting adult Chinook salmon in the Yukon River. The low returns of Yukon River Chinook salmon observed in recent years raises the question of the potential contribution of *Ichthyophonus* to these declines due to pathogen-induced mortality, reduced fecundity, and the inability of fish to successfully migrate to and spawn in tributaries (JTC 2009). This disease has the potential to reduce Chinook salmon production within the planning area.

### **3.2.4.2. Wildlife**

#### **3.2.4.2.1. Management Framework**

The responsibility for managing wildlife populations traditionally rests with the State of Alaska, except in special cases. These cases include the management of marine mammals,

migratory birds, and federally listed threatened or endangered species which are, at least in part, the responsibility of the federal government. Additionally, in Alaska, subsistence harvest management on federal lands is also a federal responsibility and several federal agencies share in this responsibility, including the BLM. The BLM conducts wildlife habitat management and population monitoring, which supports the State of Alaska's wildlife population management objectives, and the Federal Subsistence Management Program necessitated by ANILCA.

ANILCA requires management of BLM lands in Alaska not only to provide healthy populations, but also minimize impacts on subsistence resources and use of those resources. ANILCA (Sec. 802) states, "...consistent with sound management principles, and the conservation of healthy populations of fish and wildlife, the utilization of public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of the resources of such lands."

In the planning area, habitat management has focused on conservation efforts rather than rehabilitation, because most habitats are intact. Efforts have been made since 1982 to inventory and monitor population, distribution and habitat of some key wildlife species. Establishment of baseline data will allow future monitoring to indicate declines in populations or habitats and aid in identifying and minimizing impacts. Most monitoring is conducted in conjunction and cooperation with the ADF&G.

### 3.2.4.2.2. Current Condition and Trends

#### Moose

Moose occur throughout the planning area in elevations below about 3,000 feet. During fall and early winter, mid- to high-elevation shrub and open spruce habitats support higher densities of moose, along with recently burned (10 to 30 years) habitats. As snow accumulates through winter, moose tend to concentrate at lower elevations and especially along riparian areas of creeks and rivers. In summer, moose are widely dispersed and pregnant cows often travel long distances to low-elevation areas with abundant wetlands for calving and summer. Radio-collared cow moose from the White Mountains NRA and Steese National Conservation Area have traveled up to 100 miles to Tanana flats, Minto Flats, and Yukon Flats.

Moose densities in the planning area are generally moderate to low, presumably because of predation from wolves and bears (Gasaway et al. 1992) combined with habitat limitations. Wolf and bear populations are lightly harvested and bull moose harvest is generally low (due to limited access) and a minor factor in affecting population dynamics. Locally abundant moose occur seasonally in prime habitats. In Unit 20(E) (Fortymile), moose populations were high in the 1950s and early 1960s, reaching a minimum of 12,000 moose following federal predator control. Current (2006) moose numbers in Unit 20(E) are estimated at 3,600–5,200 moose or 0.45–0.64 moose/mi<sup>2</sup>. Harvest is limited by little access and bull:cow ratios are generally high (above 40 bulls:100 cows; Gross 2006). Unit 20(E) has been designated by the Alaska Board of Game as an Intensive Management Area, meaning it is designated as important for providing high harvest for human consumptive uses. Population and harvest objectives have been set accordingly and predator control has been implemented in a portion of the area.

Density of moose in Unit 25(C) (including the White Mountains NRA and Steese National Conservation Area) averaged 0.65 moose/mi<sup>2</sup> in 2007 (Herriges, Unpublished Data). Systematic population surveys in Unit 25(B) (Upper Black River subunit) have not been conducted, but

populations are considered to be low and probably declining. Moose densities in unit 25(D) are very low (0.2–0.3/mi<sup>2</sup> in 2001, ADF&G 2002b). The Yukon Flats and surrounding areas (which includes Units 25(A), 25(B), and 25(D)) are the subject of a cooperative moose management plan designed to promote an increase in the Yukon Flats moose population through better harvest reporting, reducing predation by increasing harvest of predators, minimizing illegal cow harvest, informing hunters and other, and using scientific information and traditional knowledge in management decisions.

Moose browse surveys have not been conducted in Unit 25(C) or 25(B); but observations in the field indicate that browsing is typically light with only local areas of moderate or heavy use. The proportion of current annual browse growth (CAG) removed by moose was low (approximately 9 percent) in Unit 25(D) (Yukon Flats) and nutritional status was apparently high as indicated by high (approximately 62 percent) twinning rates. Unit 25(B) is likely similar to 25(D). In 20(E), CAG removal was moderate (twenty-two percent) and twinning rates correspondingly lower (approximately 35 percent) (Paragi et al. 2008).

### Trend

Moose in the planning area are generally thought to be limited by wolf and bear predation. However, large wildland fires are generally considered to result in population increases due to the resulting increase in palatable browse. Maier et al. (2005) found that higher moose densities across several areas in Interior Alaska were associated with 11 to 30 year old burns. Similarly, a Resource Selection Function developed for the Steese/White Mountains (Nielsen 2007) indicated that 10 to 20 year old burns were one of the habitat variables most associated with an increased probability of selection by moose.

Following development of the Alaska Interagency Fire Management Plan, fire suppression efforts in the planning area have been reduced from complete suppression to predominantly Limited wildland fire suppression. In addition, weather conditions have resulted in record acreages burned in recent years. This may result in increased moose populations in the planning area. Large wildland fires in a two-year period (2004 and 2005) resulted in burn perimeters that covered 25.2 percent of the White Mountains/Steese 25C moose survey area. A moose survey in 1997 estimated 2,270 (+/- 15%) moose and a repeat survey in 2007 estimated 3,019 (+/-24%) for the area. Although the 2004–2005 wildland fires may or may not have influenced the population by 2007, survey units which were surveyed in both years showed an increase of five or more moose per survey unit since 1994, indicating that moose distribution shifted towards recently burned areas.

### Forecast

Increases in moose populations over the next 10 to 30 years are likely to occur throughout the planning area in response to recent wildland fires. Climate change is predicted to result in long-term increase in fire frequency (Rupp et al. 2006). Young seral stages and deciduous forests will occur as a higher proportion of the landscape, resulting in habitat more favorable for moose.

If migration pathways to Tanana Flats calving ranges are blocked by increased development and fencing, calf recruitment may be reduced. Currently, much of the route used by radio-collared moose is blocked with chain link fencing along the Richardson Highway.

### Caribou

Five caribou herds occupy the planning area at least seasonally. The White Mountains and Fortymile caribou herds occupy the planning area year-round, while the Porcupine and Nelchina caribou herds occupy the planning area primarily in winter. The MacComb, Mentasta, and Chisana herds also range into the planning area, but do not use BLM-managed lands as a significant portion of their range (Map 84).

Climate change may be the factor most affecting long-term caribou populations in the planning area. The alpine habitats which caribou utilize much of the year may decrease in overall area as tree-line rises, and they may experience drying which could decrease forage quality. Also, the availability of winter forage may decrease as old-age stands of spruce with abundant lichen decline with an increase in fire frequency. The impact of increased burn rates depend on the extent of winter range available. In addition, mid-winter warming could cause icing conditions which could reduce forage availability and/or increase susceptibility to predation. However, shorter seasons of snow cover could benefit caribou by improving energy balance.

### White Mountains Caribou

The White Mountains caribou herd was first recognized in the late 1970s and was thought to number 100 to 200 caribou (P. Valkenburg, pers. comm., in Seaton 2007). At that time it was believed to be a remnant of the Fortymile caribou herd, because the White Mountains caribou herd occurs within the historic range of the Fortymile herd. It is now considered likely that it has long been a separate herd. The range of the White Mountains herd is centered on the White Mountains NRA and north unit of the Steese National Conservation Area (Map 84). Small groups of caribou are observed year-round in the area of the Pinnell Mountain Trail (between Twelvemile and Eagle Summits of the Steese Highway) and they could be considered part of the White Mountains herd. Peak minimum count of the herd was 961 in 1998; a population estimate calculated from the proportion of radio-collared caribou in large groups was 1842 and likely an overestimate (Herriges, unpublished data). A census in June 2008 resulted in a count of 677 animals and an estimated population of 762. Reported harvest of this herd totaled 381 caribou 1987–2006, or an average of 21 caribou/year. Weights of female calves have been consistently high in this herd, indicating that nutritional status is high and that range quality is good.

### Fortymile Caribou

The Fortymile caribou herd range is centered in the planning area and is the most important herd to residents of Interior Alaska. It is also a herd of statewide and international importance. The historic range of the herd is thought to have once included almost the entire planning area, with the exception of the northern portion of the Upper Black River Subunit, and extended to Whitehorse, Yukon Territory.

During the 1920s the Fortymile caribou herd (then known as the Steese-Fortymile caribou herd) was the largest herd in Alaska and was one of the largest in the world, estimated at over 500,000 caribou (Murie 1935). The herd declined during the 1930s to an estimated 10,000–20,000 caribou. By the 1950s the herd had increased to an estimated 50,000 caribou, with population estimates fluctuating around this number through the early 1960s. Between the mid 1960s and mid 1970s, the population experienced a significant decline attributed to high harvests, severe winters, and predation by wolves, reaching a low in 1973–1976 of an estimated 5,740–8,610 caribou (Gross 2007). During this decline, the Fortymile herd reduced range size and changed seasonal migration patterns. By the early 1960s, the herd stopped crossing the Steese Highway in significant numbers, and by the early 1970s, few Fortymile caribou continued to move annually into Yukon Territory, Canada. Since the early 1970s, the herd's range has remained about 19,300

mi<sup>2</sup> (50,000 km<sup>2</sup>), less than 25 percent of the range thought to have been used by the herd during the 1920s (Gross 2007). (Map 84).

Between 1990 and 1995, the herd remained relatively stable at about 22,000 caribou. During 1996–2002, following implementation of the Fortymile Caribou Herd Management Plan and during a period of favorable weather conditions, the herd doubled in size, peaking at 44,100 animals in 2003. This herd management plan included restrictions in harvest and implementation of non-lethal wolf control (November 1997 to May 2001), as well as private wolf trapping. Over the next few years, the herd growth stopped and the population declined slightly. The estimated pre-calving population in May 2007 was 41,400 caribou (Gross 2007) and 39,000 in 2008 (J. Gross pers. comm.). The Alaska Board of Game expanded the Upper Yukon-Tanana Predation Control Area to include most of the Fortymile herd's range to initiate an increase in the herd and aid in achieving the population objective of 50,000–100,000 caribou, with a harvest objective of 1,000–15,000 caribou established under intensive management regulations (Gross 2007). In the last five to 10 years, the herd has expanded its range into more of the traditional range, likely as a result of an increasing population. The mid-summer 2010 estimated population was 51,565.

Generally high calf weights and high pregnancy and birth rates indicate that nutritional status is moderate to high and range is in good condition (Boertje and Gardner 2000). Fluctuations in these parameters are largely attributed to weather conditions—dry summers and winters with heavy snow are thought to result in reduced calf weights and birth rates (Gross 2007). During 1991–2000, lichen fragments made up seventy-two to 81 percent of fecal samples and mosses only 8 percent, indicating excellent range conditions (Gross 2007). Markedly decreased birth rates among three-year-old cows occurred in 2009 and 2010 and were not obviously weather-related (Rod Boertje, pers. comm.). Persistence of low rates for several more years might indicate declined range conditions.

Although weather conditions cause fluctuations in population growth, predation has reduced growth rate of the Fortymile herd (Boertje and Gardner 2000). Predator control (including aerial shooting of wolves under permit from ADF&G) is currently being utilized by ADF&G wildlife managers to improve growth rates of the Fortymile herd. The predator control area includes BLM-managed lands in the south unit of the Steese National Conservation Area, the Fortymile WSR Corridor, and other scattered BLM-managed lands in the Fortymile area.

Habitat conditions and availability will determine the limits to growth of the herd. The habitat across most of the herd's range is largely intact, with a very small proportion (likely less than 1 percent) of the range impacted by surface-disturbing activities. Potential actions or activities that may limit habitat quantity and quality include: large mining operations with associated access; road and trail density; human disturbance from OHVs (including snowmobiles) or aircraft (most of the herd range lies under Military Operations Areas used for aerial exercises); and increasing fire frequency.

### Porcupine Caribou

The Porcupine caribou herd utilizes the Upper Black River Subunit during winter. The most recent population estimate of 123,052 caribou was obtained in 2001 and indicated a steady decline since 1989, when 178,000 caribou were estimated (Lenart 2007). It is likely that the Porcupine herd has continued to decline and possibly numbered between 110,000–115,000 caribou in 2006 (Lenart 2007). The Upper Black River Subunit constitutes only a small proportion of the herd's current winter range. This habitat may be more important at some population levels or in years

when weather conditions may be more favorable here than in other areas. Habitat in this remote subunit is essentially undisturbed by human activity.

Warming climate is expected to increase the area burned each year, which will likely reduce the area of available winter range in the Upper Black River Subunit. Lightning-caused wildland fires have been more frequent in recent years, and impact caribou winter range by reducing forage lichens for at least 50 years. Whether this impacts the herd depends on extent of other winter range available. As area of old-age spruce-lichen stands decreases, the importance of the remaining unburned stands will increase.

### Other Caribou Herds

The Nelchina caribou herd has utilized the southern portion of the Fortymile caribou herd winter range (Map 84) in recent years. Harvest regulations are modified (within season when necessary) to limit harvest of the Nelchina herd in this area.

The Mentasta caribou herd occupies land within the northern half of Wrangell-St. Elias National Park and Preserve. Their historical range extends into the planning area in Unit (11) and overlaps with the Fortymile herd range in southern Unit 20(E), but the herd does not utilize BLM-managed lands. The Mentasta herd once numbered 3,500 during mid to late 1980s, but only 273 were counted in 2003. In season modifications to harvest regulations are sometimes needed to prevent harvest of caribou of the much smaller Mentasta herd when it is in the Fortymile hunt area.

### Dall Sheep

Dall sheep are some of the highest-profile wildlife species of interest in the planning area and across Alaska. Dall sheep occur in the planning area primarily in the Yukon-Tanana uplands (Map 84). These populations are somewhat unique in that they occupy uncharacteristically low-elevation habitats in areas of often rounded topography. In this area, it is not uncommon to see Dall sheep in low shrub or open forest habitat, especially in areas near river bluffs and low-elevation mineral licks. Sheep populations occur in relatively low-density and in scattered areas of suitable habitat in the Yukon-Tanana Uplands.

The White Mountains are the western edge of the Yukon-Tanana Uplands and support a population of sheep which has likely been isolated from other populations for many years. At least occasional interchange likely occurs between all other populations of sheep (Burch and Lawler 2001) in the Yukon Tanana Uplands and between Alaska herds and those in Canada. Sheep in the Yukon-Tanana Uplands often have black hairs in their tail and elsewhere in their coat. Some sheep with distinctive dark saddles have been observed in the eastern portion of the planning area, near Eagle; these sheep are known as Fannin sheep and are considered a gradation between Dall sheep (*Ovis dalli dalli*) and Stone Sheep (*O. dalli stonei*). The presence of Fannin sheep characteristics make Yukon-Tanana Uplands Dall sheep somewhat unique within Alaska.

Sheep likely utilize portions of the higher sections of the Kandik River, and upper Grayling Fork drainages in the Upper Black River Planning Subunit. These areas are not mapped by ADF&G as sheep habitat, but occasional use by sheep from nearby population centers is likely. The Keele Range north of the Salmon Fork of the Upper Black River in Alaska has been reported to have supported Dall sheep and sheep hunting in the past (Vuntut Gwitchin Government and Yukon Territory Government 2009), but there are no recent records of Dall sheep in this area. Sheep or sheep sign were not observed during BLM field trips in the area in 1991 and 1997.

In the Fortymile subunit, Dall sheep populations inhabit BLM-managed lands in the Glacier Mountain and Mount Harper areas and in upper Granite Creek, on the east border of Yukon-Charley Rivers National Preserve. In the Glacier Mountain area, which is designated as a controlled use area under state hunting regulations, that prohibit the use of motorized vehicles, an average of 87 sheep have been counted in surveys between 1998 and 2002. The Mount Harper area is managed as a drawing permit hunt area and an average of 74 sheep have been counted there in aerial surveys in 1997–2002 (Parker McNeill 2005).

The West Point sheep population utilizes the Puzzle Gulch and Big Windy Creek drainages in the south Steese National Conservation Area. An average of 142 sheep have been counted there in 1999–2002 (Lawler et al. 2005). A small number of sheep also occur around Mount 5580 in the south Steese National Conservation Area.

An average of 309 sheep were counted in aerial surveys from 1997–2002 in the Yukon-Charley Rivers National Preserve, including small numbers that utilize BLM lands near Mount 5580 in south Steese National Conservation Area and headwaters of Granite Creek (Lawler et al. 2005). Thus, the average Yukon-Tanana Uplands sheep population observed in aerial surveys (1997–2002) was about 1,200. Seventy-four percent (893) of this population was dependent on BLM lands. This will decrease somewhat if lands around Mount Harper and Glacier Mountain are conveyed.

Sheep in most areas of the White Mountains make frequent use of mineral licks even though the licks may be located far from preferred escape habitat. The mineral lick at Lime Peak was visited almost daily during June through September by some GPS equipped radio-collared sheep. Most sheep at Mount Prindle travel 14–21 miles along open ridgetops, tussock meadows, and open black spruce forests (exposing themselves to significant predation risk) to visit mineral licks on Preacher Creek. Although their exact role in individual and population health is not known, mineral licks are typically considered crucial habitats for mountain sheep. There are also mineral licks identified in the Fortymile area for sheep (as well as caribou and moose).

### Trend

Aerial surveys of the White Mountains Dall sheep populations have occurred since 1970. These have been conducted cooperatively by ADF&G, BLM, and USFWS. The population count decreased from 285 sheep in 1970 to 124 sheep in 1977, and then counts gradually increased to a peak of 717 sheep in 1999. Some of this increase may have been due to increased survey effort and a more complete knowledge of utilized sheep habitats (including mineral licks that are far from typical sheep habitat), but it is clear that sheep were much less numerous in the 1970s. Counts of sheep declined by about 32 percent from 1999 to 2002. The White Mountains caribou herd suffered an apparent decline in this same time period, indicating a possible common factor, such as weather. Although a number of animals prey on Dall sheep adults and/or lambs, it is generally considered that weather conditions are a larger factor than predation in determining sheep populations and trends.

### Forecast

Most of the sheep habitat in the Yukon-Tanana Uplands occurs in the "Primitive" management areas of the White Mountains NRA and Steese National Conservation Area and in Yukon-Charley National Park and Preserve. As such, these areas have been protected from surface-disturbing activities such as large mines and disturbance associated with summer motorized vehicle use. As

with caribou, habitat conditions and availability will ultimately determine the limits to growth of sheep populations.

The habitat across most of the herd's range is largely intact and undisturbed. Most sheep habitat in the planning area is remote from roads and access, except by small plane or boat, is limited. Winter motorized vehicle usage is currently limited in Dall Sheep habitat by remoteness and rough and rocky terrain. There may be areas of low-elevation habitat that in the future could receive snowmobile use at levels sufficient to affect sheep use of those habitats. The sheep in the Mount Prindle area are closest to roads and summer and winter motorized vehicle access routes. The currently remote Mount Harper and Glacier Mountain areas in the Fortymile Subunit could see increased access if roads are developed to access lands being conveyed to the State of Alaska and Native corporations, possibly for mineral development. Habitat management decisions will determine future extent of habitat maintenance. Roads and OHVs in sheep ranges could potentially impact sheep populations.

### **Grizzly (Brown) Bear**

Grizzly bears are widely distributed within the planning area, though densities are lower in lowland flats. When not hibernating, grizzlies utilize a variety of habitats within their home range to take advantage of seasonably available food sources. Grizzly bears consume a wide variety of foods including berries, grasses, sedges, roots, fish, small mammals, and moose and caribou (primarily calves). Population and local densities vary depending on the productivity of the habitat and seasonal availability of forage and prey. The current condition of grizzly bear habitat in the planning area has not been quantified. For the most part, the habitat is in a natural condition.

Grizzly bears occur at low densities throughout the planning area. In Unit 20(E), grizzly bear density was recently estimated by sampling hair with barbed wire at baited sites. Fifty six bears were sampled, resulting in an estimated density of 11–13 bears/1,000 square kilometers. Bears were least abundant at stations within recently burned areas (Gardner et al. 2007). Harvest of bears in the planning area is generally low.

### **Black Bear**

Black bears occur throughout the planning area and typically prefer forested habitats. Within the White Mountains NRA and Steese National Conservation Area, black bears occur in higher densities in areas adjacent to Yukon Flats NWR (where black bears are abundant), including the Victoria Creek, Lower Beaver Creek, and the Crazy Mountains, and low densities elsewhere. Black bears may be relatively abundant in portions of the Upper Black River Subunit. Hobgood (1991) reported abundant black bear sign along the Salmon Fork of the Black River. Black bears utilize any available habitats within their home range, taking advantage of seasonally available food sources. They are opportunistic foragers and will readily consume whatever is available including green vegetation, berries, ungulates neonates, fish, insects, and carrion; however, freshly sprouted green vegetation composes the majority of their diet (ADF&G 1994). The current condition of black bear habitat in the planning area has not been quantified. For the most part, the habitat is in a natural condition.

### **Gray Wolf**

In general, wolves are found throughout the planning area, but are more abundant in areas where numbers of prey species are greater. They are carnivorous, and in most of Alaska, moose and caribou are their primary food. During summer, small mammals including voles, lemmings,

ground squirrels, snowshoe hares, beaver and occasionally birds and fish supplement their diet (ADF&G 1994 wildlife notebook). Wolf populations are limited by prey species abundance, and in some areas by human harvest (such as the Fairbanks area) or direct control activities. ADF&G estimated the population of wolves in Unit 25(C) to be 75 to 125 individuals in 10 to 20 packs and 252 to 313 wolves in 26 to 42 packs in Unit 20(E) during the 2004–2005 regulatory year.

Wolf populations in Unit 20(E) have been the subject of several population control actions. In 1997–2001, non-lethal sterilization of adult males and females with capture and movement of subadults out of the area was conducted in the calving range of the Fortymile caribou herd. A program of lethal control was later begun with the creation of the Fortymile Predator Control Area. It allows private pilot/gunner teams to shoot wolves from the air under permit from the ADF&G. Beginning in 2005, the Fortymile Predator Control Area was expanded to include the South Fork of Birch Creek in the Steese National Conservation Area and expanded again later to include all of the south unit of the Steese National Conservation Area. Due to limited harvest by private pilot/gunner teams, ADF&G utilized helicopters to reduce wolf numbers in the Fortymile Predator Control area, beginning in March 2008. The remainder of the planning area supports lightly harvested wolf populations, which presumably fluctuate largely with populations of prey.

Wolf numbers will fluctuate with numbers of prey (primarily caribou and moose), except in predator control areas. Dog lice was diagnosed in Unit 20(A) south of Fairbanks in 2004. If dog lice infestation becomes prevalent in wolves in the planning area, wolf populations may be affected to an unknown degree. In predator control areas, wolf populations will likely recover quickly (following the cessation of control efforts) through high reproduction rates and immigration from surrounding areas. Wolf and other predator abundance is related in complex fashion to human harvest, prey abundance and vulnerability, and (ultimately) prey habitat quality.

### Furbearers

Furbearers include those species of mammals that are routinely sought by licensed trappers who place commercial value on the animals' pelts. Furbearers found in the planning area include beaver, red fox, lynx, marten, mink, muskrat, river otter, coyote, wolverine, and wolf. Most furbearer harvest (by both hunting and trapping) in the planning area is by subsistence and recreational users, or is done opportunistically while engaged in other activities. Definitive species population and distribution information is not available, and consequently population managers rely upon annual trapper harvest reports and opinions, and field observations by agency personnel to gauge furbearer status and trend information. Reporting of harvest is required for only a few species, including lynx, river otter, wolf, and wolverine. Furbearer harvest monitoring is generally at a level of intensity sufficient to monitor and ensure harvest is not severely depressing populations.

Wolverines are generally distributed throughout Interior Alaska, except in the vicinity of Fairbanks (Gardner 2007). Wolverines have extensive home ranges (50–240 mi<sup>2</sup>) and occupy a variety of habitats (ADF&G 1994). A survey for presence/absence of wolverine across most of the planning area was conducted in 2006 (Gardner 2007). Wolverine were detected in most units across the survey area, with the exception of a large block of units around Fairbanks, Nenana, and south to the Alaska Range. Reported wolverine harvest in units 25(B), 25(C), and 20(E) has averaged 10, 1.4, and 5.9 per year for the nine years from 1997–1998 through 2005–2006 regulatory years.

Once found throughout northern North America, Canada lynx were federally listed in 2003 as a threatened species in the northern Rocky Mountains of the Lower 48. In Alaska and Canada, lynx are widespread and considered a legal furbearer, and are actively sought by trappers. Lynx are

found throughout the planning area where suitable habitat and snowshoe hare populations exist. The primary prey of lynx in most areas is the snowshoe hare, which undergoes an 8–11 year cycle of abundance. Lynx populations follow snowshoe hare cycles. Other small prey, such as grouse, ptarmigan, squirrels, and microtine rodents are regularly taken. Harvest is believed to have limited effect on lynx population trends. When hares are scarce, lynx use other food sources more extensively (ADF&G 1994). Total reported harvest in the nine-year period (1997–98 through 2005–06 regulatory years) averaged 170 lynx annually in Unit 25(B), 13 in 25(C), and 63 in 20(E).

The river otter is widely distributed across Interior Alaska. River otter tracks are commonly observed on sections of Beaver Creek in the White Mountains NRA in winter. No population estimates or trend analysis for river otters in the planning area are available. Harvest of otters is rare throughout the planning area (ADF&G 2007).

The beaver is widely distributed throughout forested areas of Alaska. Water environments greater than two to three feet of depth are necessary to sustain a beaver during the entire year (ADF&G 1994). Boyce (1974) compared a lightly harvested beaver population on lower Birch Creek and a heavily harvested population on the Chena river. Both rivers had population densities of nearly 0.5 colonies/km.

Marten are found throughout forested habitats of Interior Alaska. Marten are the focus of most trapping effort in units 25(C) and 20(E) due to their relative abundance and fur value. Trapper questionnaire returns (which are voluntary and so report only a fraction of actual harvest) report harvest of seven, 139, and 162 marten in Units 25(B), 25(C), and 20(E) in the 2004–2005 regulatory year.

Coyotes remain generally uncommon in the planning area, but have increased in number in Interior Alaska in recent years. They have been noted with increasing frequency since the early 1990s in the southern portions of the White Mountains NRA by BLM recreation staff (Tim DuPont, pers. comm.)

Red fox range widely throughout Alaska except for some southeast islands, the western Aleutians, and Prince William Sound. The red fox has an omnivorous diet composed of small mammals, birds, eggs, insects, vegetation, and carrion, but prefer voles (ADF&G 1994).

Muskrat are found throughout Alaska's mainland, except the Arctic Slope north of the Brooks Range. Preferred muskrat habitat is not common on BLM lands in the planning area. No specific information is available on population sizes or trends for muskrat.

Mink are found throughout Alaska, except on Kodiak Island, the Aleutian Islands, the offshore islands of the Bering Sea, and most of the Arctic Slope. Little is known of the status of mink in the planning area. Within ADF&G region III, 127 mink were reported harvested in 2004–2005 regulatory year in trapper questionnaires, but none in units 25(B), 25(C), or 20(E).

Since furbearer species occupy a wide variety of habitats, it is difficult to generalize on habitat condition. However, almost all of the planning area is in a natural state and human harvest is regulated. In general, important furbearer populations such as marten and lynx are benefited by periodic wildland fire due to positive effects on small prey populations.

### **Alpine Small Mammals**

Hoary marmot and pika occur in alpine habitats in the Yukon-Tanana Uplands, but apparently not in the Black River Subunit. Arctic ground squirrels are notably absent from the Yukon-Tanana

Uplands alpine habitats; this absence may have a major influence on ecology and abundance of predators relative to other alpine areas of Alaska.

### **Birds**

All birds which occur in the planning area are classified as migratory birds under the Migratory Bird Treaty Act, with the exception of ptarmigan and grouse (which are classified as game birds). In the planning area, game birds include rock and white-tailed ptarmigan, and ruffed, spruce, and sharp-tailed grouse.

### **Raptors-Birds of Prey**

Numerous species of raptors inhabit the planning area including: golden and bald eagle, peregrine falcon, osprey, gyrfalcon, northern harrier, American kestrel, merlin, sharp-shinned hawk, northern goshawk, rough-legged hawk, great horned owl, great gray owl, northern hawk owl, short-eared owl and boreal owl. All are classified as migratory birds, but some remain resident through the year, including gyrfalcon and several owls (great horned, great gray, hawk and boreal). Since these species occupy a wide variety of habitats, it is difficult to generalize on habitat condition. However, most of the planning area is in a natural state, and permitted activities are concentrated in localized areas.

Golden eagle are present throughout the planning area, but in low numbers, perhaps because of the lack of Arctic ground squirrels, an important prey species. Nesting golden eagles in the White Mountains NRA and Steese National Conservation Area are rare (Herriges unpublished data). Bald eagles nest along the major rivers in the planning area, including Beaver Creek, Birch Creek, Fortymile River, and Salmon and Grayling forks of the Black River. Bald and golden eagles are protected by the Bald and Golden Eagle Protection Act. Osprey are uncommon in the planning area, but apparently increasing.

The Peregrine falcon was removed from the endangered species list in 1999, following recovery from a continent-wide decline. Peregrines occur scattered throughout the planning area, but are most abundant along river bluffs in the Fortymile WSR and Birch Creek WSR Corridors. Nesting habitat generally consists of bluffs or cliffs adjacent to water, however nests at higher elevation sites away from water have been observed in the White Mountains NRA. In the middle Birch Creek drainage (Clum's Fork and below to the Steese Highway) there have been approximately 25 nest sites documented, with roughly 75 percent occupied in a year (Ritchie and Shook 2003). Along 117 miles of the Fortymile River, Shook and Ritchie (2007) counted 30 pairs and six single peregrine falcons in 2006. These are the areas of highest peregrine nest site density on BLM-managed lands in the planning area, but populations also inhabit Beaver Creek, Preacher Creek, and scattered bluffs in the Upper Black River subunit. Population levels may have reached the point where most suitable nesting territories are occupied.

Peregrine falcons have been generally increasing in range and abundance over the past 20 years within the planning area. Monitoring of American peregrine falcon occupancy and productivity has been conducted in the Fortymile Wild and Scenic River six years within the period 2000–2008. Number of nesting pairs has increased from 14 pairs in 2004 to 29 pairs in 2008. An increase in occupancy of irregular territories (those used 20 to 80 percent of years monitored) since 2000 indicates that the population in the Fortymile is increasing. An increase in the presence of floaters (single adults) in the Fortymile River is also an indicator of an increasing population (R. Gronquist, pers. comm.).

## Waterfowl and Other Wetland Birds

Within the planning area, there is scattered wetland habitat that is used by a variety of ducks, geese, swans, loons, grebes, and shorebirds. Open water wetlands are uncommon on BLM lands. Smaller concentrations of wetlands occur in lower elevations of the Black River Subunit, Mosquito Flats (Fortymile subunit) and around lower Birch Creek near Circle (Steese subunit). Since these species occupy a wide variety of habitats, it is difficult to generalize on habitat condition. However, most of the planning area is in a natural state and permitted activities are concentrated in localized areas.

## Passerine (perching) Birds

The University of Alaska Museum lists 487 passerine species positively identified in Alaska (Gibson et al. 2009). Many of these species occur in the planning area. Because of the variety of habitats preferred by the many species of birds that migrate to Alaska each year, migratory birds are known to occupy every habitat type within the planning area, including riparian, wetland, forest, shrub, and alpine tundra. Given Alaska's short summers, the success of breeding birds depends greatly on their ability to locate suitable nesting habitat in a timely fashion, endure infrequent adverse weather conditions, evade predators, and avoid disruption of their normal routine. Suitable nesting habitat is especially critical to the success of breeding birds, as it enables them to meet the specific needs of rearing young while expending as little energy as possible in the process. Migratory birds that are considered Special Status Species are considered in further detail under section 3.2.7 Special Status Species. Since bird species occupy a wide variety of habitats, it is difficult to generalize on habitat condition. However, most of the planning area is in a natural state, with only localized areas of disturbance.

## Bird Species of Conservation Concern

Bird Species of Conservation Concern include BLM-sensitive birds (discussed in section 3.2.7.2 Special Status Species sections), species listed by the U.S. Fish and Wildlife Service (USFWS 2008c) as Bird Species of Conservation Concern in Bird Conservation Region 4 (BCR4), Alaska Shorebird Conservation Plan "priority" species, Waterbird Conservation Plan for the Americas "high risk" species, Boreal Partners in Flight (BPIF) "priority" species, or North American Waterfowl Management Plan "high" or "moderately high" continental priority species. BLM interim guidance (IM 2008–2050) has directed BLM planners to consider these bird species of concern during the planning process. These species are listed in Table 3.17, "Bird Species of Conservation Concern in the Eastern Interior Planning Area". These species are designated for a variety of reasons, including small population or range size, declining populations, or susceptible or disturbed habitat.

**Table 3.17. Bird Species of Conservation Concern in the Eastern Interior Planning Area**

Bird Species	BLM AK <sup>a</sup>	USFWS BCR4 <sup>b</sup>	AK SWCS <sup>c</sup>	BPIF <sup>d</sup>	Conservation Plans <sup>e</sup>
Gray-cheeked Thrush				Priority	
Olive-sided Flycatcher	Sensitive		featured	Priority	
Trumpeter Swan	Sensitive				
Blackpoll Warbler	Sensitive		featured	Priority	
Townsend's Warbler			featured	Priority	
American Peregrine Falcon		BCR4	featured		

Bird Species	BLM AK <sup>a</sup>	USFWS BCR4 <sup>b</sup>	AK SWCS <sup>c</sup>	BPIF <sup>d</sup>	Conservation Plans <sup>e</sup>
Golden Eagle	Sensitive				
Buff-breasted Sandpiper			featured		Priority
Smith's Longspur			featured	Priority	
Rusty Blackbird	Sensitive		featured	Priority	
Solitary Sandpiper		BCR4	featured		Priority
Short-billed Dowitcher <sup>f</sup>		BCR4			Priority
Hudsonian Godwit <sup>f</sup>		BCR4			Priority
Short-eared Owl	Sensitive		featured		
Arctic Tern			featured		High Risk
Whimbrel <sup>f</sup>		BCR4			Priority
Horned Grebe		BCR4			
Lesser Yellowlegs		BCR4			Priority
Upland Sandpiper		BCR4			Priority
American Golden Plover					Priority
Surfbird					Priority
Mallard					High Priority
Lesser Scaup					High Priority
Northern Pintail					High Priority
American Wigeon					Mod.High Priority
Canvasback					Mod.High Priority
Redhead					Mod.High Priority
Common Goldeneye					Mod.High Priority
Long-tailed Duck			featured		Mod.High Priority
Black Scoter					Mod.High Priority
White-winged Scoter					Mod.High Priority
Surf Scoter					Mod.High Priority
Gyrfalcon				Priority	
Sharp-tailed Grouse				Priority	
American Dipper				Priority	
Northern Shrike				Priority	
White-winged Crossbill				Priority	
Bohemian Waxwing				Priority	
Black-backed Woodpecker				Priority	
Boreal Owl				Priority	
Varied Thrush				Priority	
Hammond's Flycatcher				Priority	
Great Gray Owl				Priority	
Golden-crowned Sparrow <sup>f</sup>				Priority	

<sup>a</sup>Species listed by BLM in AK as sensitive.

<sup>b</sup>Species listed as a Bird of Conservation Concern in Bird Conservation Region 4 (interior AK) (BCR4).

<sup>c</sup>Species listed in the Alaska State Wildlife Conservation Strategy (SWCS) as a featured species.

<sup>d</sup>Species listed by the Alaska Boreal Partners in Flight as Priority Species in AK.

<sup>e</sup>Alaska Shorebird Conservation Plan Priority Species, Waterbird Conservation Plan for the Americas High Risk Species, or North American Waterfowl Management Plan High or Moderately High Continental Priority Species

<sup>f</sup>Not likely found in planning area in significant numbers

### 3.2.5. Non-Native Invasive Species

Non-native invasive species include pathogens, plants and animals. Many non-native invasive plant (invasive plant) species occur within the planning area. Extensive inventory has been completed within and adjacent to some of the planning subunits, especially along the Steese, Elliott and Taylor highways and areas disturbed by mining and recreation. Most of the invasive species occur in disturbed areas such as along roadsides and within communities. Invasive species also occur in association with disturbances from placer mining, recreation, road repair and gravel extraction. Recently the aquatic invasive plant *Elodea nuttallii* has been documented in the planning area in the Chena River drainage and the human-made Chena Lake, which is a popular recreation site. Most of these species come from South America, Europe, Asia, or Russia. These plants were usually imported, either intentionally for their perceived value to humans, or inadvertently as contaminants in other products.

The term non-native invasive plant(s) or the invasive plants will be used in this document to describe plants that are not native plants of Alaska. The term “weed” is commonly used, but is often applied to both native and non-native vegetation, and is considered any plant that is growing where it is undesirable.

Of the invasive plants in the planning area, some may be classified as noxious plants. In BLM's national plan, *Partners Against Weeds, An Action Plan for the Bureau of Land Management*: a “noxious weed” is defined as “a plant that interferes with management objectives for a given area of land at a given point in time” (BLM 1996). The Alaska Land Health Standards and Guidelines (BLM 2004c) define noxious weed as “an undesirable plant because it is of no forage value (or toxic), or is capable of invading a community and replacing native species.” federal laws require that certain actions be taken to manage listed “noxious weed” species.

Some of the potential consequences of invasive plants include effects on: Productivity of native rangelands; diversity of native plant and animal species; range and population of special status plants; habitat structural diversity; soil biological crusts; scenic values; tourism; recreation; and in some cases, human health and safety. Invasive plants degrade these uses and values by displacing native plant species, decreasing soil stability, and disrupting natural processes such as soil/water interactions, fire frequency and intensity, nutrient cycling, and energy flow.

The magnitude of the invasive plant problem in Alaska is minor compared to other western states, however, active monitoring and control, especially early detection and rapid response, are important to keep invasive plant distribution and introduction from expanding. All western states except Alaska provide annual funding and statutory support for a state agency to conduct invasive plant management. Alaska does provide statutory support for management activities through AS 03.05.010 and AS 44.37, which authorize the ADNR, Division of Agriculture, to prevent the importation and spread of invasive plants that are injurious to public interest and for the protection of the agricultural industry. Statutory support is expanded in AAC Title 11 Chapter

34 with regulations for noxious weed control and rules for the establishment of quarantines, inspections, noxious weed lists, and control measures.

Most states have developed lists of prohibited or regulated noxious and invasive plant species. Alaska Administrative Code Title 11 34.020 lists prohibited and restricted noxious weeds, but refers to prohibitions against the presence of the seeds of these species in seed for commercial sale and was developed for agriculture. The list was not developed to provide for management of invasive plants on public lands. There is also a federal noxious weed list (7 CFR 360). Currently BLM Alaska does not have a list of noxious plant species.

Inventory of non-native invasive plants was conducted on disturbed areas within the Steese National Conservation Area and White Mountains in 2002 and 2003 respectively. Additional surveys in and adjacent to burned areas were conducted within these two planning subunits in 2005. The Alaska Natural Heritage Program (AKNHP) conducted inventories in 2005 along parts of the Steese and Elliott highways. In 2006 and 2007, AKNHP was contracted to inventory and monitor for invasive plants along the Steese Highway in and adjacent to areas burned by wildland fire in 2004 and 2005. Limited surveys were conducted by the BLM in and adjacent to wildland fires in remote areas and along the Taylor Highway in 2005 and 2006. The AKNHP conducted surveys along the Taylor Highway during 2006 and 2007. Table 3.18, "Non-native Invasive Plants in the Steese and White Mountains Subunits 2002–2007, and Fortymile Subunit 2005–2007" lists all invasive plant species detected within the planning area during these surveys.

Non-native invasive insect species have been detected in Alaska, most notably forest pests. Currently, no serious non-native invasive plant pathogens occur in Alaska. No known invasive terrestrial or aquatic animals have been detected in or adjacent to the planning area.

**Table 3.18. Non-native Invasive Plants in the Steese and White Mountains Subunits 2002–2007, and Fortymile Subunit 2005–2007<sup>a</sup>**

Scientific Name	Common Name	Steese and White Mountains Subunits	Fortymile Subunit
<i>Achillea millefolium</i> L. sens. str	common yarrow	X	X
<i>Bromus inermis</i> Leyss.	smooth brome	X	X
<i>Capsella bursa-pastoris</i> (L.) Medik.	shepherd's purse	X	X
<i>Chenopodium album</i> L.	lamb's quarter	X	X
<i>Collomia linearis</i>	tiny trumpet	X	X
<i>Crepis tectorum</i> L.	annual hawkbeard	X	X
<i>Elymus repens</i>	quackgrass	X	X
<i>Elymus sibiricus</i> L.	Siberian wild rye	X	X
<i>Erysimum cheiranthoides</i> L. subsp. <i>Chei</i>	wormseed mustard	X	X
<i>Hieracium umbellatum</i>	Narrow-leaf Hawkweed	X	X
<i>Hordeum jubatum</i> L.	foxtail barley	X	X
<i>Lepidium densiflorum</i> Schrad	common peppergrass	X	X
<i>Lolium perenne</i> L.	perennial rye grass	X	X
<i>Matricaria discoidea</i> DC	pineappleweed	X	X
<i>Melilotus alba</i> Medikus	white sweetclover	X	X
<i>Melilotus officinalis</i> (L.) Lam.	yellow sweetclover	X	X
<i>Phalaris arundinacea</i>	Reed Canary Grass	X	X
<i>Plantago major</i> L. var. <i>major</i>	common plantain	X	X
<i>Poa angustifolia</i> L.	Kentucky bluegrass	X	X
<i>Poa annua</i> L.	annual bluegrass	X	X

Scientific Name	Common Name	Steese and White Mountains Subunits	Fortymile Subunit
<i>Poa compressa</i> L.	Canada bluegrass	X	X
<i>Poa pratensis</i> L.	bluegrass	X	X
<i>Poa subcoerulea</i> Sm.	spreading bluegrass	X	X
<i>Polygonum aviculare</i> L.	knotweed	X	X
<i>Polygonum convolvulus</i> L.	black bindweed	X	X
<i>Prunus padus</i> L.	European birdcherry	X	X
<i>Rumex longifolius</i> DC.	garden dock	X	X
<i>Sonchus arvensis</i> L. ssp. <i>uliginosus</i> (Bieb.) Nyman	perennial sowthistle	X	X
<i>Spergularia rubra</i> (L.) J.& K. Presl	purple sand spurry	X	X
<i>Tanacetum vulgare</i> L.	common tansy	X	X
<i>Taraxacum officinale</i> Weber	common dandelion	X	X
<i>Trifolium hybridum</i> L.	alsike clover	X	X
<i>Trifolium pratense</i> L.	red clover	X	X
<i>Vicia cracca</i> L.	bird vetch	X	X
<i>Viola tricolor</i> L.	johnny jumpup	X	X
<i>Lappula squarrosa</i>	European stickweed		X
<i>Medicago falcata</i> L.	yellow alfalfa		X
<i>Potentilla norvegica</i> L.	Norwegian cinquefoil		X
<i>Tripleurospermum perforata</i> (Merat) M. Lainz	scentless false mayweed		X

<sup>a</sup>Species listed are those that occur in the survey area and are listed by AKNHP as non-native plants of Alaska, last updated 2006.

### 3.2.6. Soil Resources

Most soil resources in the planning area are largely in natural condition with minimal human-made disturbance. The planning area is sparsely populated with few commercial facilities or roads, and no large-scale commercial crop, livestock, or grazing activity. Extensive wildland fires during the summers of 2004 and 2005 burned substantial acreage in Interior Alaska. The 2004 fire season was the worst on record in Alaska, approximately 6.5 million acres burned, with the majority of the large wildland fire activity occurring in central and eastern Interior Alaska (National Climatic Data Center, 2004). Minor debris flows and land slides were observed on steep slopes in burn areas. New growth vegetation appears to have increased soil stability in selected areas. Although there are limitations on OHV use, increased hunting and recreational activities have adversely impacted soils in areas near the Steese and Taylor highway corridors. The major soil resource management concerns are soil subsidence, thermokarst, compaction, puddling, and erosion; especially in permafrost areas where the insulating organic material has been severely damaged or removed.

Soils in the planning area have been surveyed on a very broad scale in the *Exploratory Survey of Alaska* (USDA 1979). Most detailed soil surveys for Interior Alaska have been conducted near Fairbanks and Delta along the southwest border of the planning area (USDA 2004, USDA 1973). Soils surveys including ecological site descriptions in the Steese National Conservation Area and White Mountains NRA were begun in 2010 by the Natural Resources Conservation Service (NRCS) at a scale of 1:63,360 (Order 3-4) and the field work is scheduled for completion in 2015. At least three soil orders are found in the planning area: Entisols, Gelisols, and Inceptisols. Brabets et al. (2000) described these soils and their respective suborders in their environmental and hydrologic review of the Yukon River watershed, which encompasses the planning area.

Common parent materials, from which Interior Alaska soils form, include weathered bedrock, lake sediments, glacial deposits, eolian (wind deposits), and alluvium (stream sediments). Extensive deposits of loess from the glacial-fed Yukon and Tanana rivers occur in the planning area. Loess consists mainly of silt and very fine sand transported by wind from exposed sediment deposits of braided rivers. Thickness of loess deposits can exceed nine feet adjacent to rivers and decreases gradually over 10 to 20 miles from the rivers (Mulligan 2005). Isolated masses of ground ice occur in deep loess deposits on terraces and lower sideslopes of hills. In some areas, the formation of deep, steep-walled pits (thermokarst) may be caused by the melting of underground masses of ice. Extensive areas of sand dune deposits occur between the Yukon and Tanana rivers. Widespread alluvial, lacustrine, and eolian deposits occur in the Yukon Flats area.

According to Ping et al. (2006) most Interior Alaska soils are poorly developed because the cold climate impedes most soil-forming processes, except organic matter accumulation, and leads to the formation and preservation of permafrost. Decomposition is extremely slow in cold wet soils; chemical weathering to form clay minerals occurs at a negligible rate; and cryoturbation of soils counteracts typical soil profile development. Soil characteristics tend to vary with topography and slope-aspect. In the uplands, permafrost underlies most of the north slopes and most toe slopes of south-facing slopes. The well-drained and relatively warm soils of upland south-aspect slopes are generally permafrost-free with deeper and more mineral-dominated soils than those on north aspect slopes. In the lowlands, permafrost underlies much of the landscape except major river terraces, alluvial fans, and active floodplains.

Regardless of parent material, the wet and cold conditions found on north-facing slopes and lowlands slow the decomposition rate of organics, resulting in accumulation of organic matter, which insulates and preserves underlying permafrost. Permafrost thickness exceeds 200 feet in selected Fairbanks locations (Williams, 1970). Perennially frozen soil creates many engineering problems. Removal of the insulating surface organic layer for these soils causes thawing in the upper part of the permafrost. This is commonly accompanied by subsidence of the overlying soil. Roads and structures on these soils may settle unevenly. Soils are nearly always saturated in summer in the zone above permafrost; hydrophilic vegetation is prevalent.

## **3.2.7. Special Status Species**

### **3.2.7.1. Introduction**

BLM Special Status Species include species listed or proposed for listing under the Endangered Species Act (ESA) and species which are designated as BLM Alaska sensitive species by the State Director. Currently, there are no Threatened, Endangered, or proposed species which occur in the planning area (Memo from USFWS Fairbanks Field Office to BLM, June 2008). Should any species within the planning area be listed in the future, the requirements of BLM policy (BLM 2008a) will be followed, including the need for consultation under Section 7 of the ESA. Therefore, no further discussion or analysis of this category of Special Status Species is provided.

The emphasis of Special Status Species management by the BLM will be an ecosystem management approach that will attempt to reduce the likelihood that any native species be elevated to BLM sensitive species status. Additionally, this approach will initiate proactive conservation measures that reduce or eliminate threats to existing BLM Alaska sensitive species, to minimize the likelihood of a species being listed under the ESA.

BLM Alaska has utilized the ranking system developed by the Alaska Natural Heritage Program (AKNHP) and The Nature Conservancy, plus an international network of natural Heritage Programs and Conservation Database Centers which assess state and global rarity, for assistance in developing Special Status and sensitive species lists for Alaskan plants and animals. A brief overview of the global and state ranking criteria is given in Table 3.21, “Alaska Natural Heritage Program, Global and State Ranking Criteria ” at the end of this section.

The discussion in these sections is based on the 2010 BLM Alaska Sensitive Species List (IM AK-2010-018) and is focused on those species known or likely to occur in the planning area. The complete list of BLM Alaska sensitive species is found in Appendix K, *BLM Alaska Sensitive Species*.

BLM Alaska Watch List species are species for which data is insufficient to satisfy sensitive species eligibility criteria. They should be emphasized for inventory, monitoring, and research as funding and time allow and should be re-evaluated during subsequent sensitive species list revisions. A few watch species of note are discussed in the following sections.

### 3.2.7.2. Animals

BLM Alaska sensitive and watch animal species that are known or likely to occur in the planning area are listed in Table 3.19 below.

**Table 3.19. BLM Sensitive Species and Watch List Species (2010) Known or Likely to Occur in the Eastern Interior Planning Area**

Type	Scientific Name	Common Name	G Rank <sup>a</sup>	S Rank <sup>a</sup>	List
Fish	<i>Lampetra alaskensis</i>	Alaskan Brook Lamprey	G3Q	S3	Sensitive
Insect, Aquatic	<i>Rhithrogena ingalik</i>	Alaska Endemic mayfly	G1G3	S1S3	Sensitive
Insect, Aquatic	<i>Acentrella feropagus</i> <sup>b</sup>	A mayfly	G3	SNR	Sensitive
Insect, Aquatic	<i>Alaskaperla ovibovis</i>	Alaska Sallfly	G3	SNR	Sensitive
Mammal	<i>Spermophilus parryii osgoodi</i>	Osgood's Arctic ground squirrel	G5T3	S3	Sensitive
Mammal	<i>Sorex yukonicus</i>	Tiny shrew	GU	S3	Sensitive
Bird	<i>Cygnus buccinator</i>	Trumpeter Swan	G4	S3S4B, S3N	Sensitive
Bird	<i>Contopus cooperi</i>	Olive-sided Flycatcher	G4	S3S5B	Sensitive
Bird	<i>Euphagus carolinus</i>	Rusty Blackbird	G4	S3S4B	Sensitive
Bird	<i>Aquila chrysaetos</i>	Golden Eagle	G5	S4B, S3N	Sensitive
Bird	<i>Asio flammeus</i>	Short-eared Owl	G5	S4B	Sensitive
Bird	<i>Dendroica striata</i>	Blackpoll Warbler	G5	S4B	Sensitive
Bird	<i>Limosa haemastica</i>	Hudsonian Godwit	G4	S3B	Watch
Bird	<i>Tryngites subruficollis</i>	Buff-breasted Sandpiper	G4	S2B	Watch
Bird	<i>Gavia stellata</i>	Red-throated Loon	G5	S4BS4N	Watch
Fish	<i>Oncorhynchus tshawytscha</i>	Chinook Salmon (Beaver Creek)	G5	S4	Watch

<sup>a</sup>These rankings are explained in detail in Table 3.21, Alaska Natural Heritage Program, Global and State Ranking Criteria

<sup>b</sup>These species have not been documented in the planning area, but their known distribution suggests they are likely found there.

### 3.2.7.2.1. Sensitive Animals in the Planning Area

#### **Alaskan brook lamprey** *Lampetra alaskensis* G3Q S3

This species is found in the Chatanika and Chena rivers within the planning area, but are not yet known to occur on BLM-managed lands. The collection location in the Chatanika is near the Elliott Highway bridge, which is very close to the Beaver Creek drainage in the White Mountains NRA. The lamprey is a non-parasitic, freshwater species that is gray-brown on the back and white underneath, with a dark blotch on the second dorsal fin and a dark tail (ADF&G 2004). Alaskan Brook Lamprey have blunt teeth and measure five to seven inches as adults. They spawn in spring and summer in shallow areas of streams and sometimes lakes. After spending four years as ammocoetes, these lampreys metamorphose to adults in the fall.

#### **Alaska endemic mayfly** *Rithrogena ingalik* G1G3 S1S3

This insect is known from only from a single specimen collected on Birch Creek about 10 miles upstream of the Steese Highway bridge at mile 147. However, because it is only identified using characteristics of adults (which are not often collected), it likely occurs more widely. Additional inventory is needed. Mayflies are highly sensitive to changes in water quality (e.g., contamination by heavy metals and organic pollutants; changes in pH; and, sedimentation and turbidity) (Gaufin 1973, Milner and Oswood 1989, McCafferty 1998). In the Birch Creek area, mined streams have higher levels of turbidity, settleable solids, percent substrate embeddedness, and nonfilterable residue than unmined streams (Wagener 1984) — all of which can alter water quality.

#### **A mayfly** *Acentrella feropagus* G3G4 SNR

Waltz and McCafferty (1987) list the two locations of this species in Alaska as “Atigua River” (presumably meaning Atigun River) and “Alaska, South Slope, Yukon River System,” which Randolph and McCafferty (2005) place in the Yukon-Koyukuk county. This latter region includes much of Interior Alaska, including the northern portion of the planning area. “South Slope” likely refers to the south slope of the Brooks Range, which is outside the planning area. The ambiguity of these accounts and the lack of inventory leave questions as to whether this mayfly occurs in the planning area. Inventory efforts will be needed to define the distribution and rarity of this species in Alaska and the planning area.

#### **Alaska sallfly** *Alaskaperla ovibovis* G3 SNR.

This rare species of stonefly (an aquatic insect) occurs in northwestern North America in Alaska, British Columbia, Northwest Territories, and the Yukon Territory (Stewart and Oswood, 2006), but is known from few occurrences. In Alaska, it is known from Deering (Seward Peninsula), Logging Cabin Creek (Fortymile River), Moose Creek (near Glennallen), and West Fork Dennison Fork of Fortymile River (Stewart and Oswood 2006).

#### **Osgood's Arctic ground squirrel** *Spermophilus parryii osgoodi* G5T3 S3

This subspecies of the Arctic ground squirrel is known only from the Circle and Fort Yukon areas. It is limited to low elevation open meadows/south facing slopes, and recently burned areas in predominately forested landscape (NatureServe 2009). The subspecies may occur on BLM lands near Circle.

#### **Alaska tiny shrew** *Sorex yukonicus* GU S3

This is a newly described species of shrew endemic to Alaska. It appears widespread but scarce across Alaska. Tiny shrews are found in a wide range of forested and non-forested habitats, with riparian scrub the most common habitat (MacDonald and Cook 2009). Occurrences of this species have been documented in the Twelvemile Summit area of the Steese National Conservation Area and in several locations in Yukon Charley Rivers National Preserve, not far from BLM lands to the north in the Upper Black River subunit.

### **Trumpeter swan** *Cygnus buccinator*

Because of the remote nature of their preferred habitat in Alaska, trumpeter swans have been relatively unaffected by human development in Alaska. During a 2005 census, the swans were found to number over 23,000 statewide (Conant et al. 2007). Trumpeter swans breed widely throughout central and southern Alaska south of the Brooks Range and east of the Yukon-Kuskokwim delta (Mitchell 1994). Trumpeter swan pairs have been observed nesting on sloughs of Beaver Creek in the White Mountains NRA and Birch Creek in the Steese National Conservation Area, as well as on wetlands between Central and the Yukon River. During the 2005 survey of high-potential swan habitat in Alaska (only portions of the planning area), a total of 7787 groups of swans were observed. Approximately 29 groups were observed on BLM lands in the following areas: 18 groups in the Mosquito Flats area in the Fortymile Subunit, three groups near Circle in the Steese subunit, two groups near Circle in the Upper Black River subunit, and six groups in the Black River drainage. Very little of the White Mountains subunit was surveyed.

### **Olive-sided flycatcher** *Contopus cooperi*

This bird breeds at low densities throughout the coniferous boreal and coastal forests of Alaska, including central, southcentral, southeast, and occasionally western Alaska (Armstrong 1995 in ADF&G 2005). They are frequently associated with relatively open boreal forest (Kessel and Gibson 1978) and are often associated with openings such as meadows, muskegs, burns, logged areas and water (such as streams, beaver ponds, bogs, and lakes; Altman 1997 in ADF&G 2005). In Alaska, a population decline of 2.1 percent per year occurred from 1980–2003, based on data from 53 survey routes (AKNHP 2006). The Alaska population is approximately 273,600 birds or about 25 percent of the estimated global population of 1,200,000 (ADF&G 2005). Factors in the decline may include habitat loss or alteration in both wintering and breeding grounds, changes in availability of prey species, exposure to pesticides, and exclusion of fire (Altman and Sallabanks 2000). Habitat concerns include logging, salvage logging associated with beetle infestations, and fire suppression (ADF&G 2005). Two to eight olive-sided flycatchers have been detected annually on two Breeding Bird Surveys conducted along the Steese Highway adjacent to the Steese National Conservation Area and White Mountains NRA (R. Gronquist, pers. comm. 2009) and the bird is found in all subunits.

### **Rusty blackbird** *Euphagus carolinus*

The Rusty Blackbird was found throughout most of mainland Alaska south of the Brooks Range where it is highly dependent upon boreal wetlands for breeding. In Alaska, the bird favors open habitat near water, with a preference for nesting in tall shrubs. The Rusty Blackbird also prefers moist woodland (primarily coniferous), bushy bogs, and wooded edges of water courses (AKNHP 2006).

The Rusty Blackbird has undergone a major rangewide decline in numbers. A North American Breeding bird survey-wide decline of 10.3 percent per year from 1966 through 2004, is mirrored by a 5.2 percent per year decline in Alaska. The loss of wooded wetlands on breeding grounds is

thought to be a major factor in the decline. Habitats in Alaska are generally largely intact and not directly disturbed by development. However, climate change and associated degradation of permafrost and drying of ponds and lakes could result in loss of key breeding habitats. Habitat could also potentially be affected by activities that alter wetland habitats such as placer mining or fire management practices (AKNHP 2006).

### **Golden eagle** *Aquila chrysaetos*

The golden eagle breeds throughout most of Alaska, with the exception of a few places in the far north, and in the southcoastal and southeastern regions of the state. Range-wide, it is found most frequently in open, non-forested or thinly forested habitats (Kochert et al. 2002); it occurs in low densities throughout the planning area. The golden eagle feeds mainly on mammalian prey, but is an opportunistic predator. Principal prey species in Alaska include small mammals such as hares and Arctic ground squirrels (Poole and Bromley 1988). Arctic ground squirrels are absent from most of the planning area, which may limit golden eagle populations. Golden eagles nest primarily in cliffs, but also occasionally nest in trees, on river banks, and on the ground (Kochert et al. 2002). The species is protected by the Bald and Golden Eagle Protection Act. Although little is known of population trends in Alaska, populations in North America are thought to be declining (USFWS 2008c). As a result, regulations being formulated to implement the Bald and Golden Eagle Protection Act will be very strict in limiting take of golden eagles. The USFWS will only authorize programmatic take permits that result in “no net loss to the breeding population” (50 CFR Parts 13 and 22), and no individual take permits are being issued at this time.

### **Short-eared owl** *Asio flammeus*

The short-eared owl is widespread throughout the state in open lowland habitat in summer, except southeast Alaska. In general, any area that is large enough, has low vegetation with some dry upland for nesting, and that supports suitable prey (primarily small rodents) may be considered potential breeding habitat, although many will not have breeding short-eared Owls. The nomadic nature of this species (concentrate in areas and times of high prey abundance) makes them difficult to census. The species has undergone a significant long-term downward population trend: the estimated 1980–2003 trend for Canada was -9.7 percent per year and in the U.S. was -4.3 percent per year. (AKNHP 2008).

### **Blackpoll warbler** *Dendroica striata*

The Blackpoll warbler is common in central Alaska; less common in eastcentral Alaska. Nests predominantly along rivers, streams, or bogs in deciduous forests and tall shrub thickets (especially *Salix alaxensis* and *Alnus incana*) sometimes with a sparse spruce (particularly in central Alaska) or mixed spruce-paper birch overstory. Also inhabits ecotones between treeline taiga and alpine or coastal tundra. Breeding density highest in riparian habitats in western Alaska (AKNHP 2006). Alaska population has declined by over 50 percent since 1980 (about 2.9 percent per year). Species is declining throughout broader geographic range, but declines are most pronounced on breeding range in Alaska and Canada. Causes of the decline are uncertain. Greatest threat in Alaska is collision with communication towers, wind turbines, and tall buildings, particularly in coastal areas. (AKNHP 2006)

### **BLM Alaska Watch List Species of Note**

#### **Beaver Creek Chinook salmon** *Oncorhynchus tshawytscha*

The population of Chinook salmon in Beaver Creek was designated as a BLM Alaska sensitive species in 2004, due in part to concerns about decreasing salmon population sizes in the Yukon River. The Alaska Board of Fisheries identified Yukon River Chinook salmon as a stock of yield concern in 2000 and Chinook runs in recent years continue to be below average (Volk et al. 2009). In 2001, Beaver Creek was removed from the list of waters closed to subsistence fishing, which also contributed to BLM's move to list Beaver Creek Chinook salmon as a sensitive species. Beaver Creek Chinook salmon are one of the smaller populations in the upper Yukon River basin, and this may make them more susceptible to overharvest and adverse environmental factors than larger populations (Collin et al. 2002). Subsistence use of Chinook salmon in Beaver Creek is not expected to increase substantially. Sport fishing uses may increase somewhat, but sport fishing opportunities are limited to those who have access to remote portions of Beaver Creek. Only very small numbers of Chinook salmon have been documented in areas of the Beaver Creek watershed that are currently accessible by road.

### 3.2.7.3. Plants

The 2010 BLM Alaska Sensitive Species List includes sensitive plant species found within Alaska, all of which are either ranked S1, S2 or S3 by the AKNHP. Many species on this list do not occur within the panning area. There are 18 BLM Alaska sensitive plant species documented in or immediately adjacent to the planning area, and may occur on BLM lands. Twelve of these have been documented to occur on BLM lands through on-the-ground inventory.

Table 3.20 below lists plants on the BLM Alaska Sensitive Species List known to occur in the planning area. The highlighted species in this table have been documented on BLM lands in the planning area. A complete list of BLM Alaska sensitive species can be found in Appendix K, *BLM Alaska Sensitive Species*.

**Table 3.20. BLM Alaska Sensitive Species and Watch List Species Plants**

Species	Common Name	Global Rank	State Rank	List	Typical or observed habitat <sup>a</sup>
<i>Antennaria densifolia</i>	Dense-leaf Pussetoes	G3	S1S2	Sensitive	Calcareous rocky soils, dryas fellfields and scree from treeline into the alpine.
<i>Claytonia ogilviensis</i>	Ogilvie Mountains Spring Beauty	G1	SP	Sensitive	Fine, calcareous alpine scree; or shale between limestone outcrops (found in Canada within one kilometer of planning area).
<i>Cryptantha shackletteana</i>	Shacklette's Catseye	G1Q	S1	Sensitive	Calcareous gravel barrens and slopes in the Mentasta Mountains, and on non-calcareous rubble slopes, fine scree, and outcrops at Eagle and Calico bluffs.
<i>Douglasia arctica</i>	Mackenzie River Douglasia	G3	S2S3	Sensitive	Dry, rocky steppe bluffs, and on other rocky open habitats; typically alpine but also lower elevations.
<i>Draba murrayi</i>	Murray's Whitlow-grass	G2	S2	Sensitive	Early successional, dry-mesic calcareous sites. Rocky and/or bare soil microhabitats within variety of habitats: South- and north-facing outcrops; open mixed or deciduous forest; steppe bluffs; and, burns.
<i>Draba ogilviensis</i>	Ogilvie Mountains Whitlow-grass	G3	S2	Sensitive	Moist alpine meadows, wet seeps and scree, and in the moist, mossy understory of shrubs in the subalpine. Limestone.
<i>Erigeron yukonensis</i>	Yukon Fleabane	G2G4	S1	Sensitive	Calcareous, stony slopes.

Species	Common Name	Global Rank	State Rank	List	Typical or observed habitat <sup>a</sup>
<i>Eriogonum flavum</i> var. <i>aquilinum</i>	Yukon Wild-Buckwheat	G5T2	S2	Sensitive	Xeric steppe (graminoid) bluffs, rock outcrops, and rubble slopes
<i>Erysimum asperum</i> var. <i>angustatum</i>	Narrow-leaved Prairie Rocket	G5T2	S1S2	Sensitive	Dry, rocky slopes; steppe bluffs; rock outcrops; and in the herbaceous, dry understory of open woodlands.
<i>Montia bostockii</i>	Bostock's Miner's-lettuce	G3	S3	Sensitive	Consistently found shallowly rooted in wet-to-moist mossy depressions within tussock or heath tundra on ridgetops and upper slopes
<i>Oxytropis huddelsonii</i>	Hudelson's Crazy-weed	G3	S2S3	Sensitive	Solifluction soil; rock outcrop on treeline ridge top.
<i>Phacelia mollis</i>	Macbride Phacelia	G2G3	S2S3	Sensitive	Sandy or gravelly sites along roadsides and other disturbed areas; open woods
<i>Lesquerella calderi</i>	Calder's Bladder-pod	G3G4	S2	Sensitive	Open, dry habitats such as screes, rock outcrops, rocky ridgetops, floodplains, dunes, fellfields, and open woodlands. Limestone.
<i>Poa porsildii</i>	Porsild's Bluegrass	G3	S2S3	Sensitive	Alpine moist-to-mesic herbaceous-heath or tussock tundra; often associated with gelifluction lobe fronts or snow melt areas
<i>Ranunculus cammissonis</i>	Glacier Buttercup	G4T3T4	S2	Sensitive	Wet soil on grassy slopes, meadows, terraces, ridges, and in tundra. Found, at least in part, on granite substrates.
<i>Ranunculus turneri</i>	Turner's Buttercup	G3	S2S3	Sensitive	Moist subalpine and alpine tundra and meadows, under open riparian willow, in snow beds, and along moist creek banks
<i>Artemisia laciniata</i>	Siberian Wormwood	G4	S2	Sensitive	Steppe bluffs, open dry woodlands, shrubby rubble slopes. Rarely common in a locality.
<i>Trisetum sibiricum</i> ssp. <i>litorale</i>	Siberian False-oats	G5T4Q	S2	Sensitive	Disturbed, moist site within shrub heath; damp gelifluction hillside.
<i>Douglasia gormanii</i>	Gorman's Douglasia	G4	S3	Watch	Rocky alpine tundra, screes, exposed ridges.
<i>Draba densifolia</i>	Dense-leaf Whitlow-grass	G5	S1	Watch	Gravelly slopes, fellfields, alpine screes, outcrop crevices.
<i>Draba paysonii</i>	Payson's Whitlow-grass	G5	S1S2	Watch	Similar to <i>D. densifolia</i> .
<i>Draba porsildii</i>	Porsild's Whitlow-grass	G3G4	S1S2	Watch	Moist to sometimes drier sites; generally rocky or gravelly, in the subalpine and alpine zones on ridges, slopes, cliffs, ledges, and summits. Habitats include limestone or shale talus, scree, and gravel slopes; moist banks; moist turf sites (incl. slopes); moist gravelly open soil; and grassy meadows. Sites sometimes within boreal spruce forest matrix.
<i>Minuartia yukonensis</i>	Yukon Stitchwort	G3G4	S3	Watch	Dry, open rocky habitats at all elevations such as steppe bluffs, dry rocky slopes, and outcrops.
<i>Oxytropis tananensis</i>		G2G3Q	S2S3	Watch	Open, dry habitats such as subalpine slopes, bluffs, sand dunes, and gravel floodplains.
<i>Podistera yukonensis</i>	Yukon Podistera	G2	S1	Watch	Usually dry rocky screes and rubble slopes at mid elevations and in the alpine. In Yukon also in xeric steppe (graminoid) slopes, sandy blowouts, and open, dry understory of aspen-white spruce forest. Yukon Territory.

Species	Common Name	Global Rank	State Rank	List	Typical or observed habitat <sup>a</sup>
<i>Stellaria dicranoides</i>	Matted Starwort	G3	S3	Watch	Dry rocky ridges, screes, outcrops, alpine fellfields, and Dryas mats; limestone talus and carbonate rocks
<i>Phlox richardsonii</i> subsp. <i>richardsonii</i>	Richardson's Phlox	G4T2T 3Q	S2	Watch	Alpine limestone. Dry mountain slopes and rocky or gravelly alpine tundra.
<i>Saxifraga nelsoniana</i> subsp. <i>prosildiana</i>	Heart-Saxifrage	G5T4	S2	Watch	Grows in a variety of moist habitats, including rocky outcrops, screes, meadows and stream edges throughout montane and alpine zones.

<sup>a</sup>Habitat associations are from Parker et al. (2003), Parker and Herriges (unpublished), Alaska Natural History Program, and NatureServe (2009) species accounts.

### 3.2.7.3.1. Sensitive Plants Known to Occur in the Planning Area

#### *Antennaria densifolia*

*Antennaria densifolia* was first identified in Alaska in the Keele Range near the Alaska-Yukon Territory border during a BLM sponsored inventory in 1991 (Lipkin and Tande 1992). The plant was collected in both 1991 and 2007 at different localities in the Keele Range where it was found to be scattered, but frequent. The only other known Alaskan collections are two locations in the Ogilvie Mountains within Yukon-Charley Rivers National Preserve.

#### *Douglasia arctica* Hook.

*Douglasia arctica* has an East Beringian distribution restricted to east central Alaska and northern Yukon Territory, Canada. The species is known from the Yukon-Tanana Uplands near Eagle Summit, and from Mount Schwatka, Victoria Mountain and VABM Fossil in the White Mountains NRA (Parker et al. 2003). It is found in the Ogilvie Mountains, along the central Yukon and Porcupine river valleys. The species was also found growing on a rocky, dry aspen-white spruce woodland slope in the Little Black River headwaters in a 2008 BLM-sponsored survey.

#### *Erysimum asperum* (Nutt.) DC. var. *angustatum* (Rydb.) Boivin

An East Beringian endemic, *Erysimum asperum* var. *angustatum* is narrowly restricted to east central Alaska and southern Yukon Territory, Canada. *Erysimum asperum* var. *angustatum* was first collected and described under the name *E. angustatum* from Dawson, Yukon Territory (Rydberg 1901). Since then the species has been documented from additional Dawson area sites, from Burwash Creek in southwestern Yukon Territory, and in Alaska from several sites along the central Yukon River valley and the lower portions of its major tributaries in Yukon-Charley Rivers National Preserve. The collection sites of two specimens at the University of Alaska Herbarium labeled from the Porcupine River are uncertain at this time, as the collectors (Howenstein (deceased) and Borron) were working on the Yukon River in Alaska at the time these collections are dated (Rob Lipkin, pers. comm.). Due to the few documented localities, some which lack protective management policies, and its very limited distribution, the current state ranking for the species will not be changed based on these most recent Little Black River collections (Rob Lipkin, pers. comm.). *Erysimum asperum* var. *angustatum* was found on three bluffs in the headwaters of the Little Black River during June 2008. These are the only known locations on BLM-managed lands.

***Montia bostockii*** (A. Pors.) Welsh

This species was found at three South Fork Birch Creek localities (Parker et al. 2003). Most populations consisted of 10 to 70 plants, but one site supported approximately 300 individual plants.

***Oxytropis huddelsonii*** A. Pors.

*Oxytropis huddelsonii* was collected on a rock outcrop along a ridge top at treeline above Yukon Fork Birch Creek headwaters (Parker et al. 2003). A few scattered individuals were found at this single locality.

***Phacelia mollis*** - J.F. Macbr

This is a Beringian endemic, restricted to the unglaciated area of Alaska and Yukon Territory. It is endemic to central-eastern Alaska and the northern Alaskan panhandle and central and western Yukon Territory (Cody 1996). It has been identified in the Fortymile River and Healy Lake watersheds.

***Physaria calderi*** (G.Mulligan & A. Porsild) O’Kane & Al-Shehbaz

Recent locations where *Physaria calderi* has been documented include sites in the Yukon Territory’s Ogilvie Mountains, the northern Yukon Territory’s Richardson Mountains, and Alaska’s Ogilvie Mountains and Keele Range. An East Beringian endemic, it is narrowly restricted to east central Alaska and northern Yukon Territory. Based on 2007 BLM-sponsored collections from the Keele Range, combined with additional collections made in the Yukon Territory, the AKNHP global and state rankings of *P. calderi* were changed in 2008 from G2G3 S1S2 to G3G4 S2. However, due to the species’ restricted distribution, mostly on lands lacking any protective management policies, this revised ranking is not likely to be changed again unless future collections document a significant number of new populations and a total range expansion. A significant portion of the known Alaskan distribution is on BLM lands; *Physaria calderi* was collected at three sites in upper Fort Creek (a tributary of the Salmon Fork Black River) in 2007, near VABM Storm, and also in the Salmon Fork headwaters in 1991.

***Poa porsildii*** Gjaerevoll

*Poa porsildii* appears to be rare in the White Mountains, where in recent years only a single clump has been found. However, in the South Fork Birch Creek area flowering plants were abundant whenever the species was encountered, and some patches were extensive (more than 0.4 ha [one acre]). Until recently, it was known in Alaska only from Lime Peak, Eagle Summit, and Mastodon Dome. It has recently been documented at VABM Fossil vicinity in the White Mountains, the Ogilvie Mountains, and at many localities in central Yukon Territory, Canada.

***Ranunculus camissonis*** L. (Schlechter) L.D. Benson

This rare Beringian endemic species is documented in only a few, widely scattered collections from western Alaska and the Mount Prindle and Lime Peak area in the Yukon-Tanana Uplands.

***Ranunculus turneri*** E. Greene

This species was first described from specimens collected along the Porcupine River near the Alaska-Yukon Territory border (Greene 1892). Additional Alaskan localities where the species has since been documented include St. Lawrence Island, the Cape Thompson area, and Mount Casca

in the Ogilvie Mountains. During a BLM-sponsored inventory in the Keele Range in 2007, *R. turneri* was found at several sites in the vicinity of upper Fort Creek and one population supported several hundred individuals. Of the additional known locations for the species in Alaska and Yukon Territory, only the Mount Casca area populations, within Yukon-Charley Rivers National Preserve, have any protective land management policies. *Ranunculus turneri* was collected at five sites, and observed in a few more sites within the small area inventoried in the Keele Range.

***Artemisia laciniata* Willd.**

In Interior Alaska and Yukon Territory, Canada, *Artemisia laciniata* is known by a few records from steppe bluffs and open dry woodlands along the central Yukon and Porcupine river valleys, and from several sites within the Tanana River valley. During BLM-sponsored surveys, the species was collected on a rubble, shrub-covered slope in the Keele Range in 1991 (Lipkin and Tande 1992), and from a xeric woodland bluff in the Salmon Fork Black River headwaters in 2007.

***Trisetum sibiricum* Rupr. ssp. *itorale* (Rupr.) Rosch.**

This species has a circumpolar, but primarily Asian, arctic distribution. It was collected from a disturbed, moist site within shrub heath along a small drainage below Mount Schwatka in the White Mountains NRA. This species was also collected by Gjaerevoll (1958) on a damp gelifluction hillside near Lime Peak.

**BLM Alaska Watch List Species of Note**

***Draba densifolia***

This species is ranked critically imperiled in Alaska (S1) and is known from a very small area. Many of the known occurrences of this plant in Alaska are on BLM lands in the planning area, including Lime Peak and Mount Prindle areas. Alaska populations of this species are more than 350 miles disjunct from the nearest populations in Canada and may represent unique genetic material.

**Table 3.21. Alaska Natural Heritage Program, Global and State Ranking Criteria<sup>a</sup>**

Global Rank	State Rank
G1: Critically imperiled globally because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or because of some factor of its biology making it especially vulnerable to extinction. Considered critically endangered throughout its range.	S1: Critically imperiled in state because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or because of some factor of its biology making it especially vulnerable to extinction. Considered critically endangered throughout the state.
G2: Imperiled globally because of rarity (6 to 20 occurrences) or because of other factors demonstrably making it very vulnerable to extinction throughout its range. Considered endangered throughout its range.	S2: Imperiled in the state because of rarity (6–20 occurrences), or because of other factors making it very vulnerable to extirpation from the state.
G3: Either very rare and local throughout its range or found locally (even abundantly at some locations) in a restricted range (21 to 100 occurrences). Considered threatened throughout its range.	S3: Rare or uncommon in the state (21–100 occurrences).
G4: Widespread and apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.	S4: Apparently secure in state, but with cause for long-term concern.
G5: Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.	SP: Occurring in nearby state or province; not yet reported in state, but probably will be encountered with further inventory.

Global Rank	State Rank
G#G#: Global rank of species uncertain, best described as a range between the two ranks. G#Q: Taxonomically questionable.	S#S#: State rank of species uncertain, best described as a range between the two ranks.
G#T#: Global rank of the species, and global rank of the described subspecies or variety	
G?: Unranked.	S?: Unranked.

<sup>a</sup>Source: Lipkin and Murray 1997

## 3.2.8. Vegetative Communities

### 3.2.8.1. Ecoregions

Ecoregions are relatively large geographic areas with characteristic and distinct climate, geology, and assemblages of vegetation and natural communities. Lands managed by the BLM in the planning area occur primarily in the Yukon-Tanana Upland Ecoregion, except the Upper Black River Subunit occurs in the North Ogilvie Mountains (higher elevations) and Old Crow Basin (lower elevations) ecoregions. The Natural Resources Conservation Service includes almost all BLM lands in the planning area within the *Interior Alaska Highlands* Major Land Resource Area (NRCS 2004). The climate feature common to the entire planning area is a strong continental climate (cold winters, warm summers with moderate precipitation occurring mostly in summer).

### 3.2.8.2. Community Distribution and Composition

Vegetation in the planning area occurs in characteristic communities or types. The occurrence of the various types across the landscape depends largely on topography, soil, presence of permafrost, and the history of ecosystem processes. A summary of vegetation distribution in the Alaskan boreal forest is provided by Chapin et al. (2006).

Upland and lowland black spruce forests are by far the dominant forest type on BLM lands in the planning area. Black spruce forests tend to occur in open canopy stands on lowlands and north-facing uplands, such as sites with cold and wet soils and typically shallow permafrost. The ground layer is typically dominated by feathermosses. Lichens can be abundant, especially in older stands and in areas with shallow or rocky soils. Common shrubs are willow, green alder, Labrador tea, bog blueberry, and low-bush cranberry. Tree birch and white spruce occur occasionally. Black spruce forests are also highly flammable. Following fire, a black spruce stand may be replaced by a community very similar to the previous forest community, except that black spruce occur only as seedlings and an increase in abundance of herbs, grasses, and shrubs typically occur for a number of years. In drier sites and/or conditions of severe fire (exposed mineral soil), black spruce may be replaced by birch or aspen.

White spruce is found on warmer, more well-drained sites and is also often the spruce species occurring at tree-line. White spruce is a late-succession seral stage which is typically preceded by deciduous forest. Mixed stands of white spruce and aspen or birch are common. Common shrubs in white spruce stands are blueberry, low-bush cranberry, and Labrador tea. Feathermosses often dominate the ground layer and herbs include horsetails and pumpkinberry. In well-drained floodplain sites, white spruce often occurs with balsam poplar (cottonwood) and alder shrub and will replace balsam poplar as succession proceeds. At treeline, white spruce occurs in an open woodland (often mixed with black spruce) with shrub birch and willow understories. Commercial logging in Interior Alaska is focused on white spruce stands on productive sites.

Deciduous forests occur relatively infrequently. Deciduous forests are found most commonly on south-facing slopes or well-drained sites on other aspects. Aspen dominates on the drier, south-facing slopes while birch stands occur on somewhat cooler, moister sites such as east- and west-facing slopes. Aspen stands often have in the shrub layer willow, highbush cranberry, prickly rose, and buffaloberry; and in the herb layer bedstraw, pumpkinberry, and bluejoint grass. Mosses and lichens are typically scarce. If moisture is sufficient, white spruce may establish and dominate in late succession. Birch dominated stands typically have alder, willow, rose, high bush cranberry, and low-bush cranberry as shrubs. Bluejoint grass or horsetail are often the dominant herb, and heavy leaf litter limits moss and lichen cover. Drier birch stands can have scattered white spruce and may be replaced by white spruce in late succession, while wetter sites can contain some black spruce and may be replaced by black spruce. Narrow stands of balsam poplar can occur along larger rivers.

Non-forested lowland bogs occur where shallow permafrost impedes drainage and the soil remains too wet for tree growth. These bogs are dominated by tussock-forming cottongrass (*Eriophorum vaginatum*) or Bigelow's sedge (*Carex bigelowii*). Where shrub cover exceeds 25 percent, they are generally considered shrublands and include shrub birch, Labrador tea, bog rosemary and bog cranberry. Cottongrass tussock tundra occurs on shallow slopes in the uplands as well.

Shrub types occur in a variety of habitats. Shrubs may be abundant in many sites following wildland fire. Willows and alder shrublands often occur in moist draws and along rivers and streams. Alder slopes occur occasionally near treeline. The most common shrubland is dominated by dwarf birch and Labrador tea; it occurs commonly near treeline and also on north facing slopes and areas with little slope or poor drainage. Dwarf birch shrublands often intergrade with open woodland black spruce and tussock tundra.

Above treeline, low shrub grades into the lower-stature dwarf shrub tundra which is typically dominated by bog blueberry, crowberry, low bush cranberry, and bearberry. Lichens and mosses can be abundant. Wet areas above treeline often support herbaceous communities.

Steep south-facing slopes may support steppe-like (treeless) communities. They are dominated by drought-tolerant species of bunch-grasses, sage, and a variety of herbs. Although they occur on a very small proportion of lands, they support a high number of species endemic (limited in distribution to a particular locality) to Alaska or Beringia (an area comprising the Bering Strait and adjacent Siberia and Alaska which was ice-free in past glacial time periods) as well as other species characteristic of the intermountain western U.S. They are sites of typically high species diversity and, due to atypical vegetation, add diversity to the surrounding area. Many of the BLM Alaska sensitive and watch species plants in the planning area, occur on these "steppe" sites. Where not as steep or dry, these south-facing slopes support open aspen forests and also open white spruce or birch.

A variety of plant communities or types can occur in wetlands. Hydrophytic vegetation (vegetation typically adapted for life in saturated soil conditions) is one indicator of wetlands. Shallow permafrost which results in near-surface saturated soils occurs throughout much of the planning area and many Interior Alaska plants are adapted to saturated soil conditions. As a result, large parts of the planning area would be considered wetlands, including much of the black spruce forests in lowlands and north-facing slopes. In addition, many shrublands and tussock tundra communities have saturated soils that would result in their consideration as wetlands.

**Table 3.22. Coverage of Eight General Vegetation Types Within a Study Area Including the White Mountains NRA and Steese National Conservation Area in 2002, as Measured at 184 Randomly Distributed Monitoring Sites Below 2,800 Feet Elevation (Treeline).<sup>a</sup>**

Vegetation Type	Proportion of Sites (percent)
White spruce forest and woodland	16
Black spruce forest and woodland	54
Deciduous forest and woodland	0.5
Spruce and deciduous forest and woodland	6.5
Medium and low shrub	16
Dwarf shrub	1
Tussock tundra	2
Herbaceous (grass/forb, includes recent burns)	4

<sup>a</sup>The area above 3,000 feet, comprised primarily of alpine tundra and rocky barren types, is approximately 20 percent of the study area. In the Fortymile subunit, the area above 3,000 feet is likely a similar proportion. In the Upper Black River, a smaller proportion of the subunit is above 3,000 feet.

### 3.2.8.3. Wildland Fire and Vegetation

Fire regimes in Alaska forest types are generally characterized by low frequency/high intensity fire events. The range of reported fire cycles reported by Viereck (1983) is roughly 40–120 years for black spruce forest and 80 to 150 years for floodplain white spruce. Studies in the White Mountains NRA and Steese National Conservation Area and an adjacent watershed however, indicate longer fire return intervals for both types (Herriges, unpublished data, Fastie et al. 2003). Average forest stand age reported by Collins et al. (2011) in the Fortymile subunit was 101 years.

Northern boreal forests are adapted to wildland fires. Vegetation recovers by sprouting from roots or from seed stored in the forest organic layer after fire. The exact response varies by fire intensity, season, moisture condition and plant species. In general, sites with more severe fire (greater organic layer consumption and more mineral soil exposure) and lower soil moisture are more likely to change from spruce-dominated to deciduous-dominated following fire (Johnstone and Hollingsworth 2007). Some later successional species, especially lichens, will be scarce in post-fire stands for long periods. Lichens, which are important winter forage for caribou and reindeer, typically require 60-to-80 years to reach abundance (Thomas et al. 1996; Joly et al. 2003, Collins et al. 2011). 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 at wildland fire occurrence and the distance to unburned spruce as sources of new seed and/or the presence of dispersal agents.

### 3.2.8.4. Current Condition and Trends

On a broad scale, vegetative communities in this large and relatively inaccessible planning area are largely undisturbed by human activities. Fires have the greatest impact on vegetative communities in the planning area. Local disturbance of riparian communities by placer mining has occurred in some areas and OHV use has created networks of trails in some areas. However, over most of the planning area, it is possible to emphasize protection rather than restoration in managing vegetation and multiple land uses.

#### Wildland Fire and OHV Use

Prior to 1980, it was policy that all wildland fires in the state would be completely and aggressively suppressed. (More recently, in areas assigned the Critical, Full, and Modified fire management options, fire suppression continues to be the primary strategy, while in areas assigned the Limited fire management option, fires are primarily managed for resource benefit.) Much of the planning area is within 100 miles of fire suppression resources located in Fairbanks, Central, Delta, and Tok, and wildland fire suppression likely affected the distribution of seral communities on the landscape. Older seral stages are likely more predominant than they would have been without fire suppression efforts, or at least areas of similar successional stage are likely larger in areal extent due to suppression. A somewhat lower diversity in vegetation types may have been the result.

Wildland fires have become increasingly common in the last few decades. During the years 2004 and 2005 the largest and third-largest total acreages burned in Alaska were recorded. Closed-basin wetlands have been drying in many areas of Alaska (Riordan et al. 2006). Woody vegetation (trees and shrubs) visibly invaded alpine habitats and sedge wetlands in Denali National Park between 1976 and 2005 (Roland 2006). Treeline in areas along the Steese Highway has risen slowly. White spruce in a variety of study sites in Interior Alaska have shown lower radial growth during summers with increasing temperature, presumably due to drought stress (Barber et al. 2000, Lloyd and Fastie 2002). These and other changes are likely to continue and increase in rate with predictions for continued climate warming.

OHVs have created many miles of trails in the accessible portions of the planning area, and new trails are created annually. Much of the planning area is susceptible to impacts from OHV travel. Even a few passes by an OHV can, in many soil and vegetation types, result in long-lasting impacts to vegetation and soil. This then leads to detouring off the trail and subsequent widening of impacts. Although many miles of OHV trail exist in accessible parts of the planning area, the percent of vegetative cover which is impacted is currently still quite small, likely less than 1 percent.

OHV ownership and use has increased substantially since 1986, when the current RMPs for the Steese National Conservation Area and White Mountains NRA were put in place. In addition, the capabilities of OHVs to travel over difficult terrain has changed significantly. Three-wheelers were the most common OHV at that time. A more diverse array of OHVs are now available to users. This has resulted in an increased ability of OHV users to travel cross-country and an increase in the average distance that can be comfortably traveled, resulting in a greater potential for disturbance of vegetation.

### Riparian and Wetland Vegetation

Riparian areas are the areas where land and water meet along stream and lake margins. Wetlands are areas such as swamps or marshes or other areas that remain saturated most of the year. Riparian vegetation improves water quality, rebuilds floodplains that help store water to lessen impacts of floods, stabilizes stream banks, reduces erosion, and improves water storage for groundwater recharge and subsequent increases in base flow for downstream users. Riparian areas, and their associated streams and wetlands, are also indicators of watershed health, as they are among the first landscape features to reflect damage from improper management or natural events within the watershed.

Placer mining has impacted riparian vegetation, especially in the Birch Creek and Fortymile drainages, but has directly affected only a small proportion of riparian vegetation within the planning area.

The BLM has completed riparian assessments for only a few of the approximately 11,000 stream miles in the planning area. However, most of the planning area is remote, and most streams have had no substantial land use activity and are generally assumed to be in proper functioning condition. There are limited areas (estimated at less than 5 percent) of substantial riparian disturbance, typically associated with abandoned placer-mine lands.

Many of the valleys in the Fortymile River, Birch Creek, and Beaver Creek watersheds have been repeatedly mined for placer gold beginning in the late 1800s. Early gold operations often mined the streambed gravels from valley wall to valley wall, with little or no reclamation. Riparian vegetation has partially recovered in some areas. Several miles of stream channel and flood plain in the Birch Creek and headwaters of Beaver Creek watersheds have ongoing reclamation efforts.

Changes in requirements for reclamation of placer mined lands (initiated in 1981) and changes in mining practices and have resulted in generally faster natural revegetation of mined sites. Additionally, the numbers of active mining operations within the White Mountains, Steese National Conservation Area and Fortymile WSR Corridor have decreased since the original RMPs were written in the 1980s. However, much placer-mined land has not recovered functionally or vegetatively.

### **3.2.9. Visual Resources**

#### **3.2.9.1. Current Management Practices**

The current management of visual resources is guided by decisions made in the existing land use plans (BLM 1986a, BLM 1986b, BLM 1980) and river management plans (BLM 1983a, BLM 1983b, and BLM 1983c). These RMPs and river management plans establish general Visual Resource Management (VRM) goals, which are to:

1. Maintain scenic quality by adhering to visual resource management objectives while implementing a program of visual assessment of all surface-disturbing activities, such as, new access trails, mining activities, OHV use, support structures and developments, and recreational facilities;
2. Manage WSR corridors to maintain the natural landscape; and,
3. Manage viewsheds to maintain the natural landscape.

Visual resources have been identified according to VRM classes for the Fortymile, Birch Creek, and Beaver Creek WSR Corridors, the Steese National Conservation Area and the White Mountains NRA. These VRM classes are based on conditions such as scenic quality, viewing distance zones, and viewer sensitivity levels. The VRM class objectives and their descriptions are:

VRM Class I: The objective of Class I is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activities. The level of change to the characteristic landscape should be very low and should not attract attention.

VRM Class II: The objective of this class is to retain the existing character of the landscape. The level of change to the landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes to the landscape must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

**VRM Class III:** The Class III objective is to partially retain the existing character of the landscape. The level of change to the landscape should be moderate. Management activities may attract the attention of the casual observer, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape

**VRM Class IV:** The objective of Class IV is to provide for management activities which require major modifications to the existing character of the landscape. The level of change to the landscape can be high. The management activities may dominate the view and may be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repetition of the basic visual elements of form, line, color, and texture (BLM 1986b).

### 3.2.9.2. Visual Resource Inventory

Visual resource inventory class areas for the planning area were delineated using the process in BLM's Visual Resource Inventory Handbook (H-8410-1). The results of this inventory are described in Appendix D, *Visual Resource Inventory*.

- **Class I:** Approximately 284,000 acres; includes wild river segments of the Fortymile Wild and Scenic River (WSR), Birch Creek WSR, and Beaver Creek WSR.
- **Class II:** Approximately 5,442,000 acres; includes areas in the Steese National Conservation Area and the White Mountains NRA, scenic and recreational segments of the Fortymile WSR.
- **Class III:** Approximately 479,000 acres; includes areas in the Steese National Conservation Area and the White Mountains NRA and some of the planning area outside special conservation areas.
- **Class IV:** Approximately 528,000 acres; includes most of the planning area outside special conservation areas.

**Table 3.23. VRM Classes in the Eastern Interior Planning Area**

VRM Class	Existing Management Class Acres	Inventory Class Acres (BLM lands)
<b>Fortymile Subunit</b>		
Class I - Designated Wild segments	145,000	145,000
Class II	No management classes assigned	1,878,000
Class III		6,000
Class IV		47,000
<b>Steese Subunit</b>		
Class I	69,000	69,000
Class II	64,000	1,136,000
Class III	1,075,000	25,000
Class IV	0	45,000
<b>Upper Black River Subunit</b>		
Class I	No management classes assigned	0
Class II		1,478,000
Class III		448,000
Class IV		435,000
<b>White Mountains Subunit</b>		
Class I	69,000	70,000
Class II	507,000	950,000
Class III	428,000	0
Class IV	0	0

### 3.2.9.3. Current Conditions

The planning area includes many areas that possess a high degree of scenic quality and a high level of visual sensitivity. In general, high scenic quality results from the diverse and distinct topography, geology, botany and cultural history. The area possesses scenically unique views and river ways; rare and unusual geological formations of glacial and periglacial features as well as tors and outcrops; a diversity of vegetation ranging from alpine tundra to closed spruce forests; and historic structures. Visually sensitive areas are the result of visitor interest and public concern for the visual resources of a particular area, the high degree of visibility to the public for a particular area, the level of use of an area by the public, and the type of visitor use that an area receives.

Primary areas that possess both outstanding scenic quality and high visual sensitivity include, but are not limited to: the Steese National Conservation Area, White Mountains NRA, Beaver Creek WSR, Birch Creek WSR, and Fortymile WSR, Research Natural Areas, and Pinnell Mountain National Recreation Trail. Areas of high scenic quality and visual sensitivity associated with travel corridors include the Alaska, Elliott, Richardson, Steese, Taylor, and Top of the World highways. Portions of the Steese, Richardson, Taylor and Top of the World highways are also state scenic byways. The planning area contains thousands of miles of river trails, OHV trails, and foot trails that are traveled as scenic routes, some of which are nationally recognized.

The planning area is still primarily a natural landscape where humans have not substantially changed the scenic quality. However some areas were modified by human activities. These are called cultural modifications. Cultural modifications can blend in with or stand out from the surrounding landscape. While these areas introduce modifications to the landform, they also provide places of use and special interest or key observation points from which to evaluate the sensitivity levels.

Buildings are generally the most visible cultural modification. Buildings exist in scattered communities, particularly along the road system. Homestead areas, mining claims, Native allotments, and isolated cabins can be found throughout the planning area. Most of the buildings outside a community are in relative harmony with the landscape in that they are small, made of local materials, and have primarily natural based colors.

Other modifications include the highways, and other roads. Airstrips can be found in the Fortymile, Steese, and Upper Black River Subunits. While the profile of an airstrip is low, landform changes are introduced by brown colors in predominantly green vegetation and more regular lines than the surrounding irregular vegetation. A few capped oil and gas exploration wells exist within the Upper Black River Subunit. However, given their small footprint and with most either flush with the landscape or consisting of a marker pipe less than six feet tall, these modifications are very hard to see from a distance of more than a couple hundred feet.

OHV trails exist in all subunits to varying degrees. Summer travel in the Upper Black River Subunit is primarily by watercraft along rivers. However, snowmobile trails and seismic lines can be seen from elevated locations. Summer ATV travel has occurred in the Fortymile, Steese, and White Mountains subunits with many trails or travel routes being visible for long distances from elevated locations.

Each Scenic Quality Rating Unit was evaluated to determine its scenic quality and is rated as Class A, B or C. Results are summarized in Table 3.24, "Scenic Quality Rating Units, Classes, and Sensitivity Ratings in the Planning Area" below. See also Appendix D.

- Class A: SQRU has a great deal of visual variety, contrast, and harmony.
- Class B: SQRU has a moderate amount of visual variety, contrast, and harmony.
- Class C: SQRU has little visual variety, contrast, and harmony.

Visual sensitivity levels are a measure of public concern for the scenic quality of an area. Areas identified as sensitive include known travel routes, especially state scenic byways, areas of human habitation, areas of traditional use, Native allotments, and area identified through Benefits Based Management studies (Fix 2007; Stegman et al. 2008). Numerous locations in the planning area have potentially high visual sensitivity because area residents and visitors view the natural landscape as very important, and have a high level of interest and sensitivity to changes to the natural landscape. There are three levels of overall sensitivity: High (H), Medium (M) and Low (L).

**Table 3.24. Scenic Quality Rating Units, Classes, and Sensitivity Ratings in the Planning Area**

Scenic Quality Rating Unit (SQRU)	SQRU Class	Visual Sensitivity Rating	Fortymile Subunit	Steese Subunit	Upper Black River Subunit	White Mountains Subunit
Alaska Range – Central and Eastern Part (40)	A	M	X <sup>a</sup>			
Kokrine-Hodzana Highlands (16)	B	M				X
Northern Foothills (41)	A	M	X			
Northway-Tanacross Lowlands (13)	B	M	X			
Ogilvie Mountains (10)	A	M	X		X	
Porcupine Plateau (8)	B	M			X	
Rampart Trough (15)	C	M				X
Tanana-Kuskokwim Lowland (26)	C	L	X			
Tintina Valley (11)	B	L	X			
Yukon Flats Section (14)	C	M	X	X	X	
Yukon-Tanana Upland (12)	A	M	X	X		X
<b>Visual Resource Inventory Class</b>			<b>I-IV</b>	<b>I-IV</b>	<b>II-IV</b>	<b>I-II</b>

<sup>a</sup>X indicates presence of the SQRU within the subunit

### 3.2.9.4. Trends

The number of tourists visiting Alaska is increasing. Within the planning area, visitor use is increasing through recreational and vehicular use. Many tourists to Alaska come to visit Denali National Park and Preserve, Yukon-Charley Rivers National Preserve and the National Wildlife Refuges adjacent to the planning area and then remain in the Interior to recreate on BLM lands. These recreational activities contribute to the cumulative impact on visual resources.

The use of OHVs, trail use, and dispersed camping could have long-term cumulative impacts on visual resources. Mineral exploration and development are expected to increase within the planning area and contribute some additional impacts to visual resources. Long-term trends for impacts to visual resources are:

- Conflicts between OHV users and hikers, sightseers, campers, hunters, river floaters, and others who seek a high-level of scenic quality.

- Increasing dispersed camping impacts, often as overflow from the nearby National Parks and Wildlife Refuges, could impact VRM through increased surface and vegetative disturbance;
- Increasing OHV-related recreational use could cause visual impacts within the planning area;
- Increasing recreation-related development, and mineral exploration and development use could cause visual impacts within the planning area;

### 3.2.10. Water Resources

#### Surface Water

Approximately 11,000 miles of streams and rivers and 14,000 acres of lakes and ponds are present on BLM lands in the planning area. Timing and duration of stream flow are weather dependent; there are no major reservoirs or diversions on Interior Alaska streams. The planning area is entirely within the upper portion of the Yukon River basin. Major rivers in the planning area are listed in Table 3.25, "Discharge and Water Quality Parameters of Major Streams in the Planning Area" and shown in Map 82. Headwaters of the Yukon River, Nation River, Kandik River, Salmon Fork of the Black River, and Porcupine River originate in remote areas of the Yukon Territory, Canada. Tributaries of the upper Yukon and Tanana rivers emanate from glaciated areas and carry heavy loads of sediment during summer.

Except for suspended sediment in the Yukon and Tanana rivers, water quality is generally good to excellent, with low dissolved solids, dissolved oxygen near saturation, and neutral to moderately basic pH. Water temperatures during summer are typically less than 14 degrees C. During winter, small streams are often frozen to the bed by mid-winter. Flows in larger rivers are usually at a minimum in March and maximum in June, July, or August. Winter flows are generally about 20 percent of peak summer flows. Ice on lakes and larger streams is normally about four feet thick by March. Runoff containing sediment and/or other pollutants may occur during spring snowmelt and heavy rainfall events in summer and fall. Abandoned placer gold mine operations, with little to no reclamation, increased OHV use on unauthorized trails, and runoff from wildfire areas contribute minor to moderate excess sediment to local streams during summer.

Three streams in the planning area were included in the National Wild and Scenic Rivers System by ANILCA (P.L. 96-478): the Fortymile River, Birch Creek, and Beaver Creek. River segments within the Fortymile WSR Corridor (Map 102) were designated as "wild," "scenic," or "recreational." Approximately 126 miles of upper Birch Creek and 127 miles of upper Beaver Creek were classified and designated as "wild" river segments. By classifying Birch and Beaver creeks and portions of the Fortymile as "wild" river segments Congress mandated that these river segments "be managed to be free of impoundments and generally inaccessible except by trail, with watersheds or shorelines primitive, and waters unpolluted...representing vestiges of primitive America." About 77 miles of Birch Creek flows through the Steese National Conservation Area where Congress identified Birch Creek as a special value for the area.

Stream segments not meeting water quality standards for assigned uses for one or more pollutants are placed on the Section 303(d) list of water-quality impaired bodies, as required by the Federal Clean Water Act. Several tributaries in the Birch Creek drainage are listed in Section 303(d) as impaired waters, because they exceeded water-quality criteria for turbidity (ADEC 2008a). Upper Birch Creek is the only stream on BLM-managed lands on the State of Alaska's 303d list of impaired waterbodies. The EPA issued a total maximum daily load (TMDL) for total suspended solids to meet water-quality standards for turbidity in Upper Birch Creek of 20 mg/L.

The BLM, in cooperation with the U.S. Geological Survey (USGS), has been monitoring daily stream flow and periodic water quality measurements since 2008 on placer-mined streams including upper Birch Creek and Nome Creek. The intent is to determine if water quality and water chemistry downstream of previously mined areas are in compliance with ADEC water quality standards. Preliminary results indicate that at moderate to low stream flows, mined streams now typically meet ADEC water quality standards. Some sections of stream channel in Birch Creek and Nome Creek have ongoing reclamation efforts.

The four planning subunits are associated with four watersheds; the Black River watershed, the Steese National Conservation Area-Birch Creek watershed; the White Mountains NRA-Beaver Creek watershed; and the Fortymile River watershed. The current condition of water quality in these watersheds, as well as other Yukon River tributaries, is generally good (Table 3.25, "Discharge and Water Quality Parameters of Major Streams in the Planning Area"), based on available data. Water quality parameters of temperature, pH, DO, and conductivity are well within State of Alaska water quality standards. Many of the water courses within the planning area flow through private, Native corporation, state, and other federally managed lands. In many cases the BLM can only address water quality-related issues that arise from activities on BLM-managed lands.

**Table 3.25. Discharge and Water Quality Parameters of Major Streams in the Planning Area**

Site Name	Date (m/d/yyyy)	Agency	Discharge (ft <sup>3</sup> /s) <sup>a</sup>	Water Temp (degrees C.)	pH Standard Units	Dissolved Oxygen (mg/L) <sup>b</sup>	Specific Conductivity (µS/cm) <sup>c</sup>
Fortymile River	7/24/2007	BLM	4,450	13.8	7.76	9.38	139
Yukon River at Eagle	6/11/2002	USGS	183,000	13	8.1	9.6	182
Nation River	6/13/2002	USGS	2,670	11.9	7.96	9.9	116
Kandik River	6/15/2002	USGS	2,330	10.4	7.41	11.1	111
Charley River	6/16/2002	USGS	2,020	11.2	7.51	10.8	79
Salmon Fork Black River abv Kevinjik	6/13/1991	BLM	1,414	11	8	--	189
Black River	6/20/2002	USGS	6,180	13.3	7.68	9.5	134
Porcupine River	8/28/2002	USGS	38,183	9.9	7.66	10.4	187
Chandalar River	6/22/2002	USGS	10,700	9.9	7.89	11.3	250
Birch Creek above 12 mile Creek <sup>d</sup>	9/24/2007	BLM	77	2.41	7.66	11.6	177
Upper Mouth Birch Creek	6/21/2002	USGS	883	14.4	7.53	9.2	114
Lower Mouth Birch Creek	6/23/2002	USGS	1,670	14.1	7.85	11.5	126
Beaver Creek at Big Bend	8/21/2008	BLM	948	6.78	7.3	10.87	40
Beaver Creek Mouth	9/3/2002	USGS	2,537	10.1	7.63	11.6	154
Hodzana River	9/3/2002	USGS	365	10.7	7.71	9.8	141
Dall River	9/4/2002	USGS	206	9.8	7.32	10	104

Site Name	Date (m/d/yyyy)	Agency	Discharge (ft <sup>3</sup> /s) <sup>a</sup>	Water Temp (degrees C.)	pH Standard Units	Dissolved Oxygen (mg/L) <sup>b</sup>	Specific Conduc- tivity (μS/cm) <sup>c</sup>
Yukon River near Stevens Village	9/4/2002	USGS	253,000	11.3	7.8	9.9	213
<b>ADEC Standard</b>				<b>&lt; 15</b>	<b>6.0 - 8.5</b>	<b>&gt; 4.0</b>	<b>750</b>

<sup>a</sup>ft<sup>3</sup>/s = cubic feet per second

<sup>b</sup>mg/L = milligrams per liter

<sup>c</sup>μS/cm = micro Siemens per centimeter

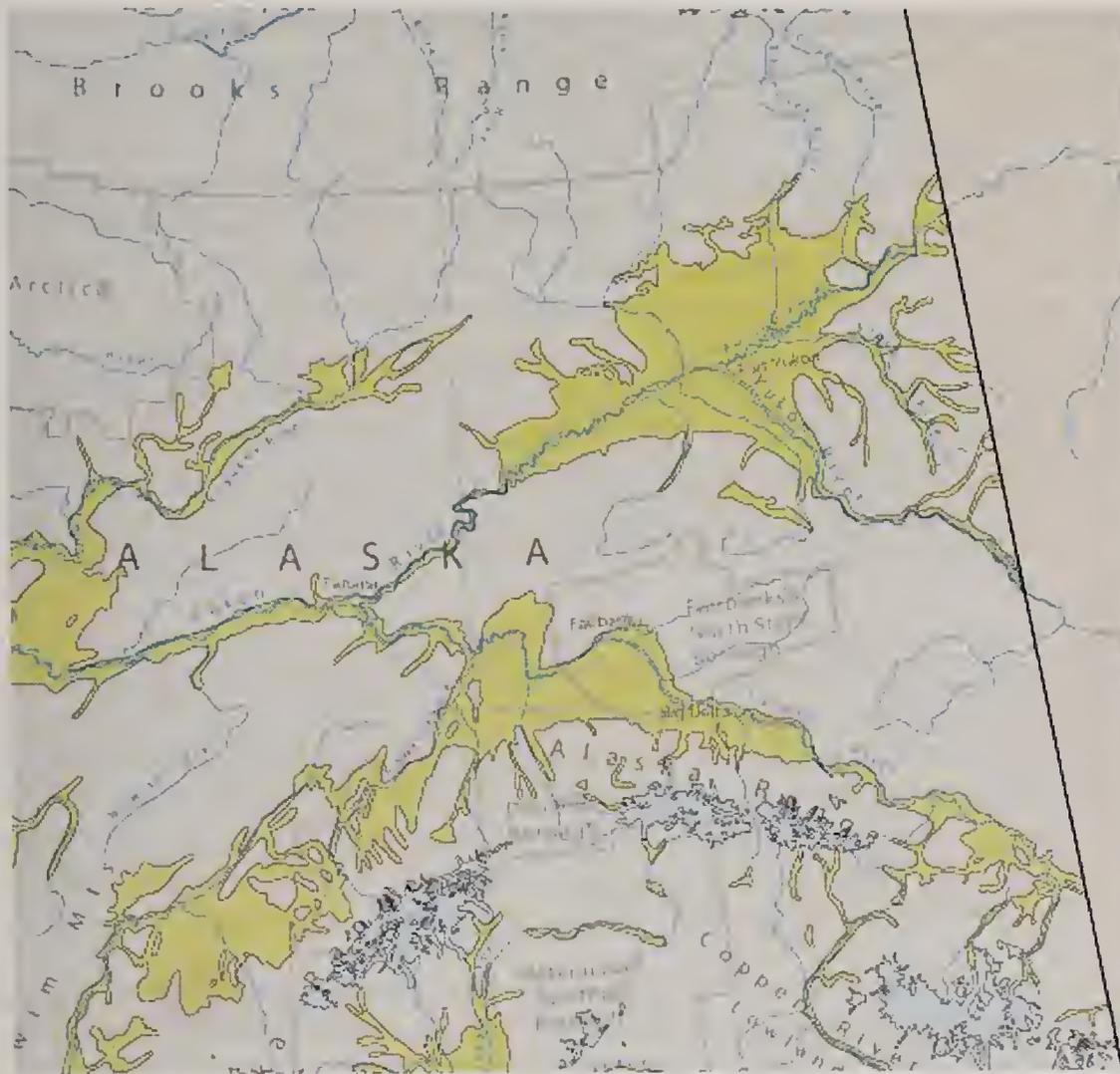
<sup>d</sup>Birch Creek above 12 Mile Creek is Sec. 303(d) listed for sediment

## Groundwater

Groundwater is an important source of water in Interior Alaska because surface waters are frozen or covered with ice for much of the winter and major rivers, including the Yukon and Tanana, transport heavy loads of glacial silt during the summer, making the water unsuitable for household use. About 50 percent of Alaska's population and 90 percent of the state's rural residents depend primarily on groundwater for public supplies (ADEC 2008b).

Unconsolidated deposits of sand and gravel that were deposited as alluvium or glacial outwash or both form the most productive aquifers in Interior Alaska (Miller et al. 1999). In major watersheds these deposits comprise thick aquifers that yield large quantities of good quality water to wells. In many smaller upland and mountain valleys, limited groundwater is available in alluvium beneath permafrost or in unfrozen alluvium beneath or adjacent to riverbeds. Anderson (1970) found water levels in the Tanana River aquifer near Fairbanks were tied to river and stream recharge. As a result, groundwater levels in the alluvial aquifers are generally at a seasonal high in late summer or early fall and then decline over the winter. The groundwater level generally reaches a seasonal low during late winter months, March or April, normally the period of lowest stream discharge.

The frozen ground blocks the downward percolation of rainfall or meltwater, and thus restricts recharge to sub-permafrost aquifers. Where the permafrost table is shallow, it can perch water near the land surface and promote rapid runoff to streams. Permafrost also blocks the lateral movement of groundwater and acts as a confining unit for water in sub-permafrost aquifers. Natural discharge of water confined beneath the permafrost is possible only through unfrozen zones that perforate the permafrost layer (Miller et al. 1999).



Coarse-grained alluvial and glacial-outwash deposits (displayed in yellow) form the most productive aquifers in Interior Alaska (Modified from Miller et al. 1999)

### Figure 3.2. Major Alluvial Aquifers of Interior Alaska

Factors that locally affect the presence and thickness of permafrost include soil and rock type, relief, slope aspect (steepness and the direction which the slope faces), vegetation, snow cover, and the presence of surface-water bodies or flowing groundwater. An important aspect of Interior Alaska alluvial aquifers is that the warming effect of large streams, rivers, and lakes may extend to a depth of several hundred feet and result in local areas where permafrost is thin or absent (Miller et al. 1999). Beneath small shallow lakes or creeks that completely freeze during the winter, permafrost is usually present only a few feet below the bottom of the surface-water body. Williams (1970) found that the local occurrence of permafrost was strongly influenced by the thermal effect of rivers and lakes and caused recorded differences in permafrost thickness of as much as 400 feet over a horizontal distance of only a few hundred feet. At Fort Yukon, for example, shallow wells dug in unfrozen gravel along the riverbank provided the only source of groundwater until 1963. Holes that had been drilled to depths of 300 to 400 feet in frozen alluvium just east of the village were unsuccessful. Most of the groundwater wells in the Yukon River villages, from Canada to the Bering Sea, are along the riverbank where the warming effect of the river affects the thickness of frozen ground (Williams, 1970).

Most of the groundwater in unconsolidated deposits is suitable for domestic uses with moderate or minimal treatment. Locally, the most common treatment problems in groundwater systems are for naturally occurring concentrations of arsenic and antimony (Mueller et al. 2001), and iron,

and manganese in excess of the recommended federal drinking-water standards (ADEC, 2008b). 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 (Cederstrom, 1963).

Knowledge of regional and local variations in permafrost distribution is important in locating groundwater sources and in understanding the hydrology of specific sites. Human activities can affect the local thickness of permafrost because changes in ground surface temperature of only a few degrees C. can change permafrost thickness. Removing natural vegetation and its insulating effect in the process of clearing land causes increased solar absorption, a rise in surface temperature, and thinning of permafrost. Prolonged climate warming would contribute to permafrost degradation and increased groundwater recharge, storage capacity, movement, and discharge in the planning area. Alternatively, prolonged climate cooling where the average annual ground-surface temperature was below freezing, would result in permafrost forming and extending downward until the heat gained from the earth raised the local temperature above the freezing point.

In view of projected climate warming and increased global demand for fresh water, Alessa et al. (2011), noted that Alaska is a relatively water-rich region of the world and its role in future international water markets may be significant. They suggest the state's exceedingly long coastline provides ample locations for establishing ice-free export infrastructure that would make it possible to ship water in large quantities. Various options for increasing supply to the Southwest have been considered, including that of building a freshwater subsea pipeline to transport water from Alaska to California (U.S. Congress, 1992).

At present only a small proportion of the freshwater in the planning area, as well as in Alaska in general, has been developed or modified. Substantial water resource development is not expected in the reasonably foreseeable future because a majority of the planning area is remote, with little or no road access, and no expectation of large-scale industrial development.

### 3.2.11. Wilderness Characteristics

There are no Congressionally-designated Wilderness areas or wilderness study areas in the planning area. The BLM inventoried lands in the planning area for wilderness characteristics and found that 6,677,000 acres has wilderness characteristics (BLM 2011a). This inventory is incorporated by reference. A summary of the inventory can be found in Appendix F, *Wilderness Characteristics Inventory*.

In order to qualify as having wilderness characteristics, the areas must meet the following criteria:

- The appearance of naturalness
- Outstanding opportunities for solitude or primitive or unconfined recreation
- Roadless areas with a minimum size of 5,000 acres, or meet one of the size exceptions

**Table 3.26. Wilderness Characteristics Inventory in the Planning Area**

Subunit	Inventory Acres <sup>a</sup>	Has Wilderness Characteristics (acres)	No Wilderness Characteristics (acres)	Has Wilderness Characteristics (percent)
Fortymile	2,075,868	2,034,942	40,926	98
Steese	1,292,551	1,269,750	22,801	98
Upper Black	2,361,421	2,357,581	3,840	99.8

Subunit	Inventory Acres <sup>a</sup>	Has Wilderness Characteristics (acres)	No Wilderness Characteristics (acres)	Has Wilderness Characteristics (percent)
White Mountains	1,020,282	1,014,463	5,819	99
<b>Total</b>	<b>6,750,122</b>	<b>6,676,736</b>	<b>73,386</b>	<b>99</b>

<sup>a</sup>Acres in this table are not updated to reflect recent land conveyance

### 3.2.11.1. Fortymile Subunit

Approximately 2,035,000 acres in 12 inventory units were found to have wilderness characteristics (Appendix F, *Wilderness Characteristics Inventory*). The only lands that do not contain wilderness characteristics are parcels of less than 5,000 acres which do not meet the size criteria and mined areas. Active and historic mining areas in Dome Creek, Fortymile River, South Fork Fortymile, Franklin Creek, Uhler Creek, Mosquito Fork, Walker Fork, and Wade Creek are lacking in naturalness.

Although there are four major roads in the subunit: the Taylor Highway, Top of the World Highway, Alaska Highway and Tok Cutoff, BLM lands are mostly roadless and have had very limited human intrusion. Other than the highways, there are only a few roads on BLM lands, most accessing mining claims. Additionally, most of BLM lands are not near the highways. Although there are many federal mining claims in the Fortymile watershed, many of these claims have not been developed and are still natural in appearance, or have been reclaimed. Overall, most lands in the Fortymile Subunit are natural in appearance, having been primarily affected by the forces of nature, and contain generally minimal evidence of people's work.

Outstanding opportunities for solitude exist in the Fortymile River watershed, especially during low river use periods. Recreationists floating on one of the many rivers or hiking cross-country would be unlikely to encounter any evidence of humans, including sight or sound, except for the area near the Taylor Highway. Visitors are easily able to avoid the sights, sounds and evidence of other people. The overall size and remoteness of these lands provide opportunities for primitive and unconfined recreation. River users on the "wild" segments of the Fortymile WSR experience outstanding recreational float-boating on whitewater in a primitive setting.

Lands with wilderness characteristics in the Fortymile subunit include portions of the Fortymile Wild and Scenic River. Currently all lands in the subunit are withdrawn from the mining and mineral leasing laws. The subunit is managed according to the Fortymile MFP (BLM 1980) and the Fortymile River Management Plan (BLM 1983a) which do not address wilderness characteristics. Other than in the Fortymile River Corridor, there are no OHV designations. Primary uses of lands with wilderness characteristics include valid existing mining claims, subsistence hunting, and dispersed recreation.

### 3.2.11.2. Steese Subunit

Approximately 1,270,000 acres in the Steese Subunit were found to have wilderness characteristics (Appendix F, *Wilderness Characteristics Inventory*). These can be grouped into three general areas for the purposes of discussion: the North Steese, the South Steese, and lands near the village of Circle.

Approximately 522,000 acres in three inventory units in the North Steese, including the North Steese, Pinnell Mountain, and Pinnell Mnts. South units, were found to have wilderness characteristics. The only lands that do not contain wilderness characteristics are active mining

claims in Bachelor Creek. Although parts of Bachelor Creek and Preacher Creek have been staked for mineral development, few of these claims have been developed. There are a number of abandoned and void claims along American Creek, Preacher Creek, Loper Creek, and Willow Creek. Many of these claims have never mined or have revegetated, resulting in a natural appearance. There are no roads in the North Steese, however there is evidence of OHV travel. OHV routes occur in the upper Preacher Creek area and are noticeable to varying degrees, depending on vegetation, terrain, and viewing elevation.

Overall, the area is generally natural in appearance, having been primarily affected by the forces of nature, and contains generally minimal evidence of people's work. The North Steese units retain their primeval character. Due to the remoteness of the area, there are outstanding opportunities for solitude and primitive types of recreation. This isolation provides exceptional opportunities for wilderness experiences. Recreationists hiking cross-country would be unlikely to encounter any evidence of humans, including sight or sound. Hikers on the Pinnell Mountain National Recreation Trail experience outstanding scenic vistas of high mountain terrain in a primitive setting with very few encounters with other people.

Approximately 707,000 acres in four inventory units in the South Steese, including the Birch Creek, North of Birch Creek, Harrison Creek, and Wolf Creek units, were found to have wilderness characteristics. The only lands that do not contain wilderness characteristics are active mining claims on Fryingpan Creek, Harrison Creek, North Fork Harrison Creek, Clums Fork, and Volcano Creek, and the roads accessing these areas. There are a few roads in the South Steese area, including the Fryingpan Creek and Harrison Creek-Portage Creek roads, both north of Birch Creek. The rest of the area is roadless. Some ATV routes occur in the area and are noticeable to varying degrees, depending on vegetation, terrain, and viewing elevation. Local residents and visitors to the area have traveled by motorized vehicle (primarily snowmobiles) over parts of the area, particularly near Central. Many of the creeks have been staked for mineral development but only a few have been actively mined and the overall character is that of a natural, undisturbed landscape, with very few obvious signs of modern human influence or presence. As in the North Steese, there are a number of abandoned and void claims. Many of these claims were never mined or have revegetated, resulting in a natural appearance. Remote cabins located along rivers and creeks remain from past mining activities are in various stages of deterioration, and are generally screened from view. The South Steese units retain their primeval character.

Due to the remoteness of the area, there are outstanding opportunities for solitude and primitive types of recreation. This isolation provides exceptional opportunities for wilderness experiences. Recreationists hiking cross-country would be unlikely to encounter any evidence of humans, including sight or sound. Floaters on Birch Creek experience outstanding recreational float boating on whitewater in a primitive setting.

The Circle Area inventory units, encompass 40,000 acres. These lands are roadless, although there are likely a few OHV routes and winter trails, given their proximity to Native corporation lands and the Village of Circle. These lands are generally natural in appearance, having been primarily affected by the forces of nature, and contain generally minimal evidence of people's work. Overall, the units in this area retain their primeval character. Due to the remoteness of the area, there are opportunities for solitude and primitive types of recreation.

Lands with wilderness characteristics in the Steese subunit include the Birch Wild and Scenic River, the Steese National Conservation Area, and two Research Natural Areas. Currently all lands in the subunit are withdrawn from the mining and mineral leasing laws. The subunit is

managed according to the Steese RMP (BLM 1986a) and the Birch Creek River Management Plan (BLM 1983b) which do not address wilderness characteristics. OHV use is limited by weight and season of use. Primary uses of lands with wilderness characteristics include undeveloped, valid existing mining claims, subsistence hunting, and dispersed recreation.

### **3.2.11.3. Upper Black River Subunit**

Approximately 2,357,600 acres in three inventory units Black River Unit (including Upper Kevinjik Creek) and Black River Scattered Parcels Unit, were found to have wilderness characteristics (Appendix F, *Wilderness Characteristics Inventory*). These units encompass all of the Upper Black River Subunit (Map 4), except one parcel east of Circle that is less than 5,000 acres.

These lands have had very limited human intrusion due to remoteness and lack of access. There are no roads. Although there are likely a few winter trails, especially near the village of Circle. Remote cabins located along various rivers are generally used as seasonal dwellings for subsistence fishing camps. There are a few Native allotments located primarily along rivers. Other facilities found in the southern portion the subunit include a few airstrips and brushed lines that remain from past oil and gas exploration. Scars of this past activity are still noticeable in some areas, especially from the air. This limited evidence of human use is substantially unnoticeable and the area has been affected primarily by the forces of nature and has retained its primeval character.

Outstanding opportunities for solitude and primitive and unconfined recreation exist throughout the area. These opportunities are largely attributed to the extreme remoteness of the area. Recreationists floating on one of the many rivers or hiking cross-country would be unlikely to encounter any evidence of humans, including sight or sound. Visitors are easily able to avoid the sights, sounds and evidence of other people. This isolation provides exceptional opportunities for wilderness experiences.

Currently all lands in the subunit are withdrawn from the mining and mineral leasing laws. There is no existing land use plan. Primary uses of lands with wilderness characteristics include subsistence hunting and fishing, and dispersed recreation.

### **3.2.11.4. White Mountains Subunit**

Approximately 1,014,500 acres in the White Mountains inventory unit was found to have wilderness characteristics (Appendix F, *Wilderness Characteristics Inventory*). This inventory unit encompasses all of the White Mountains NRA except for the developed area in Nome Creek Valley. It also includes adjacent lands in the Wickersham Dome area, except for the parking lot and trailhead area.

The overall character of the White Mountains unit is that of a natural, undisturbed landscape, with few obvious signs of modern human influence or presence. There are approximately 220 miles of maintained multiple-use winter trails, 11 public use cabins, two trail shelters, and scattered historic cabins, primarily in the southern half of the unit. There is evidence of OHV travel, both summer and winter. This limited evidence of human activity is substantially unnoticeable and the area has been affected primarily by the forces of nature and has retained its primeval character.

Many outstanding opportunities for solitude and a primitive and unconfined recreation experience exist. There are no developed trails in the northern half of the unit. Beaver Creek provides an

outstanding opportunity for non-motorized boating. Recreationists hiking cross-country would be unlikely to encounter any evidence of humans, including sight or sound. These opportunities are largely attributed to the remoteness of the area and the limited trail density.

Part of the Nome Creek valley does not have wilderness characteristics. It is accessed by the Nome Creek road, which connects to the Steese Highway, via the U.S. Creek road. Besides a major access road, the area contains two developed campgrounds, and a BLM administrative site. There is also evidence of significant historic mining activity in Nome Creek, including tailings piles from dredging.

Lands with wilderness characteristics in the White Mountains subunit include the Beaver Wild and Scenic River, the White Mountains NRA, and three Research Natural Areas. Currently all lands in the subunit are withdrawn from the mining and mineral leasing laws. There are no valid existing claims on lands with wilderness characteristics. The subunit is managed according to the White Mountains RMP (BLM 1986b) and the Beaver Creek River Management Plan (BLM 1983c) which do not address wilderness characteristics. OHV use is limited by weight and season of use. The primary use of lands with wilderness characteristics is recreation, including both motorized and non-motorized activities.

### **3.2.12. Wildland Fire Ecology and Management**

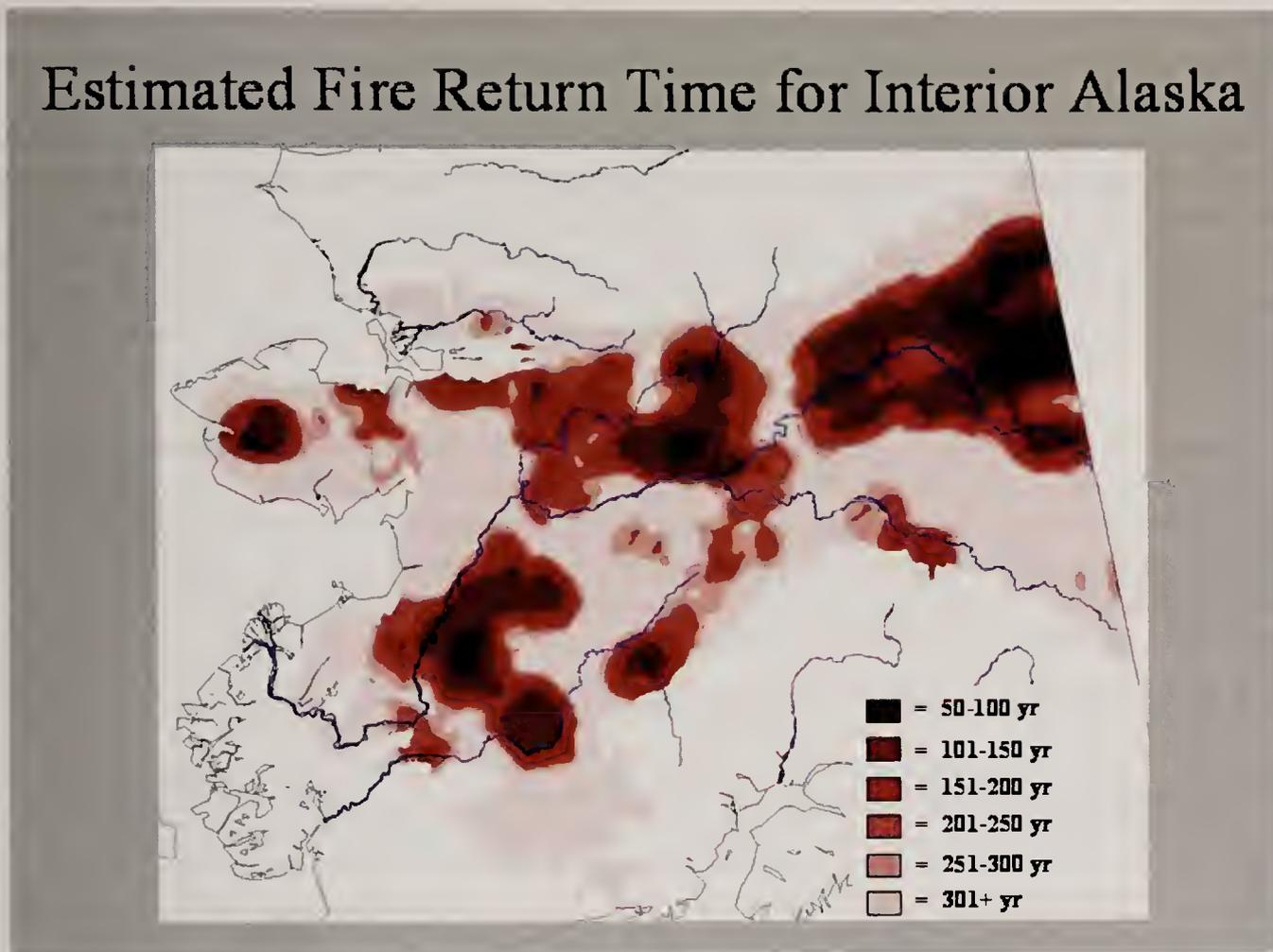
Fire is an important natural mechanism of change in the planning area. Wildland fire is an essential ecological process that maintains and achieves a range of vegetative communities. The vegetation communities in the planning area have evolved with fire, resulting in their current composition and structure. While the distribution and dominance of a particular species in any given area may have changed as climate has fluctuated, fire-dependant species have been represented in the planning area for at least the last 6,500 years (Hu et al. 1993).

#### **3.2.12.1. Fire Occurrence**

A fire history dataset, containing perimeters for large wildland fires reported by the BLM from 1950 to the current year, is maintained for the planning area and updated yearly by the BLM Alaska Fire Service. The numbers of wildland fires and acres burned in the planning area from 1950 to 2014 are 3,433 wildland fires and 16,860,900 acres (Map 86). Of these fires, 265 had their point of origin on BLM-managed lands, and 34 were human-caused (the remaining 231 were lightning-caused or unknown). Human-caused fires typically occur near villages and towns, along roads, or near rivers where human presence is highest. Due to land ownership patterns, human-caused fires in the planning area rarely occur on BLM-managed lands.

The majority of the wildland fires occurring in the planning area are caused by lightning. From mid-June through late July, thunderstorms start wildland fires when environmental conditions facilitate natural ignition. Lightning can occur as early as April and as late as September, however 99 percent of all lightning strikes occur May through August, while 91 percent occur in June and July.

The fire return interval is the number of years between two successive fire events at a specific site. Within the planning area, fire return intervals may range from 50 to 300 years (Figure 3.3).



**Figure 3.3. Estimated Fire Return Intervals for Interior Alaska**

Source: T.S. Rupp. University of Alaska-Fairbanks, Joint Fire Science Project LAI-02-007 (unpublished): 2002.

### 3.2.12.2. Fire Regime Condition Class

Fire Regime Condition Class (FRCC) is a standardized tool for describing the degree of departure from reference condition vegetation, fuels, and disturbance regimes (Hann et al. 2003). Fire regime describes the patterns of fire occurrences, frequency, size, and severity in a give ecosystem. The vegetation types in the planning area have been categorized into biophysical settings (BpS), described in Hann et al. (2003). Biophysical settings are based on geographic area, physical setting, and vegetation community. Physical characteristics include climate, geology, geomorphology, and soils. Vegetation includes native species and successional stages found under the best understanding of the historic range of variation, including disturbances. Each biophysical setting also has distinct ecological processes associated with it, notably fire frequency, severity, and size (Hann et al. 2003).

Condition class is combined with fire regime to determine a FRCC. There are three possible FRCC classifications: FRCC 1 (low departure), FRCC 2 (moderate departure), and FRCC 3 (high departure). FRCC is further defined by a relative measure of the degree of departure from the natural fire regime. There are three classes of departure (condition class) for each fire regime. Condition Class 1 is defined as being within the natural range of natural variability of vegetation characteristics. Condition Class 2 is a moderate departure from the natural fire regime, and

involves a moderate risk of losing key ecosystem components. In Class 2, the fire return intervals have departed from natural frequencies by one or more return intervals. This can be either an increase or decrease in the fire frequency. There are moderate changes in one or more of the following ecological components: vegetation characteristics, fuel composition, fire type, or other associated disturbances. Condition Class 3 is a high departure from the natural fire regime. In this class fire regime has been substantially altered from its natural range and there is a high risk of losing ecosystem components. Fire frequencies have departed from natural frequencies by multiple fire return intervals. Dramatic changes can occur in one or more of the following ecological components: vegetation characteristics, fuel composition, fire type, or other associated disturbances.

Fire suppression occurred in the planning area for more than fifty years. Large areas of the planning area were in the Full and Modified Management Options up until 10–15 years ago (1990s). Currently most of BLM-managed lands are in the Limited Management Option (Map 14). A fire regime and condition class assessment was completed for the planning area using Landfire data and the FRCC Mapping Tool at [www.landfire.gov](http://www.landfire.gov) (GRS 2008). The results of the assessment are shown in the table below.

**Table 3.27. Fire Regime Condition Class for the Planning Area**

Fire Regime Condition Class (FRCC)	Percent of Planning Area	Percent of BLM Lands
FRCC1	68	49
FRCC2	22	44
FRCC3	9	0
Unclassified	1	7

Two thirds of planning area and half of BLM lands are in FRCC1. Nearly one quarter of the planning area and half of BLM-managed lands are in FRCC2. Areas classified as FRCC3 include lands with mining activity or rock slide areas with sparse vegetation. These do not represent significant acreage. There are almost no FRCC3 areas on BLM-managed lands. Unclassified areas cannot be evaluated and include bodies of water, rock, and snow and ice.

The large amount of FRCC2 in the planning area is due to two factors associated with the black spruce biophysical settings. The first factor is the presence of large homogeneous stands of mature black spruce located along the Steese, Richardson, and Alaska highways, and along the Yukon River. Due to land ownership and proximity to roads and communities, these lands are being managed under the Full and Modified Fire Management Options (e.g., providing a higher level of fire suppression). These are not BLM-managed lands.

The second factor is large areas of mixed FRCC2 and FRCC1 scattered throughout the planning area, much of it on BLM-managed lands. Most of these lands have been moved out of higher protection categories (Full or Modified) in the last 10–15 years (1990s and 2000s) and are now in the Limited Fire Management Option. Partially as a result of these management option changes, large acreages burned in the last decade (2000s).

Past attempts at fire exclusion in these areas affected the vegetation characteristics used in the FRCC model, by rearranging the succession allocations. In other words, fire suppression changed the normal seral class distribution in black spruce. More acres are now in the early and late seral stages than would be expected if these areas had been subject to a natural fire regime. This has resulted in the classification of these areas as FRCC2.

The number of biophysical settings in the planning area are too numerous to display. A complete breakdown of the biophysical settings and succession allocations for each biophysical setting can be found in “Fire Regime Condition Class Assessment for Eastern Interior Alaska” (GRS 2008). Table 3.28 below shows one of the black spruce biophysical settings as an example. The reference condition displays the distribution of seral stages that would be expected in the Boreal Mesic Black Spruce Forest under a natural fire regime. The modeled condition displays the current distribution of seral stages. The amount of black spruce in Classes C and D is much lower than expected. Similarly, the amount of black spruce in Classes A and E is much higher than expected. This indicates a significant departure from the natural fire regime.

**Table 3.28. Example of a Biophysical Setting**

Biophysical Setting (Bps)	Bps#	Seral Stage (Age Class)				
		Class A (percent)	Class B (percent)	Class C (percent)	Class D (percent)	Class E (percent)
Boreal Mesic Black Spruce Forest - Boreal						
Reference Condition	16041	5	15	30	30	20
Modeled Condition	16041	9.22	28.58	3.61	12.53	46.06

If left in the Limited Fire Management Option, which allows for a more natural fire regime, these areas will move from a FRCC2 to a FRCC1 over time.

**3.2.12.3. Fire Behavior**

In Alaska, the BLM uses the Canadian Forest Fire Danger Rating System (CFFDRS) for both fire danger and fire behavior predictions. The vegetation in the planning area has been classified into the CFFDRS fuel types in the following table.

**Table 3.29. Fuel Types in the Planning Area**

Fuel Type (code)	Fuel Type (Percent Planning Area)	Fire Intensity
Matted or Standing Grass (O-1)	22	Generally low to moderate
Boreal Spruce (C-2)	34	Often moderate to extreme
Spruce Lichen Woodland (C-1)	8	Generally moderate to high
Boreal Mixedwood (M-1/M-2)	35	Low to moderate
Water, glaciers, and snowpack	1	None

Matted or Standing Grass O-1: The fire behavior would be low to moderate burning intensity with low to moderate rates of spread and flame lengths. Under extended drought conditions with strong winds and low relative humidities, this fuel type can exhibit high to extreme rates of spread and high intensity burning. Tussock tundra communities may burn with a higher intensity, rate of spread, and flame length if there is a large component of dead standing grass. The severity of burn depends on the amount of moisture in the organic layer. Most fires will be low severity surface fires; however, long period of dry conditions can produce fires that remove some to the entire organic layer, resulting in moderate to high severity fires.

Boreal Spruce C-2: This fuel type is made up of moderate to very dense stands of black spruce with a very deep organic layer. It usually has a large component of volatile shrub species, such as dwarf birch or Labrador tea in the understory. Organic layer depth is usually one foot, but can be

as deep as two feet. This fuel type routinely exhibits moderate to extreme burning intensities and flame lengths, and moderate rates of spread. The fuel type burns as a dependant crown fire and almost always has a portion to the entire canopy involved. While it does not exhibit the extreme rates or spread of the grass fuel models, it will move at speeds up to two miles an hour. Combined with the intensities and flame lengths generated, this fuel type can be very volatile, even under what would otherwise be considered moderate environmental conditions. Upland white spruce is also in this fuel type. While it does not burn as often and needs drier conditions to burn, it may exhibit the same extreme fire behavior as black spruce. Fires in riparian white spruce are very rare; during most burning conditions these communities slow a fire's progress. To burn, white spruce require extreme drought or stand degradation due to disease or over maturity.

Spruce Lichen Woodland C-1: The C-1 fuel type is the less volatile than the C-2 fuel type. It has a black spruce component, but the trees are more widely spaced and the organic layer is shallower (two to four inches) than in the C-2 fuel type. Additionally, it usually does not have volatile shrub species in its understory. It exhibits moderate to high burning intensities and flame lengths, and will generate slightly faster rates of spread than the C-2 fuel model. Rates of spread are moderate to high. It will also involve the crown, but because of fewer trees, the intensities and flame lengths are lower than in the C-2 type. Fires range in severity from just surface fuel consumption to severe fires that consume the entire organic layer.

Boreal Mixedwood M-1/M-2: The M-1/M-2 fuel type is a mix of hardwoods and spruce. Hardwoods found with white spruce are either aspen or birch. Aspen and black spruce can be found on colder sites. Surface fuels are primarily leaf litter. This fuel type is prone to surface fires before green-up. Early season fires may or may not kill the trees. In late summer when drought conditions exist, fires have a smoldering phase that consumes the entire organic layer after the surface fire passes. These fires usually kill and tip over all the trees in the burned area. Fires do not burn in this fuel type after green-up or when drought conditions are absent, and during these conditions, boreal mixedwood areas may be used as safety zones. This fuel type is scattered throughout the planning area except in areas of high elevation.

#### **3.2.12.4. Fire Policy**

The overriding priority for all wildland fire actions is firefighter and public safety. Once people have been committed to an incident, these human resources become the highest value to be protected.

DOI Manual 620, Wildland Fire Management (DOI 1998), directs the BLM to provide fire suppression services on all DOI-managed and Native lands within Alaska. The BLM has implemented this direction by creating the Alaska Fire Service which provides wildland fire suppression services in support of management plans on DOI-managed lands and on those lands that require protection under ANCSA.

All other fire management activities such as fire planning, education and prevention, use of prescribed fire, fuels management, emergency stabilization and rehabilitation, establishing initial suppression response strategies, and setting emergency closures priorities are the responsibility of the Eastern Interior Field Office.

In 2005, the BLM developed a Land Use Plan Amendment for Wildland Fire and Fuels Management for Alaska (BLM 2004b, 2005c) which identifies land use and resource objectives,

wildland fire suppression options, and fuels (vegetation) management activities. The amendment applies until such time as new or revised RMPs are completed.

The Alaska Interagency Wildland Fire Management Plan (2010) provides a statewide, coordinated, cost-effective, landscape scale approach to fire management. This plan and its supporting documents contain a description of the local environmental and socioeconomic conditions, natural and cultural resources, fire history and behavior, and local subsistence activities. It also provides a consistent interagency approach to operational procedures and the identification and prioritization of values-to-be-protected. The plan defines four fire management options (Critical, Full, Modified, and Limited).

The four management options are shown in the following table and on Map 14. The designation of a management option pre-selects initial strategies (management response) to a wildland fire; responses range from immediate and aggressive suppression to periodic surveillance. More detailed information is contained in the Alaska Interagency Wildland Fire Management Plan (BLM 2010).

**Table 3.30. BLM Alaska Fire Management Options**

Fire Management Option	Intent	Management
Critical	Protect areas where there is a threat to human life, inhabited property, designated physical developments, and structural resources designated as National Historic Landmarks	Highest priority for assignment of available suppression resources to exclude fire from the area or site.
Full	Protect cultural and historical sites, uninhabited private property, natural resource high-value areas, and other high-value areas that do not involve the protection of human life and inhabited property.	Priority is below Critical for available suppression resources to suppress fires at the smallest reasonably possible acres.
Modified	Balance acres burned with suppression costs and accomplish land and resource objectives. Strategies are based on an annual conversion date.	Priority for assignment of available suppression resources is below Full. Suppression efforts vary: when risks of large fires are high, the initial response to a fire is analogous to Full without the intent to minimize acres but to balance acres burned with suppression costs. When the risks are low, the appropriate response to a wildland fire is analogous to Limited.
Limited	Allow fires to burn under the influence of natural forces within predetermined areas to accomplish land and resource management objectives. Estimated costs of suppression efforts are a factor.	Surveillance to observe fire activity and to determine if site-specific values or adjacent higher priority management areas are compromised. Site-specific actions when necessary to protect human life and site-specific values.

Fire Management Option designations are based on the values to be protected as well as land and resource management objectives. These management strategies are currently implemented in the planning area. Management options are reviewed yearly and adjusted to ensure resource goals and objectives are being met.

**Table 3.31. Fire Management Options in the Planning Area (2015)**

Fire Management Option	Total Lands in Management Option (acres)	BLM Lands in Management Option (acres)	General Description of Lands
Critical	428,000	5,000	Majority is in and around villages; under the ownership of village and regional corporations; protects areas of human habitation
Full	5,080,000	49,000	Majority surrounds critical management option areas near villages; ownership of those lands is mostly village and regional corporations; high resource values
Modified	2,571,000	169,000	Low resource value; surrounds Full option; few values at risk
Limited	22,853,000	6,510,000	Low resource value; areas where fire is considered beneficial; few values at risk
Unplanned	16,000	0	A small portion of the landscape is not assigned a Fire Management Option.

Some areas within the Fire Management Options have specific site designations of Critical, Full, Avoid, and Non-sensitive to highlight special concerns, such as structures, cultural and paleontological sites, small areas of high resource value, and threatened and endangered species habitat. These site designations provide more specific guidance for small sites.

Sites designated as “Critical” and “Full” are to be protected from wildfire and generally include all structures (i.e., national historic landmark or permanent residence) meeting criteria in the BLM Alaska Wildland Fire Structure Policy (IM no. AK-2007-033) described below.

Sites designated as “Avoid” are areas where fire suppression efforts should be avoided and effects from suppression efforts minimized because of detrimental effects from wildland fire suppression activities. All aircraft should be restricted from these areas. An “Avoid” site may include endangered species or their habitat, or a cultural or prehistoric site.

The BLM Policy for Structure Protection defines the protection criteria for structures, and criteria for establishing historic value for structures if those values had not been determined prior to a fire event.

### 3.2.12.5. Fuels Management

To date, prescribed burns or other fuels treatment projects have not been implemented in the planning area on BLM-managed lands. Fuels treatment projects require activity level plans and an environmental analysis. An ANILCA Section 810 analysis may also be appropriate. Management of wildland fires for resource benefit is allowed in the planning area.

### 3.2.12.6. Smoke Management

Alaska Department of Environmental Conservation (ADEC) is responsible for declaring air episodes and issuing air quality advisories, as appropriate, during periods of poor air quality or inadequate dispersion conditions. After the ADEC develops a State Implementation Plan for regional haze, additional fire tracking and emission management actions may be required. Under state law, all agencies, corporations, and individuals that burn 40 or more acres of land require written approval from ADEC prior to burning. The Enhanced Smoke Management Plan

developed by ADEC outlines processes to help ensure that prescribed fire activities minimize smoke and air quality problems. It also address elements required by the EPA's Interim Air Quality Policy on Wildland and Prescribed Fire (EPA 1998).

### **3.2.12.7. Fire Prevention**

Human-caused wildland fires are infrequent in the planning area and most occur near villages and towns. Of the 265 wildland fires with a BLM point of origin between 1950 and 2014, only 34 were human-caused.

## **3.3. Resource Uses**

### **3.3.1. Forest and Woodland Products**

#### **3.3.1.1. Current Level and Location of Use**

The majority of the planning area is forested. However, black spruce (*Picea mariana*) compose a significant portion of the forested area and offer limited commercial value. There are several species that have the potential for commercial value depending on the market conditions: white spruce (*Picea glauca*), paper birch (*Betula papyrifera*), aspen (*Populus tremuloides*), and balsam poplar (*Populus balsamifera*). Pure stands of a single species are rare; mixed stands of hardwood and conifers are common. Tree diameters vary widely through a stand, which makes maximum utilization difficult. In most stands, over 75 percent of the trees are not large enough to utilize as saw logs or house logs. In order to maximize the use of the fiber from these forests, an integrated mill with multiple processing capabilities would be necessary.

The current level of use for timber and forest products in the planning area is limited. Most managed lands with forest resources are located in remote areas with poor access. Nearly all harvest that is occurring is for personal use; including firewood, house logs, and edible forest products. In the past 30 years, only 15 Small Timber Sales, 10 free-use Timber Permits, and five Forest Product Sales have been issued in the planning area. The amount of undocumented harvest for subsistence use within the planning area may exceed that which is permitted.

A number of small communities and isolated residence are found within the planning area. These people often rely, to some extent, on local timber products for building and heating. Generally these needs are met from much more economically feasible harvest areas on state and private lands. BLM has continued to acknowledge and entertain rural needs for timber products but has experienced little demand based on feasibility.

#### **3.3.1.2. Anticipated Demand for Use**

The demand for timber products on BLM-managed lands within the planning area is expected to climb slowly in the foreseeable future. The current increase in fossil fuel prices and interest in alternative fuel sources (including bio-fuels) will likely drive much of this increased demand. The number of small local mills in and around Fairbanks, Delta, and Tok has increased by about five in the past decade, to the current level of about 25. Some of these mills have recently upgraded their facilities to include kilns and planers. Large mills, including the pulp mills in Southeast Alaska, appear to be on the decline along with the overall export of forest products from Alaska.

To date, timber sales on State lands have been able to adequately meet current demand in Interior Alaska with over half of all their timber sale offerings going unsold.

An increase in the use of wood stoves and wood fired boilers, especially in the Fairbanks area, has increased the demand for firewood. This increase is due to higher heating fuel prices and to some extent a perceived increase in firewood availability after record wildland fires in 2004 and 2005. The demand on BLM-managed lands has been limited mostly due to access and feasibility but some people have requested permits to harvest firewood while they are participating in other activities such as recreation and hunting. The demand for firewood in some of the smaller communities such as Central, Eagle, and Chicken will not likely change much.

The issuance of permits for commercial use of forest products (e.g., mushrooms or berries) is not expected to change much in the future. After the Tok Fire in 1990, a substantial harvest of mushrooms occurred. After the big wildfire year of 2004, there was significant interest in harvesting mushrooms, but no significant crop materialized. With a sizeable portion of BLM-managed lands burned in recent times and an unpredictable post-fire mushroom crop, demand should only be modest and sporadic related to fire season activity. An increase in the demand for commercial harvest of wild berries may occur in the future. Recent studies have shown positive health benefits from these fruits and this may drive that demand. As with timber resources, access to forest product harvest areas on BLM lands would continue to be very limited.

### **3.3.2. Land Tenure**

#### **3.3.2.1. Disposal Actions**

Discretionary disposal actions (i.e., exchange, airport conveyances, Recreation and Public Purposes (R&PP) sales, or FLPMA sales) are usually initiated in response to public requests or application. These actions result in transfer of title and lands from the public domain. Most R&PP sales include revisionary clauses to return the lands to the public domain, if the land is no longer used for the purposes conveyed. FLPMA sales and exchanges do not include reversionary clauses and are generally final.

Non-discretionary disposals such as Native and state conveyances, and Native allotments are not subject to the planning process.

Under the Alaska Statehood Act, the State of Alaska is entitled to receive 104 million acres of federal land. ANCSA requires the transfer of 45 million acres of public land to Alaska Native corporations. Approximately 1.4 million and 1.1 million acres of BLM lands in the planning area are State- and Native-selected, respectively (Table 1.1, "Surface Management Responsibilities and Status"). Final conveyance priority lists for Native and State selections have been submitted to the BLM. At the present time Doyon, Limited, has overselected by more than one million acres and the state has overselected 25 percent on a statewide basis. Some of the selected lands will remain in federal ownership over the long-term. State-selected lands in the Upper Black River Subunit are ranked as priority level 14. This is the lowest priority classification available and it is likely that these lands will remain under BLM-management.

The Native Allotment Act (43 U.S.C. § 270–1 through 270–3, 1970) and the Alaska Native Veterans Allotment Act (43 U.S.C. § 1629g, as amended) allow for the transfer of up to 160 acres of land to eligible Alaska Natives if they occupied the land on August 31, 1971. These are called

Native allotments. There are some Native allotment applications in the planning area that have not been finalized. However, no new applications can be filed.

Finalization of conveyances to the State of Alaska, Native corporations, and individuals (Native allotments) are ongoing. Unselected lands in the planning area are currently retained for public use. Any selected lands which remain after all entitlements are fulfilled, will also generally be retained for public use. However, tenure adjustments, including sale or exchange, may be made in order to meet management needs (such as disposing of isolated parcels).

The needs of local communities will be considered and may also be met by lease or sale under the Recreation and Public Purposes (R&PP) Act (43 U.S.C. 869 et seq.). Although no exchanges, sales, or R&PP disposals have been made in recent years, there is one existing R&PP lease in the planning area.

Section 203 of the Federal Land Policy Management Act (FLPMA) establishes criteria under which public lands may be considered for disposal. In general, all such proposals are to be reviewed under the criteria established by FLPMA. There are no pending FLPMA sales in the planning area.

### **3.3.2.2. Acquisitions**

Section 205 of FLPMA authorizes the acquisition of real property, by purchase, exchange, donation, or eminent domain, where it is consistent with the mission of the department and departmental land use plans. The Eastern Interior FO has recently acquired one private inholding within the Beaver Creek WSR corridor. No other acquisitions are being pursued at this time.

### **3.3.2.3. Exchanges**

43 CFR subpart 2200 regulates the procedures for the exchange of public lands for non-federal lands and interests. No exchanges have been made or are pending at this time. However, approximately 15,000 acres of State land located within or adjacent to the Steese National Conservation Area have been identified for future acquisition (BLM 1986a).

## **3.3.3. Land Use Authorizations**

Public lands in the planning area are open to leases, permits and rights-of-way (ROWs). Applications and proposals are addressed on a case-by-case basis. Surface-disturbing and disruptive activities associated with all types of authorizations and/or development are subject to appropriate mitigation. Although there are six transportation corridors identified in the current plans, ROWs outside of these corridors are not prohibited (section 3.3.3.2 Access Corridors).

On average, approximately three to five ROWs, six 2920 Land Use Permits, and 18 to 20 Long-Term Camping (Land Use) Permits in support of nearby state mining claims are issued each year in the planning area.

Existing guidance for the authorization of trapping cabins is found in the Alaska Supplement to BLM Manual 2920 dated 11/2/87 and IM 2012-022.

“It is the policy of the State Director, Alaska, that cabins may be authorized or recommended for lease in accordance with existing law and regulations on BLM lands in conjunction with

legitimate uses of the land. Cabins may be authorized by permit, only if the value of the structure can be amortized over the period of the permit. 43 CFR 2920.1-1(b).”

Most, if not all, of the current authorizations for cabins are permits issued for trapping cabins. There are no BLM authorizations for Special Use or Subsistence Use Cabins within the planning area.

Communication sites are authorized under 43 CFR 2800 and Title V of FLPMA. At the present time there are four such authorizations within the planning area. Requests for communication site authorizations have been few; however, given the ever increasing demand for reliable communications, it seems reasonable to expect that more requests for communication site authorizations will be received in the future.

### **3.3.3.1. Unauthorized Use or Trespass**

BLM’s policy and guidance for dealing with trespass is found in BLM Manual 9232 – Realty Trespass Abatement (dated August 14, 1989). The manual states, in part, that the policy of the BLM is to: ensure that all appropriate realty-related use, occupancy, or development of the public lands is properly authorized under the FLPMA, the Mineral Leasing Act, or other appropriate law; and attempt to resolve the trespass administratively before resorting to civil or criminal procedures for resolution. At the time of this writing, there were approximately 80 known, suspected, or potential cases of trespass (unauthorized use, development or occupancy) within the planning area.

### **3.3.3.2. Access Corridors**

Two transportation corridors are identified in the White Mountains NRA (BLM 1986b). One corridor crosses upper Nome Creek from U.S. Creek Road and extends into the vicinity of Champion Creek. This corridor is intended to provide recreational access to the ridge complex leading to the Mount Prindle area and the highland country. The other corridor begins at the NRA boundary near the Steese Highway and extends to lower Nome Creek. The intended purpose of this corridor is to provide access to a put-in point on Nome Creek which provides access to floatable water on Beaver Creek. Both corridors could also be used to provide access to existing and possible future mineral development (Map 19).

Four transportation corridors are identified in the Steese National Conservation Area; two in the North unit and two in the South unit (Map 19). In the North Steese, one corridor follows the existing Montana Creek trail to Preacher Creek. The other corridor extends from the end of the Porcupine Creek Road to Loper Creek. In the South Steese unit, both corridors were identified to provide access to the south side of Birch Creek; one at Great Unknown Creek and one at Portage Creek/Buckley Bar. Both of these corridors follow existing trails into the Birch Creek WSR Corridor, and both cross the river. The Frying Pan Creek Road was constructed partially within the Great Unknown Creek Transportation Corridor.

In accordance with Section 1107 of ANILCA, any authorized transportation system within the Birch Creek WSR Corridor must be compatible with wild river values and shall be constructed in a manner that does not interfere with or impede stream flow or transportation on the river. Location and construction techniques will be selected to minimize adverse effects on scenic, recreational, fish, and wildlife and other values of the river area.

No other transportation corridors have been identified within the planning area.

### **3.3.4. Minerals**

#### **3.3.4.1. Leasable Minerals**

Leasable minerals are defined by the Mineral Leasing Act as leasable solid and leasable fluid minerals. Leasable solid minerals include coal, oil shale, native asphalt, phosphate, sodium, potash, potassium, and sulfur. Leasable fluid minerals include oil, gas, coalbed natural gas, and geothermal resources. Production of these minerals on public land may only occur on leases acquired by competitive leasing.

##### **3.3.4.1.1. Oil and Gas**

The planning area contains two oil and gas basins: the Kandik and the Yukon Flats Basin. Four hydrocarbon wells (one coalbed methane and three oil and gas) have been drilled within the boundaries of the planning area. Two additional shallow holes were drilled and encountered gas. The oil and gas potential is not fully realized for this area.

Presently, there are no active federal oil and gas leases. However, there are 91 suspended oil and gas lease offers within the planning area. Most of these pending, noncompetitive offers were filed prior to 1975. Of these, 81 are within the Yukon Flats NWR, leaving 10 pending leases on BLM-managed lands. These 90 suspended lease offers comprise less than 10,000 acres within the Upper Black River Subunit. These suspended leases have had limited exploration and no oil and gas development. If the Native-selected mineral estates underlying these offers are not conveyed to a regional Native corporation, the offers will be adjudicated and, if appropriate, leases will be issued at such time as the land withdrawals suspending the offers are removed. If the mineral estates are conveyed, the offers will be rejected.

#### **History and Development**

The Kandik Basin is a structural depression containing Paleozoic-Mesozoic sediments that straddles the Alaska-Yukon Territory border. Three wells were drilled in the Kandik region (Upper Black River Subunit), but were not located within the basin.

The Yukon Flats Basin spans all four planning subunits. In 2004, the USGS conducted a study of the Yukon Flats Basin and determined the existence of technically recoverable oil. The report estimated a resource of 173 million barrels (mmb) of oil, 127 mmb of natural gas liquids, and 5.46 trillion cubic feet of gas. Unfortunately, the lack of deep wells within the basin contributes to an uncertainty in this resource assessment. In 2004, the BLM and USGS drilled a coalbed natural gas test well, reaching a depth of 2,287 feet, which is the deepest hole drilled in the basin. The results of this test well were not favorable, as coal with only minor amounts of biogenic methane were encountered.

#### **Occurrence Potential**

Several geologic elements are necessary for the accumulation of oil and gas. These elements include an organic-rich source rock, the combined effects of heat and time, a porous and permeable reservoir rock, and a trap to prevent the oil and gas from escaping to the surface. Traps generally exist in predictable places, such as at the tops of anticlines, next to faults, in the updip pinchouts of sandstone beds, or beneath unconformities. Map 87 shows the occurrence

potential for oil and gas throughout the planning area; however, there is no implication that these resources can be developed economically.

The USGS prepares estimates of oil and gas resources in the United States based on the concept of a “play,” which is defined as a set of oil and/or gas accumulations sharing similar geographic boundaries and geologic attributes, such as source rock, reservoir type, and trap (Beeman et al. 1996). Plays occur within oil and gas basins and by definition, plays identified by the USGS are to be considered high potential for future oil and gas exploration.

### **Development Potential**

#### **Kandik Basin**

According to the USGS, the Kandik basin contains six conceptual plays in Yukon Territory, Canada (three oil and three gas) and two conceptual plays in Alaska (the Kandik Pre-Mid-Cretaceous Strata Play, Kandik Upper Cretaceous and Tertiary Non-Marine Strata Play). A conceptual play is a hypothesized play based on the subsurface geologic knowledge of the area.

The overall resource potential of the Kandik Pre-Mid-Cretaceous Strata Play is poor, despite having a world-class source rock in the Glenn Shale, due to the risk associated with both reservoir and trap integrity being very large (Stanley 1995). The Kandik Upper Cretaceous and Tertiary Non-Marine Strata Play has little to no development potential.

#### **Yukon Flats Basin**

The available reconnaissance 2D seismic data shows that the Birch Creek deep portion of the Yukon Flats Basin can be divided into multiple Geologic Plays: Tertiary Sandstone Play, Sub-thrust Play, and Crooked Creek Play. With the current data on the Yukon Flats Basin, there is general agreement on the existence of sedimentary rocks, faults, folds and where the most likely portion of the basin has the highest potential for oil and gas.

Most of the estimated technically recoverable resources are in the Tertiary Sandstone Play. At the mean, approximately 97 percent (5.28 trillion cubic feet (tcf)) of the undiscovered gas, and 96 percent (165.57 mmb) of the oil is estimated to be within this play (Stanley et al. 2004). Less than 1 percent (0.02 tcf and 0.61 mmb) of the technically recoverable oil and gas is located in the Sub-thrust Play (Stanley et al. 2004). Approximately 3 percent of the technically recoverable gas (0.16 tcf) and 4 percent of the technically recoverable oil (6.47 mmb) is in the Crooked Creek Play (Stanley et al. 2004).

### **3.3.4.1.2. Coal**

Sedimentary rocks with known coal deposits occur in several areas within the planning area (Map 87). Subbituminous grade coal occurrences can be found in the Eagle Field, as well as the Chicken, Circle, and Steese coal districts. All of the coal deposits within the planning area are part of the larger Upper Yukon coal province.

The Eagle Field is located in the Fortymile Subunit, approximately nine miles from the U.S.-Canadian border on its furthest easterly flanks. It encompasses 392,500 acres, all on the southern banks of the Yukon River. The coal is ranked as subbituminous C and lignite and occurs in seams less than five feet thick and is exposed in broad open folds of Late Cretaceous and Tertiary strata (Merritt 1987). Exploration occurred in the early 1900s and resulted in the

extraction of approximately 2,000 short tons. The mined coal was sledded to various communities along the Yukon River and was used in river steamers or transported to the Dawson market (Collier 1903). Despite the large deposits of coal, there is still low potential for development, unless nearby infrastructure were to be developed.

The Chicken District is located within the Fortymile Subunit, about 50 miles south of the Eagle Field on a small tributary to the South Fork of the Fortymile River. The Chicken District's most notable coal feature is a 22-ft thick subbituminous seam that dips to near vertical in an outcrop (Merritt 1987). Coal mining did not occur here until the 1930s when a shaft was opened into the larger coal bed. The coal was used locally in placer mining operations (Merritt 1986). There is currently no coal being produced from the Chicken District. The low grade coal and the limited size of the district make it an unattractive source for large-scale development.

The Circle District is a small body of coal that is bounded by the Tintina Fault to the south and the Yukon River to the north. The Circle District encompasses roughly 77,000 acres and is mostly defined as subbituminous coal. The Steese District, which lies approximately 50 miles west of the Circle District, contains a small body of coal that encompasses 18,000 acres. Bed thickness is typically less than five feet and is predominantly defined as Tertiary subbituminous to bituminous coal. This coal seam stretches across the length of the Tintina Fault all the way to the Rampart Field, roughly 180 miles to the west. All totaled, there is an estimated resources of 50 million short tons of coal (Merritt 1987). Coal from these districts was used locally for heat, until heating fuel became available. The remoteness and low-grade of these coal districts make any large-scale development unlikely.

#### **3.3.4.1.2.1. Coal Bed Natural Gas**

Coal Bed Natural Gas (CBNG) is gas composed primarily of methane that was produced by the coals during the coal-forming process and is held within the coals by hydrostatic pressure created by the presence of water. In order to produce CBNG, the pressure within the coal needs to be reduced to release the gas. This is accomplished by pumping water from the coals.

Methane within coals has long been recognized as a hazard when mining the coals. It wasn't until the 1980s that CBNG was thought of as a potential reservoir target, even though producers often drilled through coal seams on their way to deeper targets. During the late 1990s, CBNG production increased dramatically nationwide to meet growing energy demands. In 2007, CBNG accounted for nearly 10 percent (1,754 billion cubic feet (bcf)) of total gas production (19,089 bcf) within the United States (EIA 2009).

#### **3.3.4.1.2.2. Geothermal**

Geothermal energy consists of heat stored in rocks, and, to a lesser extent, in water or steam-filled pores and fractures. Water and steam transfer geothermal heat by convection to shallow depths within the earth's crust. This heat can be tapped by drilling. Geothermal heat may also escape at the surface in geysers, thermal springs, mud volcanoes, and vents (usually volcanic) called fumaroles.

Geothermal resources of varying temperatures are known to occur throughout the planning area. Geothermal areas that have been identified include; Chena Hot Springs, Circle Hot Springs, Big Windy Hot Springs, and Flat Creek Hot Springs. None of these hot springs are categorized as Known Geothermal Research Areas (KGRA). The potential for geothermal is low due to the fact

that most springs are on private land. The only hot spring on BLM land, Big Windy Hot Springs, is a Research Natural Area.

### **3.3.4.1.2.3. Oil Shale**

Oil shale is considered a solid leasable mineral. Oil shale was formed millions of years ago when silt and organic debris was deposited on lake beds or sea bottoms. Over time, heat and pressure transform materials into oil shale similar to the process that generates oil; however, the heat and pressure were not as intense. The extraction of hydrocarbons from oil shale is more complex than pumping oil from conventional oil wells. Oil shale must first be mined and then heated to a high temperature (retorting), the resulting liquid can then be separated and collected.

Oil shales have been identified in the Upper Black River Subunit, specifically in the southeastern margin of the Kandik Basin with exposed areas near Trout Creek, Nation River, and along the banks of the Yukon River. Initial estimations found that deposits along Trout Creek may contain 28 gallons of oil per ton, but further investigation found actual oil quantities may be as low as 0.3 to 7.6 gallons with an average of 4.8 gallons per ton (Brabb and Churkin 1969). USGS investigations have found that oil shales explored along the Yukon River, across the banks from the Nation River, contained 1.7 to 12.3 gallons per ton with an average of 4.0 gallons per ton (Troutman and Stanley 2002). There is currently no production of oil shales in the planning area. Further exploration must be conducted to fully realize the extent of oil shales in the planning area. There is no potential for production on BLM lands.

### **3.3.4.2. Locatable Minerals**

Locatable minerals are minerals for which the right to explore, develop, and extract mineral resources is established by the staking of mining claims, as authorized under the General Mining Law of 1872. Examples of locatable minerals include metallic minerals (i.e., gold, silver, copper, mercury, zinc, molybdenum, uranium, tungsten) and non-metallic minerals (i.e., limestone, barite, gypsum, diatomaceous earth, fluorspar, opals).

There is an abundance of publicly available information detailing mineral occurrences within the planning area. Two databases were used to provide site-specific mineral occurrence information on a statewide basis, the USGS's Alaska Resource Data File (ARDF) and BLM's Alaska Minerals Information System (AMIS).

The BLM Alaska State Office, Branch of Energy and Solid Minerals prepared a Mineral Occurrence and Development Potential Report for Locatable and Salable Minerals (BLM 2009b). This report provides more detailed information on locatable mineral occurrence and development potential in the planning area and is available online at [www.blm.gov/ak/eirmp](http://www.blm.gov/ak/eirmp) (Map 88).

#### **3.3.4.2.1. History and Development**

The planning area includes all or portions of 13 mining districts, as established by Ransome and Kerns (1954). The Circle, Tolovana, Eagle, Fortymile, and Fairbanks districts are classified as major gold producing districts, with the Fairbanks district being the largest producer in Alaska (Nokleberg 1993). The planning area boundary bisects the Fairbanks mining district; three quarters of the gold production of the district occurs within the planning area boundary. In total the Fairbanks District (including the Richardson Subdistrict) produced 13 million troy ounces of gold, of which 8.3 million is from placer and 4.7 million is from hard rock sources. About

11.2 million ounces of gold have been produced in the planning area since 2007. The Tolovana, Eagle, Fortymile and Circle mining districts contributed a combined total of about 1.7 million ounces of gold, as of 2007.

Table 3.32 presents an estimated summary of placer and lode gold produced in the planning area described in terms of Mining Districts (Ransome and Kerns 1954).

**Table 3.32. Ounces of Gold Produced in the Planning Area Through 2007.**

Mining District <sup>a</sup>	Total Gold Produced in Planning Area <sup>b</sup>	Placer Gold	Lode Gold	Placer Gold since 2001 <sup>c</sup>	Lode Gold since 2001 <sup>c</sup>
Rampart <sup>d</sup>	0	N/A	N/A	N/A	N/A
Tolovana	530,121	530,121	0	655	0
Yukon Flats	0	0	0	0	0
Circle	1,084,035	1,084,035	0	25,592	0
Black	2	2	0	2	0
Eagle	52,045	52,045	0	45	0
Fortymile	564,631	564,631	0	18,197	0
Chisana <sup>d</sup>	0	N/A	N/A	N/A	N/A
Tok	280	280	0	0	0
Goodpaster	375,534	2,050	373,484	0	373,184
Fairbanks <sup>e</sup>	9,387,708	7,946,562	4,321,592	31,117	2,144,147
Delta River	8,2770	8,270	0	0	0
Sheenjak	0	0	0	0	0
<b>TOTAL</b>	<b>11,525,626</b>	<b>10,757,820</b>	<b>4,763,876</b>	<b>195,778</b>	<b>2,517,331</b>

<sup>a</sup>District boundaries established by Ransome and Kerns, 1954

<sup>b</sup>Source: Szumigala 2008

<sup>c</sup>2001 production data from Swainbank et al. 2002

<sup>d</sup>Gold produced in the Rampart and Chisana Districts was out of the planning area

<sup>e</sup>Production includes gold produced in the Richardson Subdistrict/Fairbanks Mining District

### 3.3.4.2.2. Placer Gold

Gold was discovered in the planning area in 1887 on Franklin Creek, a tributary of the Fortymile River, in the Fortymile Subunit. Gold has been continually mined in the region since. The ARDF database contains information on 236 placer gold occurrences existing in the planning area. The Alaska Division of Geological and Geophysical Surveys (DGGs), in the 2007 Mineral Industry Report list 81 separate companies or individuals that are estimated to be producing gold in the planning area (Szumigala et al. 2008).

#### 3.3.4.2.2.1. Low-sulfide Au-quartz veins

The ARDF database indicates there are 29 quartz veins that were past producers of gold in the planning area. None of these are located in the Upper Black River Subunit. The Locatable Mineral Occurrence and Development Potential Report (BLM 2009b) presents a summary of historic lode producers based on a query of the ARDF database (USGS 2008a,b). The Cleary Hill/Summit, Henry Ford, and the McCarty Shaft mines were the largest producers of this deposit type. Cleary Hill (ARDF# LG119), is estimated to have produced over 100,000 fine ounces of gold since it was first mined in the early 1900s. It is estimated to contain another 100,000 ounces of gold in steeply dipping high-grade quartz veins. The McCarty Shaft (ARDF# LG150) and

the Henry Ford Mine (ARDF # LG153) are both mines on the McCarty/American Eagle vein system just east of Cleary Hill.

### Significant Deposits

Although the AMIS and ARDF electronic databases list all reported occurrences and deposits regardless of economic potential, Nokleberg et al. (1987, 1993, and 1994) provide summaries of those lode deposits considered most significant based on size, favorable geology, likelihood of economic development, and industry interest at the time of press. The Alaska DGGs, through its annual Alaska's Minerals Industry Report series, provides updating to the list of significant mineral deposits (Szumigala et al. 2008). Using data from the ARDF (USGS 2008a), the DGGs Special Report series, the list of Significant Deposits was amended to include additional sites not known or fully developed at the time of Nokleberg's publications and to highlight occurrences with resource volume data. The following table presents a summary of Significant Deposits for the planning area.

**Table 3.33. Significant Mineral Deposits in the Planning Area**

Deposit Name	Quadrangle	Deposit Model Type <sup>a</sup>	Commodity	Production
Fort Knox	Fairbanks	Fort Knox type porphyry Au	Au	Large
Delta District (MID) <sup>b</sup>	Mount Hayes	Kuroko massive sulfide (28a)	Pb, Zn	None
Blue Lead; Blue Lead Extension <sup>b</sup>	Big Delta	Low-sulfide Au-quartz veins (36a)	Au	Small
Cleary Hill; Summit <sup>c</sup>	Livengood	Low-sulfide Au-quartz veins (36a)	Au	Medium
Livengood/Money Knob <sup>d</sup>	Livengood	Low-sulfide Au-quartz veins (36a)	As, Au, Fe, Sb	None
Democrat; Mitchell Lode <sup>b</sup>	Big Delta	Plutonic Related Au (No Model #)	Au	Small
Pogo; Liese Creek <sup>c</sup>	Big Delta	Mesothermal Shear hosted Quartz veins	Au	Large
LWM <sup>d</sup>	Eagle	Polymetallic Replacement Deposits (19a)	Ag, Au, Hg, Pb, W, Zn	None
Taurus <sup>b</sup>	Tanacross	Porphyry Cu-Mo (21a)	Cu, Mo	None
Slate Creek Asbestos	Eagle	Serpentine-hosted asbestos (8d)	Asbestos	None
LMS <sup>d</sup>	Big Delta	Undetermined	Au	None
Roy Creek (formerly Mount Prindle) <sup>b</sup>	Circle	Undetermined	U	None
True North <sup>c</sup>	Livengood	Undetermined	Au	None
Dolphin <sup>c</sup>	Livengood	Undetermined	Au	None
Gil <sup>c</sup>	Livengood	Undetermined	Au	None

<sup>a</sup>Deposit models based on Cox and Singer (1987)

<sup>b</sup>Based on descriptions from Nokleberg et al. (1993)

<sup>c</sup>Based on descriptions from Szumigala et al, Special Report 62 (2008)

<sup>d</sup>Based on descriptions from USGS Open-File Report 2008-1225 (Grybeck, 2008)

### Mining Claims

There are 930 active mining claims within the planning area. Federal mining claim locations generally indicate a level of mineral potential and exploration known prior to 1971. There have been no opportunities to stake new federal mining claims on most BLM lands within the planning

area since that time due to ANCSA 17(d)(1) and ANILCA withdrawals. There are no existing federal mining claims on BLM-managed land in the Upper Black River Subunit.

**Table 3.34. Mining Claims and Prospecting Sites in the Planning Area**

Type	Acres Claimed <sup>a</sup>	Number of Individual Claims <sup>b</sup>	Number of Unique Owners <sup>c</sup>
Federal Mining Claims (unpatented)	25,600	938	80 names
State prospecting sites	21,000	132	16 names
State mining leases	12,700	19	13 names
State mining claims	1,250,500	16,018	422 names
State claims Total	1,284,200	16,169	451 names
<b>Grand Total</b>	<b>1,309,800</b>	<b>17,107</b>	<b>933 names</b>

<sup>a</sup>State claims data based on a 11/23/2008 extract from State of Alaska database

<sup>b</sup>Federal claims data based on 10/23/2008 version of the data set

<sup>c</sup>Unique names represent large mining companies, Native corporations, individuals, or small associations

### 3.3.4.2.3. Rare Earth Elements

Industry interest in rare earth elements (REE) is currently high due to possible shortages of these elements for use in hybrid automobiles and wind turbine generators (BLM 2011). REE occur in the White Mountains NRA, which is withdrawn from locatable mineral entry by ANILCA, but ANILCA allows for a mineral leasing program at the discretion of the Secretary of the Interior. A supplement to the Draft RMP/EIS was prepared to consider hardrock mineral leasing in the White Mountains, including REE. This supplemental EIS can be found in Appendix M.

The Roy Creek High LMP area lies about 15 miles west-northwest of Mount Prindle in the White Mountains NRA. Armbrustmacher (1989) shows the mapped boundaries of a uranium and REE anomalous syenite granite at the headwaters of Roy Creek. An excerpt from the report states: “Interest in the syenite complex stems from the fact that it is genetically and spatially associated with several small deposits that are extremely high in thorium and rare-earth elements (REE)”. The location of REE in this area was backed up by anomalous geochemical sampling results collected by USGS (Weber et al. 1988) from trenches and drill core. The DGGS published the results of their Mineral Assessment of the Lime Peak – Mount Prindle Area and found additional syenite intrusives to the east of the Roy Creek intrusive (Smith et al. 1987). This area lacks any ARDF sites but does include one Significant Mineral Deposit (Nokleberg et al. 1987), two AMIS sites related to REEs and the location of lode claims that covered the area in the late 1970’s. Mineral occurrences immediately around Mount Prindle are have higher uranium concentrations relative to REEs.

### 3.3.4.3. Salable Minerals

The local demand for salable minerals, also called mineral materials, in the planning area is generally being met by producers located on private or State lands. The primary mineral material commodity is sand and gravel used in construction and road maintenance. The ARDF database does not evaluate mineral materials but BLM’s AMIS database lists 20 sites as producing sand and gravel or stone. Of these 20 sites, twelve are sand and gravel sites, located along the major highways and provided sites for road construction. The other eight sites are listed in AMIS as “Stone” occurrences and are most likely also used for construction material.

Mineral Materials production has gradually decreased since construction of the Trans-Alaska Pipeline. Sand, gravel, and stone production is surveyed by the DGGs and reported in the annual Alaska's Mineral Industry reports. The State's production of sand and gravel from 1967 to 1986 averaged 40 million tons per year. From 1987 to 2007 production averaged 14 million tons. The higher production levels in the seventies and eighties are related to the construction surrounding the Trans-Alaska Pipeline, with the annual production peaking in 1974 at 119 million tons. Various current plans to construct a natural gas pipeline along the Dalton, Richardson, and/or Alaska highways will drive the materials demand higher, but engineering design (buried or above ground) will ultimately drive the level of demand. It is foreseeable that most of the resource for this portion of the proposed route will come from State or private lands.

The Alaska Mineral Industry report also provides production by region. In 2007, 4.4 million of the reported 14.2 million tons of sand and gravel produced for the whole state came from the DGGs' "Eastern Interior" region (Szumigala et al. 2008). Statewide production of building stone (such as crushed stone, D-1, riprap) has averaged about 3 million tons for the last 20 years. Of the 2.2 million tons of building stone reported for 2007, only 105 thousand tons came from the entire DGGs' Eastern Interior region (Szumigala et al. 2008). The DGGs' Eastern Interior region is about twice as large of an area as BLM's Eastern Interior Planning Area.

There are currently 10 active, BLM-managed mineral material sites in the planning area, with a total production of less than 150,000 cubic yards/year sand and gravel. These sites are utilized for local consumption and are generally located along the road system.

### **3.3.5. Recreation**

#### **3.3.5.1. Fortymile Subunit**

Located in Interior Alaska along the United States-Canada Border, the Fortymile Subunit is approximately 180 air miles (290 km) east of Fairbanks, 325 air miles (523 km) northeast of Anchorage, and 70 miles (112 km) west of Dawson, Yukon Territory. Although generally accessible by road, air, and water, predominant access to the region is provided by the Taylor Highway. Several small communities are located along the highway, including Chicken (at Mile 66), with a permanent population of about 25 people and Eagle (Mile 160) with a permanent population of about 150 people (Map 2).

BLM-managed lands in the subunit offer a diversity of outdoor recreation opportunities, which include land, water, and snow-based activities. Examples of recreation activities commonly conducted in the area include boating and river-based recreation, camping, fishing, gathering of edible plants and berries, hiking and backpacking, hobby mineral collecting, and OHV use. In addition, the presence of migratory and resident wildlife produces abundant opportunities for hunting, trapping, photography, and wildlife viewing.

Although the Fortymile Subunit is actively promoted as a recreational destination, BLM facilities and recreation staff remains limited. There have been major increases in recreational visitation and use over the last 15 years, and impacts to other resources from recreation have been identified.

Until such a time as the Eastern Interior RMP process is complete, the 1980 Fortymile MFP in conjunction with the 1983 Fortymile River Management Plan, will be the relevant planning documents for BLM-managed lands in this region.

The five objectives for recreation management in the Fortymile MFP were (1) to provide interpretation for visitors to the Fortymile resource area; (2) to provide recreation facilities that will enable visitors to use and enjoy the public lands in a safe and healthful manner; (3) to manage areas with exceptional wilderness values in a manner that will protect and preserve these values; (4) to develop and implement a program for the regulated use of off-road vehicles within the Fortymile resource area; and (5) to provide a program of resource protection and visitor assistance services within the Fortymile resource area.

On December 2, 1980, ANILCA (P.L. 96-487) established the Fortymile, and certain tributaries, as a component of the NWSR. ANILCA also directed the Secretary of the Interior to establish detailed boundaries, prepare a management and development plan, and to present this information to Congress by December 2, 1983. In response to these directives, the detailed boundaries of the Fortymile WSR were set forth by the Fortymile River Management Plan, (BLM 1983a) signed in December 1983.

The three objectives for recreation management in the Fortymile River Management Plan were (1) to provide high-quality recreational opportunities associated with a free-flowing river for present and future generations; (2) to provide recreational use of fish and wildlife resources, including hunting and fishing within the framework of appropriate federal and state laws; and (3) to provide for a level of utilization of land and water resources which will leave the existing environment unimpaired for the use and enjoyment of future generations.

### **Off-highway Vehicle Management**

Off-highway vehicle (OHV) use in the Fortymile Subunit has become an issue of significant concern due to possible degradation of resources that can result from high levels of use and the proliferation of pioneered routes. The Fortymile MFP did not set OHV designations. Between the months of mid-August and late-September, motorized travel increases with the advent of the fall big game hunting season. During this time, travel along the Taylor Highway increases significantly as highway vehicles scout the area for game and areas to stage for OHV use. Although the majority of OHV use occurs predominantly on existing roads and trails, there is an increasing trend in cross-country travel by hunters accessing remote areas, and by those retrieving game. This type of travel pattern often leads to route-proliferation. These user-created routes are unsustainable and can cause significant resource damage. However, as is the case in much of Alaska, the majority of existing routes are the result of user-created trails that either follow historic non-recreational routes (such as, mining or access) or were created by OHV users repeatedly driving cross-country. Accordingly, many of the existing routes within the Fortymile Subunit are not sustainable from a resource management perspective.

With increased pressures from growing populations and advances in OHV technology, the BLM anticipates that travel demands in the Fortymile Subunit could see significant growth in both land use and levels of activity participation. Since OHV use accounts for the majority of travel-related activities in the Fortymile Subunit, it is perceived that the demand for this activity will continue to grow in the future. As this occurs, the need for additional trails and mechanisms for managing these trails could become necessary. Mechanism for managing the effects of OHV use include, designating routes, prohibiting use in sensitive areas, providing user education, and providing appropriate law enforcement in the area. Doing so may further ensure that user satisfaction remains high while maintaining minimal impacts to the natural environment.

### **Special Recreation Permits**

Special Recreation Permits (SRPs) are authorizations which allow specified recreational uses of public lands and related waters. They are issued to provide a mechanism to accommodate commercial recreational use, protect natural and cultural resources, and to manage visitor use. As authorized by the Land and Water Conservation Fund Act, there are five types of uses for which SRPs are required: commercial, competitive, vending, individual or group use in special areas, and organized group activity and event use. Permits can be issued for periods ranging from 1 to 10 years. Currently, the demand for SRPs in the Fortymile Subunit remains fairly low, with the administration of only one active SRP for guided river trips.

The BLM collects fees in several locations throughout the Fortymile Subunit, including the West Fork, Walker Fork, and Eagle campgrounds. Services to the public are provided from these monies by reinvesting recreation fees at the local sites where they were collected, to benefit visitors through enhanced facilities and services. These services include (but are not limited to) maintenance of campgrounds, trails, and restroom facilities; staffing of campgrounds with seasonal hosts; and expenses related to interpretive signs and programs. Fees amounted to approximately \$10,000 in 2008.

### **Recreation Management Areas**

Encompassing approximately 250,000 acres within the Fortymile Subunit, the Fortymile River SRMA caters to a diverse market of international, national, regional, state, and local recreation users. Although the majority of visitors to the Fortymile Subunit are Alaska residents, an increasing number are from national and international locations. Drawn to the area by its array of Alaska wilderness recreational opportunities, visitors come to the region from all over the U.S. and abroad. Most numerous are the Taylor Highway travelers, who are generally passive users of the river environment. Their use is most commonly reserved to the activities of camping, fishing, hiking and backpacking, photography, and wildlife viewing. Accordingly, the majority of non-resident visitor use occurs from May to September.

Resident users of the Fortymile Subunit can be categorized into two primary groups: year-round and seasonal occupants. Although it is estimated that less than 150 people reside year-round in the Alaskan basin (U.S. side of the Fortymile region), BLM-managed lands are often used as “backyard” recreation areas by local residents. The communities of Chicken and Eagle are located directly adjacent to BLM-managed lands. This proximity to public lands provides year-round access to outstanding recreational opportunities. This use increases during the summer, due to an influx of seasonal residents. The approximately 250,000 acres that comprise the Fortymile WSR Corridor receive an estimated 90,000 visits per year, according to the BLM’s Recreation Management Information System.

The Chicken Field Station, located at Mile 68 of the Taylor Highway, is the primary administrative site for the management of the area. BLM employees and volunteers, who live and work there seasonally (May through September), staff the station. Developed recreation sites within the Fortymile River SRMA include: the Mount Fairplay Wayside, Logging Cabin Creek Wayside, West Fork Campground and River Access (25 sites), Mosquito Fork Wayside, Mosquito Fork Overlook Trailhead, South Fork Wayside, Walker Fork Campground (22 sites), Davis Dome Wayside, Fortymile Wayside and River Access, Eagle Campground (18 sites), and Fort Egbert National Historic Landmark.

### **Trends in Outdoor Recreation Activities**

According to BLM staff, the following trends in recreation have been observed in the Fortymile Subunit:

- increased OHV use
- increased demand for trails, both motorized and non-motorized
- increased hunting pressure
- increased visitation of recreation and cultural sites due to an increase in the distribution of information via the Internet and other media outlets
- increased demand for non-motorized water based recreation experiences
- increased demand for overnight RV and tent camping areas

Most public land use estimates and activity participation estimates depend entirely on field observations and professional judgment of BLM recreation staff, and are approximate and not scientifically based. The 250,000 acres that comprise the Fortymile Subunit receive an estimated 90,000 visits per year. With increased pressures from growing populations and advances in recreation technology, recreation use in the Fortymile Subunit has seen significant growth in both land use and levels of activity participation. As this continues to occur, the need for additional facilities and/or trails, and the mechanisms for managing these assets will become increasingly necessary.

### **3.3.5.2. Steese Subunit**

Located approximately 70 miles north of Fairbanks, and encompassing 1.2 million acres, the Steese National Conservation Area is divided into two units by State of Alaska lands and the Steese Highway. The North Unit is bounded on the southwest by the Fairbanks North Star Borough, the west by the White Mountains NRA, the north by the Yukon Flats NWR, and on the east and south by State of Alaska lands. The South Unit is bounded on the west and south by the Borough, the east by Yukon-Charley Rivers National Preserve, and on the east and north by State of Alaska lands.

As the popularity of the area has increased, so has visitation and demand for a variety of recreational opportunities. The Steese National Conservation Area offers a diversity of outdoor recreation pursuits, which includes land, water, and snow based activities. Examples of recreation activities commonly conducted in the area include boating and river-based recreation, fishing, hiking and backpacking, gathering of edible plants and berries, dog mushing, skiing, skijoring, hobby mineral collecting, and OHV use (including snowmobiling). In addition, the presence of migratory and resident wildlife produces abundant opportunities for hunting, trapping, photography, and wildlife viewing.

Most of the recreational opportunities occur during the snow free seasons (May through September), with the fall big game hunting season attracting the greatest number of visitors for caribou and moose. Spring bear hunting is also popular, but does not attract as many visitors as the fall season. Grouse and Ptarmigan hunting also attract a small number of visitors in the fall and throughout the winter season.

Until such a time as the Eastern Interior RMP process is complete, the Steese RMP (BLM 1986a), the Birch Creek River Management Plan (BLM 1983b), and the 1993 Recreation Activity Management Plan (RAMP) for the Steese National Conservation Area and Related Lands along the Steese Highway will be the relevant planning documents for BLM-managed lands in this region.

**Steese National Conservation Area Resource Management Plan:** Established by Congress in 1980, the Steese National Conservation Area was directed to consider, in planning and management, the special values of caribou range and Birch Creek. To accommodate these directives, the Steese RMP (BLM 1986a) was developed using the BLM planning system, as outlined in Section 201 of FLPMA (P.L. 94579).

Twelve objectives were identified in the RMP. The five that related to recreation were (1) to protect existing viewsheds along Birch Creek; (2) to improve access to recreational opportunities; (3) to provide for quality hunting, trapping, fishing, and wildlife viewing; (4) to protect Primitive recreation values in the Mount Prindle/Lime Peak area and along the Pinnell Mountain Trail; and (5) to provide opportunities for OHV use where compatible with fish, wildlife, and recreation objectives.

**Birch Creek River Management Plan:** Subject to prior existing rights, ANILCA classified and designated approximately 126 miles of Birch Creek as a “wild” river pursuant to the Wild and Scenic Rivers Act (WSRA, P.L. 90 542). In doing so, Congress intended that Birch Creek WSR be preserved in a free-flowing condition, and that the river and its immediate environment be protected for the benefit and enjoyment of present and future generations. It also directed BLM to develop a River Management Plan which was completed in 1983 (BLM 1983b).

Of the eight management objectives that were identified in the plan, the two that pertained to recreation were (1) to provide high quality primitive recreational opportunities for present and future generations; and (2) to provide a variety of opportunities for interpretive, scientific, educational, and wildlands oriented uses.

**Recreation Activity Management Plan for the Steese National Conservation Area and Related Lands along the Steese Highway:** The Steese RMP (BLM 1983a) called for the preparation of a Recreation Activity Management Plan (RAMP), to provide specific detailed locations, timing, methods, and rationale for (1) public information and interpretation; (2) a remote public use cabin program; (3) campgrounds, trailheads, boat launches, or other facilities; and (4) summer and winter trails, with particular emphasis to hiking trails associated with Birch Creek.

The plan identified three issues:

- Basic accessibility, safety, health, and sanitation services;
- Resource protection; and,
- Establishment and maintenance of desired experience opportunities.

A RAMP was approved in October 1993. Since that time, four sites were identified as roaded natural under the ROS, and site improvements were made following the BLM activity-level planning process. Twelvemile Summit and Eagle Summit waysides provide access to the Pinnell Mountain Trail, while Upper Birch Creek and Lower Birch Creek waysides provide access to Birch Creek.

### Off-highway Vehicle Management

The Steese RMP (BLM 1986a) describes the level of OHV opportunities available; however, some decisions were subsequently amended by *Federal Register* Notices. Currently there are approximately 1,065,000 acres designated as Limited to summer use of OHVs with weight restrictions, nearly 1,200,000 acres designated as Limited to winter use of OHVs with weight restrictions, and approximately 12,000 acres Closed to OHVs. Off-highway vehicle use is monitored intermittently in various locations. Monitoring includes the use of photos and

observing changing conditions such as increased erosion, water accumulating on routes from use, and/or route braiding.

The Great Unknown Creek and the upper Preacher Creek areas receive the most intense OHV use. Demand for OHV activities is expected to continue to increase in the subunit. This will place demands on the BLM to provide for and monitor motorized users. The increased demand will also have implications on OHV designations, pressures on providing a sustainable trail system, and increases in maintenance workloads.

### **Special Recreation Permits**

There are currently four active SRPs in the Steese National Conservation Area which including the Birch Creek WSR. Most of these permits allow for operations both within and outside of the area. SRP activities and locations include; outfitting and guided trips on Birch Creek WSR; outfitting trips on the Pinnell Mountain NRT; and competitive dogsled races on winter trails. Overall permitted use remains fairly low. New SRPs related to guided hunting trips have not been issued during the past five years.

### **Recreation Management Areas**

Consisting of approximately 1.2 million acres within the Steese Subunit, the Steese SRMA accommodates a growing market of national, state, and local recreation users. While the majority of these users are from Fairbanks and surrounding communities, an increasing number are arriving from national locations as well. The major attractions within the Steese National Conservation Area are the Pinnell Mountain Trail and Birch Creek Wild and Scenic River.

The Central Field Station, located at Mile 127 of the Steese Highway, is the primary administrative site for the management of the Steese National Conservation Area. BLM employees and volunteers, who live and work there seasonally (May through September), staff the station. Developed recreation sites within the Steese National Conservation Area include: Upper Birch Creek Wayside, Lower Birch Creek Wayside, Eagle Summit Wayside, Ptarmigan Creek Trail Shelter, North Fork Trail Shelter, and Twelvemile Summit Wayside.

### **Trends in Outdoor Recreation Activities**

The following trends in recreation have been observed in the Steese National Conservation Area:

- increased OHV use
- increased demand for trails, both motorized and non-motorized
- increased hunting pressure
- increased visitation of recreation sites due to an increase in the distribution of information via the Internet and other media outlets
- increased demand for non-motorized water based recreation experiences

Recreation use estimates are derived from trailhead registers, SRP post-use reports, trail counters, over flights, as well as recreation staff and law enforcement observations. The 1.2 million acres that comprise the Steese National Conservation Area receive an estimated 10,000 visits per year. The largest number of users arrive during the caribou and moose hunting season, from August 10 to September 15. Due to the close proximity of the Steese National Conservation Area to the city of Fairbanks, the growing population base of the region, and the increases in fuel prices, a noticeable increase in use has occurred over the past 10 years. An increase in cross-country

travel has also occurred, where recreational hunters use OHVs for accessing remote areas and for retrieving game.

### **3.3.5.3. Upper Black River Subunit**

Located approximately 100 miles northeast of Fairbanks, and encompassing 2.6 million acres of BLM lands, the Upper Black River Subunit is undeveloped and very remote. The subunit is bounded on the east by the Yukon Territory, Canada, on the north by the Alaska NWR, and on the south by the Yukon-Charley Rivers National Preserve. There are a few isolated tracts of state and Native corporation land within the subunit

BLM-managed lands in the subunit offer a diversity of outdoor recreation opportunities, which includes hunting, fishing, trapping, and gathering of edible plants and berries. Most of the recreational opportunities occur during the snow free-seasons (May through September), with the fall big game hunting season attracting the greatest number of visitors, for caribou and moose. Occasional winter use, although not as prevalent, also occurs.

Recreation management in the Upper Black River Subunit is limited to custodial actions only. The subunit is remote and seldom visited, with access only by air. With the exception of three known airstrips located on private lands, there are no developed sites that are associated with recreation activities. Travel is currently unrestricted to all forms of highway and off-highway vehicle use. As such, motorized vehicles are allowed year-round, and are not subject to special restrictions. However, use is likely limited to primarily snowmobiles near the edges of the subunit. There are currently no active SRPs in the subunit; however, permits for guided hunting have been issued in the past.

The following trends in recreation have been observed in the Upper Black River Subunit:

- increased OHV use
- increased hunting pressure

### **3.3.5.4. White Mountains Subunit**

Located approximately 40 miles north of Fairbanks, the White Mountains NRA encompasses approximately one million acres and is bordered on the south by the Fairbanks North Star Borough, the west by State of Alaska lands, the north by the Yukon Flats NWR, and the east by the Steese National Conservation Area.

The White Mountains NRA is recognized for both its recreational opportunities and its extraordinary natural beauty and landscapes. As the popularity of this area has grown, visitation and demand for a variety of recreational opportunities has increased as well. Examples of activities commonly conducted in the area include boating and river-based recreation, camping, hiking, sightseeing and photography, horseback riding, hunting, dog mushing, skiing, skijoring, and OHV use (including snowmobiles). Visitation and the activities performed in the White Mountains NRA often vary with the weather. During the milder winter temperatures, visitors may enjoy traveling using the network of winter trails and cabins, while during the summer season, visitors may enjoy dispersed camping associated with motorized access.

The overall management strategy for the White Mountains NRA is to enhance the outdoor recreation opportunities available by developing facilities that promote greater user access. This includes, winter trails and cabins, motorized and non-motorized trails, and campgrounds.

Until such a time as the Eastern Interior RMP process is complete, the 1986 White Mountains RMP, the 1983 Beaver Creek River Management Plan, and the 1988 White Mountains Recreation Activity Management Plan will be the relevant planning documents for BLM-managed lands in this region.

**White Mountains RMP:** Established by Congress in 1980, the White Mountains NRA was directed to provide for public outdoor recreational use and for the conservation of scenic, historic, cultural, and wildlife values that includes other uses if they are compatible or do not significantly impair these values. To accommodate these directives, the White Mountains NRA RMP (BLM 1986b) was developed.

Sixteen objectives were identified in the RMP. The eight that related to recreation were (1) to improve access for recreational use of Beaver Creek within the confines and stated purpose of the WSR Act and the approved river management plan; (2) to improve recreational access to the interior highlands emphasizing Primitive and Semi-Primitive experiences; (3) to establish hiking opportunities related to river floating use; (4) to establish backcountry hiking/horseback riding opportunities along the high ridge complex linking Cache Mountain, Lime Peak, and Mount Prindle; (5) to maintain natural ecosystems in order to enhance Primitive and Semi-Primitive recreational experiences; (6) to provide for Semi-Primitive motorized recreation on the lands along the southern and western boundaries of the White Mountains NRA; (7) to provide opportunities for off-road vehicle use where compatible with recreation objectives; and (8) to provide opportunities for hunting, trapping, fishing, and wildlife viewing.

**Beaver Creek River Management Plan:** ANILCA classified and designated Beaver Creek as a “wild” river pursuant to the Wild and Scenic Rivers Act (WSRA, P.L. 90 542). In doing so, Congress intended that Beaver Creek WSR be preserved in a free-flowing condition and that the river and its immediate environment be protected for the benefit and enjoyment of present and future generations. It further directed the BLM to develop a river management plan, which was completed in 1983 (BLM 1983a).

Of the eight management objectives that were identified in the river management plan, the two that pertained to recreation were (1) to provide high quality primitive recreational opportunities for present and future generations; and (2) to provide a variety of opportunities for interpretive, scientific, educational, and wildlands oriented uses.

**White Mountains Recreation Activity Management Plan:** The RMP for the White Mountains NRA called for the preparation of a RAMP to address the details for implementing the recreation specific land-use decisions of the RMP. Within the RAMP is specific guidance on the management and development of trails for summer and winter use, trailhead management and development, a public recreation cabin program, access improvements, campgrounds, OHV designations, and visitor information and management. All of these decisions had timetables and costs associated with each project. Most of the projects identified have been constructed and managed since the writing of the RAMP in February 1988.

### **Off-highway Vehicle Management**

The White Mountains RMP (BLM 1986b) describes the level of OHV opportunities available. Currently there are approximately 402,500 acres designated as Limited to summer use of OHVs with weight restrictions, nearly 990,000 acres designated as Limited to winter use of OHVs with weight restrictions, and approximately 13,000 acres Closed to OHVs.

Off-highway vehicle use is monitored intermittently in various locations in the White Mountains NRA. Monitoring includes the use of photo points and observing changing conditions such as increased erosion, water accumulating on trails from use, and/or trail braiding.

The Nome Creek Valley and surrounding trails receive the most intense OHV use. Demand for OHV activities is expected to continue to increase in the subunit. This will place additional demands on the BLM to provide for and monitor motorized users. The increased demand will also have implications on OHV designations, pressures on providing a sustainable trail system, and increases in maintenance workloads.

### **Special Recreation Use Permits**

There are currently seven active SRPs in the White Mountains NRA. Most of these permits allow for operations both within and outside of the area. SRP activities and locations include; day-hiking trips and ski racing in the Wickersham Dome area, outfitted and guided trips on Beaver Creek, and military training exercises on winter trails. Overall permitted use remains fairly low. SRPs related to guided hunting trips have not been issued during the past five years, but two applications were received in 2009.

The Eastern Interior FO collects fees in several location including the Cripple Creek, Offer Creek, and Mount Prindle campgrounds, and the 12 public use cabins located throughout the subunit. Services to the public are provided from these monies by reinvesting recreation fees at the local sites where they were collected, to benefit visitors through enhanced facilities and services. These services include (but are not limited to) maintenance of campgrounds, cabins, roads, trails and restroom facilities, as well as, expenses related to interpretive signs and programs. Fees amounted to approximately \$23,000 in 2008.

### **Recreation Management Areas**

The White Mountains SRMA is approximately one million acres including both the designated NRA and adjacent BLM-managed lands supporting access and similar recreational opportunities. The White Mountains SRMA serves primarily the Fairbanks and surrounding community, though users from around Alaska, the lower forty-eight states, and international locations are not uncommon. Local users are very interested in the winter cabin and trail system that offers a unique opportunity for users outside of the normal summer season. During this time, primary activities include snowmobiling, dog sledding, skiing, and skijoring. Summer use tends to focus in three key geographic areas including, Wickersham Dome, Nome Creek (including Cripple Creek Campground and Quartz Creek Trail), and Beaver Creek. The majority of these users are local and are looking for a reasonable day or weekend getaway for outdoor opportunities. Though the types of activities shift between the three geographic areas, primary activities include, boating and river-based recreation, camping (both developed and dispersed), hiking, backpacking and sightseeing, hunting, fishing, hobby mineral collecting, berry picking, and OHV use.

Located just 40 miles north of Fairbanks, a city and borough of nearly 90,000 residents, the White Mountains NRA offers a unique opportunity for year-round recreational opportunities. The SRMA receives roughly 35,000 visits per year, with many of those being repeat users. Peak use periods include early March through mid-April for winter type activities, based on longer days and warmer temperatures, and late summer for activities focused more around berry picking and hunting. Unlike many other areas around Alaska, the White Mountains does not have a large targeted salmon run and is not located on a primary travel and tourism route. This allows for a more dispersed type of use.

The Nome Creek Field Station, located at the lower end of Nome Creek Road, is the primary administrative site for the management of the White Mountains NRA and is staffed seasonally (May through September). Developed recreation sites within the White Mountains SRMA include: Colorado Creek, Wickersham Dome, McKay Creek, and U.S. Creek trailheads, and Cripple Creek, Offer Creek, and Mount Prindle campgrounds. The BLM also maintains the Fred Blixt Cabin (Mile 62.5 Steese Highway), two trail shelters and 12 public-use cabins that have been built at scenic locations along the White Mountains winter trail system.

### **Trends in Outdoor Recreation Activities**

The following trends in recreation have been observed in the White Mountains NRA:

- increased OHV use
- increased demand for trails, both motorized and non-motorized
- increased hunting pressure
- increased visitation due to increased distribution of information via the Internet and other media outlets
- increased demand for non-motorized water based recreation experiences
- increased demand for overnight RV and tent camping areas
- increased demand for public-use cabins

Based on comments from the public and field observations by BLM staff, issues and concerns for the White Mountains NRA include an increase in cross-country motorized travel, and the need for additional public-use cabins.

During the summer months, an increase in cross-country motorized travel occurs primarily during the big-game hunting season, as recreational hunters use OHVs for accessing remote areas and for retrieving game. A noticeable increase in use has occurred over the past 10 years. This is due to the close proximity of the White Mountains NRA, and the increases in fuel prices. The construction of the Nome Creek Road in 1998 also increased the popularity of the area. The Nome Creek Valley receives the largest number of users in the White Mountains NRA, partly due to ease of access and developed recreational facilities.

The reservation demands for public-use cabins in the White Mountains NRA has significantly increased over the last 20 years. Even though additional cabins have been constructed during this period, BLM has been unable to meet public demand and interest during peak use periods. Peak use periods include holidays and late spring when warmer temperatures and longer days prevail. It is not uncommon for public to be turned away due to a lack of cabin availability. Occupancy rates generally range around 80 percent during this time of year.

### **3.3.6. Renewable Energy**

The BLM Land Use Planning Handbook (BLM 2005a) requires that plans address existing and potential development areas for renewable energy projects, including wind, solar, and biomass. In cooperation with the National Renewable Energy Laboratory (NREL), BLM assessed renewable energy resources on public lands in the western United States (BLM and DOE 2003). The assessment reviewed the potential for concentrated solar power, photovoltaics, wind, biomass, and geothermal on BLM lands in the west. Alaska was not included in this report. However, some of the site screening criteria outlined in this report were used to determine potential for renewable energy development in the planning area.

The potential for commercial solar operations is very low. One of the criteria outlined in *Assessing the Potential for Renewable Energy on Public Lands* (BLM and DOE 2003) is a solar resource of at least 5 kWh/m<sup>2</sup>/day. This criteria is not met anywhere within the planning area (DOE 2008a and 2008b) and solar power is not discussed further.

### 3.3.6.1. Wind Resources

The BLM encourages the development of wind energy within acceptable areas, consistent with the Energy Policy Act of 2005 and the BLM Energy and Mineral Policy (August 26, 2008). However, BLM policy is not to issue ROW authorizations for wind energy development for areas where such development is incompatible with specific resource values. Specific lands excluded from wind energy site monitoring and testing and wind energy development include designated areas that are part of the National Landscape Conservation System (I.M. 2009-043). In the planning area, this includes the Steese National Conservation Area, and Birch Creek, Beaver Creek, and Fortymile wild and scenic rivers.

There is increasing interest in wind energy development in Alaska. The Alaska Energy Authority and rural utilities are considering the development of wind power projects at many villages in the State. BLM Anchorage Field Office has received applications for wind monitoring towers. The Department of Energy's Wind Program and National Renewable Energy Laboratory has published a wind resource map for Alaska online at [http://www.windpoweringamerica.gov/maps\\_template.asp?stateab=ak](http://www.windpoweringamerica.gov/maps_template.asp?stateab=ak) which shows wind speed estimates at 50 meters above the ground and depicts the resource that could be used for utility-scale wind development.

As a renewable resource, wind is classified according to wind power classes, which are based on typical wind speeds. These classes range from Class 1 (the lowest) to Class 7 (the highest). In general, at 50 meters, wind power Class 4 or higher can be useful for generating wind power with large turbines and are considered good resources. Particular locations in the Class 3 areas could have higher wind power class values at 80 meters than shown on the 50 meter map because of possible high wind shear. Given the advances in technology, some locations in Class 3 areas may be suitable for utility-scale wind development. Primary criteria for wind development outlined in the *Assessing the Potential for Renewable Energy on Public Lands* (BLM and DOE 2003) included a wind power Class 4 and above for short-term, and Class 3 and above for long-term; and transmission access within 25 miles and road access within 50 miles.

Within the planning area, wind potential is generally poor to fair (Class 1-3). The exception is the higher elevation areas in the White Mountains NRA and Steese National Conservation Area where there are limited areas with class 4-7 (DOE 2006). Given that many of the areas with class 4 or higher wind potential are excluded from potential development by policy and that most remaining BLM lands are not within 25 miles of a major transmission line, no lands with high potential for utility-scale wind development have been identified in the planning area. The population in the planning area is low, particularly in areas near BLM-managed lands, and infrastructure to transport electricity to regional population centers is extremely limited.

Many smaller communities in the planning area rely on diesel-powered generating stations and the cost of generating electricity in this manner is very high. Using wind turbines along with diesel generation can save significant amounts of fuel. To be effective sites, need to be close to communities. Most of the land around villages is owned by Native corporations; the BLM manages very little land adjacent to communities or near existing transmission lines. Additionally,

BLM-managed lands in the planning area generally has only poor to fair wind potential (DOE 2006). Thus the potential for communities to use BLM-managed lands for local generation of wind energy is also low.

### **3.3.6.2. Biomass**

The biomass program is the use of organic matter and waste products for production of products such as paper and pulp, value-added commodities, and bio-energy or bio-based products such as plastics, ethanol, or diesel. Alaska's most important biomass fuels are wood, sawmill wastes, fish byproducts, and municipal waste (AEA 2009, <http://www.akenergyauthority.org/programsalternativebiomass.html>).

The potential for the use of biomass from public lands within the planning area is limited. Most of BLM lands are too far from population centers to make use of biomass economical. No vegetative treatments have been conducted in the past and the probability of future treatments on BLM lands is low. The most likely treatment is fuel reduction projects around communities. BLM lands are generally remote from communities, making it unlikely that such projects would occur. Primary criteria for commercial biomass projects outlined in *Assessing the Potential for Renewable Energy on Public Lands* (BLM and DOE 2003) included a biomass power plant within 50 miles and a population center with skilled labor force within 50 miles. These criteria generally cannot be met on BLM lands in the planning area.

There is potential for small-scale wood biomass projects as evidenced by two existing projects: wood boilers to heat community buildings in Dot Lake and the Tok School (Hanson 2005 and Alaska Division of Forestry 2008). There may be some limited demand for small-scale biomass projects involving BLM lands. Areas with the most potential would be those that are forested, located near a community, and are not within a specially designated area. The area with the most potential is located north of Tok and Tanacross, and west of the Taylor Highway. However, the potential on these lands is still limited and there are State or private lands with higher potential near these communities.

## **3.3.7. Travel Management**

### **3.3.7.1. Fortymile Subunit**

#### **3.3.7.1.1. Current Level and Location of Use**

As an integral part of virtually every activity that occurs in the Fortymile Subunit, travel and transportation occur for a variety of reasons including recreational access to public lands, commercial guiding, access to mineral resources, access to private inholdings, and access to traditional subsistence areas.

Visitors to the Fortymile Subunit utilize rivers, roads, and trails as a means of accomplishing these activities. Examples of travel activities commonly conducted in the area include hiking and recreational boating such as rafting, kayaking, and canoeing. In addition, the presence of new and existing roads and trails provide abundant opportunities for OHV use.

### 3.3.7.1.1.1. Motorized Travel

Motorized travel in the Fortymile Subunit can be divided into two primary categories: highway and off-highway vehicle use. Most numerous are the Taylor Highway travelers, who arrive to the area by means of self-contained vehicles such as passenger vehicles, motor homes, tour buses, and vehicles pulling trailers. Drawn to the area by its array of recreational opportunities including camping, fishing, hiking and backpacking, photography, and wildlife viewing, travelers typically arrive during the spring, summer, and early fall months (May through September). It is during this time that visitor use is greatest at BLM-managed waysides and campgrounds along the Taylor Highway.

Between mid-August and late-September, motorized travel increases with the advent of the fall big game hunting season. During this time, travel along the Taylor Highway increases significantly as highway vehicles scout the area for game and areas to stage for OHV use. Although the majority of OHV use occurs predominately on existing roads and trails, there is an increasing trend in cross-country travel by hunters accessing remote areas, and by those retrieving game. This type of travel pattern often leads to route-proliferation. These user-created routes are often unsustainable and can cause significant resource damage including, but not limited to, soil compaction, vegetation deterioration, and poor water quality. As is the case in much of Alaska, the majority of existing routes are the result of user-created trails that either follow historic non-recreational routes (such as mining or access) or were created by OHV users repeatedly driving cross-country. Accordingly, many of the existing routes within the Fortymile Subunit are not sustainable from a resource management perspective.

Throughout the summer season, motorized watercraft are also employed within the Fortymile river corridor, providing access to several federal mining claims that are located throughout the region. The authorization for this use comes from the Fortymile River Management Plan (BLM 1983a) which allows for the use of motorized boats on scenic and recreational segments of the river corridor. However, on non-navigable wild segment, this use is not permitted except under the provisions of 43 CFR 3809.

Travel outside of the Fortymile WSR Corridor is currently unrestricted. Until the RMP process is complete, the Fortymile MFP, in conjunction with the Fortymile River Management Plan, will be the relevant planning documents for travel-related activities on BLM-managed lands. The Fortymile River Management Plan states that OHV use, other than vehicles weighing less than 1,500 pounds gross vehicle weight rating (GVWR), are prohibited without a permit or approved Plan of Operations within the Fortymile River corridor. For areas outside of the corridor, the Fortymile MFP states that all areas will remain open to winter use for vehicles weighing less than 6,000 pounds; while, existing roads and trails will remain open to all vehicles when the ground is frozen to a depth of six inches or more. At all other times of the year, vehicles exceeding 6,000 pounds or any vehicle with a blade, will require a permit, and vehicles weighing 6,000 pounds or less will be limited to existing roads and trails except for incidental use. Limited inventory of trails on BLM-managed lands currently exists within the Fortymile Subunit, and aside from recognized easements, trail use, and the location of trail activity, are largely unknown.

#### Roads

Lands accessed along the Taylor Highway and secondary road systems are primarily in State and private ownership. However, these roads do provide a level of access not found elsewhere in the

Fortymile Subunit. Except for local roads within and around BLM-managed campgrounds and facilities, there are no other publicly maintained roads within the subunit.

### **Trails**

Other than specific ANCSA Section 17(b) easements reserved through Native corporation lands, there are no designated BLM trails within the Fortymile Subunit. The State of Alaska claims numerous rights-of-ways across federal lands under State-identified R.S. 2477 routes, including those identified in AS 19.30.400. However, the validity of these determinations will occur outside of this planning process.

Located at Mile 65 of the Taylor Highway, near the community of Chicken, the Chicken Ridge Trail provides multiple use access to public lands in the area. When not employed for mining access in the spring, the trail is most commonly used from mid-August through late-September, in concurrence with big game hunting seasons. It is during this time that motorized travel along the Chicken Ridge Trail is most notable with an increased presence of OHV use.

Since the trail occurs on state and private lands, the BLM has no management responsibilities for travel-related activities or access to this route. However, because it is the primary access route to BLM-managed lands in the Hutchinson Creek area, it remains a key feature within the Fortymile Subunit.

### **Airstrips**

Access to the Fortymile Subunit by air is limited to remote landings by fixed-wing and rotary wing aircraft capable of landing on river gravel bars, ridgetops, and winter snows, and subject to reasonable provisions to protect the values of the Fortymile WSR. Although no remote, public airstrips have been developed by the BLM, Joseph Airstrip, in the Middle Fork drainage, serves as a traditional access point for float-boaters of the Fortymile River. In addition, all communities within the Fortymile Subunit have established air strips maintained by the State of Alaska.

#### **3.3.7.1.1.2. Non-Motorized Travel**

For those travelers seeking non-motorized forms of transportation, the Fortymile Subunit provides many opportunities in a variety of scenic settings. Float boating activities including rafting, kayaking, and canoeing, are all commonly enjoyed within the Fortymile River corridor, while the activities of hiking, biking, and horseback riding, though less prevalent, may also occur.

For boaters contemplating a trip down the Fortymile River, many options are available, ranging from one-half day to two weeks. The longest trip may begin at the Joseph Airstrip in the Middle Fork drainage, followed by an 8–12 day float trip to Eagle. An afternoon outing is available from the Mosquito Fork Bridge Wayside to the South Fork Bridge Wayside. With its variety of access points providing a diversity of floating times, the Fortymile River offers trips for boaters of almost any skill level.

Located at Mile 68 of the Taylor Highway, approximately one mile east of the community of Chicken, the Lost Chicken Dredge Overlook Trail supports non-motorized travel within the river corridor. The 1.5 mile trail provides travelers with an opportunity to hike, pull-off to rest, and learn more about the local area. At the end of the short footpath, hikers are rewarded with a view of one of the few remaining dredges accessible to Alaska road travelers today. Although it was operated for only a season and a half before its shutdown in 1937, the Lost Chicken Dredge

remains a significant icon of Alaskan history that helped shaped a new technological phase in mining operations.

### **3.3.7.1.2. Forecast or Anticipated Demand for Use**

With increased pressures from growing populations and advances in recreational vehicle technology, travel demands in the Fortymile Subunit will see significant growth in both land use and activity participation.

Since OHV use accounts for the majority of travel-related activities in the Fortymile Subunit, it is expected that the demand for this activity will continue to grow in the future. As this occurs, the need for additional trail access and management for these trails will be necessary. Mechanisms for managing the effects of OHV use include designating routes, prohibiting use in sensitive areas, providing user education in the form of interpretive signs and brochures, and providing appropriate law enforcement. Doing so may further ensure that user satisfaction remains high while maintaining minimal impacts to the natural environment.

Increases in non-motorized modes of travel including recreational boating and hiking, are also expected, as demonstrated by recent trends. Boating and hiking have become increasingly prominent forms of recreational travel in the area, as visitors look for more cost-effective ways to recreate.

Overall, visitor use demand in the Fortymile Subunit is increasing. Subsistence and recreational users utilize the area to participate in many different activities related to travel management, and to obtain specific experiences and benefits from these activities. Simply adding more trails and/or travel opportunities may or may not be the appropriate method of travel management for the area. This RMP will analyze a range of alternatives to determine appropriate levels of travel-related use and development in the area.

### **3.3.7.2. Steese Subunit**

#### **3.3.7.2.1. Current Level and Location of Use**

Travel and transportation within the Steese Subunit occur for a variety of reasons, including recreational access to public lands, access to mineral resources, and access to traditional subsistence areas, utilizing primitive roads, existing travel routes, trails rivers and aircraft. Examples of travel activities commonly conducted in the area include hiking, recreational boating such as rafting, kayaking, and canoeing, dog-sledding, aircraft, and OHV use.

##### **3.3.7.2.1.1. Motorized Travel**

Motorized travel in the Steese Subunit typically occurs during the fall and winter months, from August to early May and is mainly attributed to sport hunting and some traditional subsistence activities of hunting and trapping. During the month of February, sled-dog racers in the Yukon Quest International Sled Dog Race traverse portions of the South Unit. Opening this trail allows other motorized users access to remote areas.

Easier travel and the ability to cross Birch Creek and other waterbodies by motorized vehicles in the winter (within specified vehicle limitations), opens up most of the Steese Subunit to

wintertime travel. During this time, snowmobiles become the primary mode of travel. A majority of the winter travel centers around Central, Alaska and the Yukon Quest trail.

During the non-winter months (May through October), features of topography, soils, vegetation, and permafrost make travel in the Steese Subunit particularly difficult, however, there are a number of travel routes used during hunting season for access to wildlife resources. With the advent of the summer season, motorized watercraft are also employed within the Steese Subunit. Users can put on at the Steese Highway bridge (Mile 147) and motor up-river for approximately 30 miles, to Mile 80 of Birch Creek, where BLM navigable determination ends, or down-river for access to the Yukon Flats NWR.

### **Roads and Primitive Roads**

Access to the Steese National Conservation Area by highway vehicles, such as passenger vehicles, motor homes, and vehicles pulling trailers, is limited to trailheads along the Steese Highway. Trailheads normally do not reach capacity, even on busy weekends and holidays. Much of the travel occurs during the big game hunting seasons, when the Upper and Lower Birch Creek waysides approach capacity. Around the summer solstice, crowding may also occur at Eagle Summit Wayside. Four-wheel drive vehicles can access the Steese Subunit along a number of State primitive roads (including Faith Creek, Harrison Creek, Miller Creek, Montana Creek, Porcupine Creek, and Portage Creek roads), although these are generally not maintained. In addition, the South Steese Unit may also be accessed using Fryingpan Creek Road. It is likely that the Great Unknown Creek, Harrison Creek, and Fryingpan Creek drainages have the largest potential for increased travel-related use in the summer by motorized users in the South Unit. Preacher Creek Drainage, including Bachelor Creek will continue to receive use and has the greatest potential for increased use in the North Unit.

### **Steese Highway**

Designated as a state scenic byway for its scenic, natural, recreation and historic values, the 175 mile-long Steese Highway connects Fairbanks with the small town of Circle on the banks of the Yukon River. The highway also provides access to BLM-managed public lands north of Fairbanks. From the Steese Highway, one can explore the Steese National Conservation Area, the White Mountains NRA, Beaver Creek WSR, and Birch Creek WSR.

### **Trails**

Although there are no designated BLM motorized trails within the Steese National Conservation Area, many miles of user-created OHV routes, associated with hunting and trapping opportunities, have come to exist. These routes are generally unsustainable from a resource management perspective, due to the features of topography, soils, vegetation, and permafrost in the area.

While existing primitive roads and travel routes are the predominate access used by OHVs, both winter and summer cross-country travel does occur in many areas, thus expanding the system of user-created routes. Many have been identified by BLM, and some have been inventoried using GPS, while others continue to remain unknown and uninventoried.

### **Airstrips**

Access to the Steese Subunit by air is provided by Arctic Circle, Circle and Central airports as well as remote landings by fixed-wing and rotary wing aircraft. Access to the Steese National Conservation Area by air is limited to remote landings by fixed-wing and rotary wing aircraft

capable of landing on river gravel bars, ridgetops, and winter snows, and subject to provisions to protect the values of Birch Creek. Although no remote public airstrips have been developed by the BLM, a few unimproved airstrips, associated with mining and other activities, have been established within the National Conservation Area including Volcano Creek, McLean Creek, Sheep Creek and Preacher Creek airstrips.

### **3.3.7.2.1.2. Non-Motorized Travel**

For those travelers seeking non-motorized water based forms of transportation, the Birch Creek WSR provides visitors a unique opportunity to travel through the Steese National Conservation Area by boat. Floaters begin their trip at the Upper Birch Creek Wayside and proceed down river for 110 miles to Lower Birch Creek Wayside. The average float-time for this trip is approximately six days. A shorter float opportunity also exists from Lower Birch Creek Wayside (Mile 110 Birch Creek) to the Steese Highway bridge (Mile 147). This float can take up to eight hours to cover the 16 river miles.

The Steese National Conservation Area also affords visitors numerous hiking opportunities, with the majority of use occurring along the 27-mile Pinnell Mountain National Recreation Trail. Beginning along the Steese Highway, the trail traverses a ridgeline between Twelvemile Summit and Eagle Summit, and offers its users views stretching from the Alaska Range to the Yukon Flats. There are also short access trails associated with Birch Creek NWR waysides and a short interpretive trail associated with Eagle Summit Wayside. Non-motorized cross-country travel is allowed within the subunit.

Other non-motorized use occurs rarely within the subunit. These activities include cross-country horse back riding and mountain bike use along the Pinnell Mountain NRT during summer months and cross-country skiing, dog sled and skijoring along trails during the winter months.

### **3.3.7.2.2. Forecast or Anticipated Demand for Use**

With rising demands from increasing populations, advances in recreational vehicle technology, and the area's proximity to Fairbanks, the Steese National Conservation Area could see continued growth in both land use and activity participation. Since OHV use accounts for a sizeable portion of travel-related activities in the Steese National Conservation Area, the demand for this activity will likely continue to grow in the future. As this occurs, the need for additional trails and mechanisms for managing these trails may become necessary. Increasing demand will likely be amplified by the continued rise in gasoline prices, as visitors look for locations to recreate closer to home. The growth of non-motorized modes of travel including recreational boating, hiking, biking, horseback riding, and dog-sledding are also forecasted by recent trends. To accommodate this growth, new sustainable non-motorized trails may need to be constructed.

### **3.3.7.2.3. Key Features or Areas of High Potential**

Established by Congress in 1968, the Pinnell Mountain National Recreation Trail is one of the few maintained primitive hiking trails in Interior Alaska. It is managed for a Primitive experience, where users feel isolated from the sights and sounds of humans, encounter a high degree of risk and challenge, and use outdoor skills. Pinnell Mountain National Recreation Trail users can experience the remote backcountry areas of the Steese National Conservation Area and enjoy outstanding views of the White Mountains, the Crazy Mountains, the Alaska Range to the south,

and the surrounding Yukon-Tanana Uplands and Yukon River valley and during June and July, the midnight sun.

### **3.3.7.3. Upper Black River Subunit**

#### **3.3.7.3.1. Current Level and Location of Use**

Travel and transportation within the Upper Black River Subunit occur for a variety of reasons including recreational access to public lands and access to traditional subsistence resources. Examples of travel activities commonly conducted in the area include motorized river boating, aircraft use, winter snowmobile use, and hiking associated with subsistence hunting activities.

##### **3.3.7.3.1.1. Motorized Travel**

Attributed primarily to the traditional subsistence activities of hunting and trapping, access to private lands, and intervillage travel, motorized travel in the Upper Black River Subunit typically occurs during the fall and winter months (August-May). It is during this time that visitor use is greatest throughout this remote section of Interior Alaska.

During the non-winter months (May through October), features of topography, soils, vegetation, and permafrost make cross-country travel in the Upper Black River Subunit particularly difficult. During this time, travel is predominantly restricted to motorized river boat and aircraft use. With the advent of the winter season, however, snowmobiles become the primary mode of motorized travel as surfaces (both land and water) begin to freeze and become covered with snow.

#### **Rivers**

Access to the Upper Black River Subunit is very limited. Much of the travel occurs between mid-August and late-September, in concurrence with the fall big game hunting seasons and subsistence activities performed by river boat users from Chalkyitsik. For those travelers seeking non-motorized forms of transportation, the Upper Black River Subunit also provides opportunities for drop-off float boating trips along the larger rivers of the area.

Although the majority of visitor use within the Upper Black River Subunit occurs along the Black River (outside the planning area), greater interest in the Kandik and Black Rivers by the State of Alaska may result in further interest among non-motorized wilderness users of the region. Examples of rivers which may experience greater demand include the Salmon Fork of the Black River, the Little Black River, and the Upper Kandik River.

#### **Trails**

Although there are no designated BLM trails within the Upper Black River Subunit, the presence of user-created OHV routes, associated with hunting and trapping opportunities, may exist. Also, old seismic lines associated with energy exploration may be used for winter travel. It is expected that these routes would be generally unsustainable from a resource management perspective, due to the features of topography, soils, vegetation and permafrost in the area. BLM has not conducted a trails inventory in the Upper Black River Subunit, thus the extent of trails is unknown.

#### **Airstrips**

Access to BLM-managed lands by air is limited to remote landings by fixed-wing and rotary wing aircraft capable of landing on river gravel bars, ridgetops, and winter snows. Aircraft are generally unrestricted in the Upper Black River Subunit. Although no remote public airstrips have been developed by the BLM, few unimproved airstrips, associated with oil and gas exploration activities, have been established on private lands.

### **3.3.7.3.2. Forecast or Anticipated Demand for Use**

Trends indicate that there may be increasing use and demand for access to the Upper Black River Subunit for sport hunting and trapping opportunities. As an extremely remote area of Interior Alaska, it may become identified by hunters and trappers as an area with harvest potential. Additionally, potential changes in subsistence use patterns could result in increased use of the area for subsistence in the future. It is anticipated that the area could receive an increased number of SRP applications for hunting and trapping activities.

### **3.3.7.4. White Mountains Subunit**

#### **3.3.7.4.1. Current Level and Location of Use**

As an integral part of virtually every activity that occurs in the White Mountains NRA, travel and transportation occur for a variety of reasons, including recreational access to public lands and access to traditional subsistence areas. Visitors to the White Mountains NRA utilize existing roads, rivers and trails as the primary means for access. Examples of travel activities commonly conducted in the area include hiking and recreational boating such as rafting, kayaking, and canoeing, dog-sledding, skijoring, and aircraft use. In addition, the presence of new and existing trails provide abundant opportunities for OHV use.

##### **3.3.7.4.1.1. Motorized Travel**

Motorized travel in the White Mountains NRA can be divided into two primary categories including highway and off-highway vehicle use. Most numerous are the winter OHV users, who are drawn to the area by its over 200 miles of groomed winter trails and 12 public-use cabins. It is during this time that visitor use is greatest at BLM-managed cabins and trailheads throughout the area.

Easier travel and the ability to cross the Beaver Creek by motorized vehicle in the winter (1,000 pounds curb weight and less), opens up most of the White Mountains NRA to wintertime travel. A majority of the winter travel access in the White Mountains NRA centers around the established, maintained winter cabins and trails system. Those sections of trail near the road system tend to get the majority of use by both motorized and non-motorized user groups. Sections of trail further from the road system tend to get less use, as they are less accessible in a single day trip. Use of the more remote sections of trail is usually associated with rental of one or more public use cabins, where motorized access predominates. Main access points in the winter months are at the Wickersham Dome (Mile 28) and Colorado Creek (Mile 57) trailheads on the Elliott Highway, and McKay Creek (Mile 42) and U.S. Creek (Mile 57) trailheads on the Steese Highway.

During the non-winter months (May through October), features of topography, soils, vegetation, and permafrost make non-road travel in the White Mountains NRA particularly difficult. Boats with motors up to 15 horsepower are allowed to launch in Nome Creek (the put-in to float Beaver

Creek). There are four private in-holdings on Beaver Creek. Boats with motors larger than 15 horsepower may be encountered at these in-holdings, but are generally used for localized river travel only. In addition, some float-plane use is also associated with these private inholdings.

Nome Creek valley is the main point of summer access in the White Mountains NRA. It contains the only road suitable for automobile travel in the NRA. This area has the largest potential for increased travel-related use during the summer months, by both motorized and non-motorized users.

### **Roads**

Access to the White Mountains NRA by highway vehicles, such as passenger vehicles, motor homes, and vehicles pulling trailers, is limited to Nome Creek valley, to trailheads along the Steese and Elliott highways, and to Cripple Creek Campground. Automobiles can also access the Fred Blixt cabin (Mile 62.5 Elliott Highway), via a short road that is maintained year-round by the BLM. Campgrounds and trailheads normally do not reach capacity, except for some holidays or during moose hunting season. Much of the summer related travel in the White Mountains NRA occurs during the fall big game hunting seasons, from mid-August through late-September. During this time, the campgrounds and trailheads may occasionally reach capacity; however, nearby overflow and roadside parking are generally available. Much of the automobile and recreational vehicle access in the White Mountains NRA is used to stage and support OHV activities (including snowmobiles and ATVs, and river floating).

### **Trails**

Although there are currently no designated BLM motorized trails within the White Mountains NRA, many miles of user-created OHV routes exist. These include trails along the southern and western boundaries of the NRA due to proximity to the highway, trails on nearby ridgelines which are suitable for OHV travel, pre-ANILCA trails, and old seismic lines. The primary purpose of winter trails are to provide access to recreational cabins.

While existing roads and trails are the predominate routes used by OHVs, cross-country travel does occur in many areas. This has resulted in additional user-created routes. Much of the OHV use in the White Mountains NRA occurs in the Nome Creek valley on roads, tailings piles (from previous mining activity) and on trails (both established and new user-created) that originate in the valley. The current trail system has doubled in size since 1985. An estimated two miles of user-created routes are added annually. Miles of user-created trails will continue to increase until a system of designated trails can become established.

### **Airstrips**

Access to the White Mountains NRA by air is limited to remote landings by fixed-wing and rotary wing aircraft capable of landing on river gravel bars, ridgetops, and winter snows, and subject to reasonable provisions to protect the values of Beaver Creek WSR. Although no remote public airstrips have been developed by the BLM, few unimproved airstrips, associated with mining activities, have been established within the White Mountains NRA.

#### **3.3.7.4.1.2. Non-Motorized Travel**

For travelers seeking non-motorized forms of transportation, the Beaver Creek WSR provides a unique opportunity to travel through the White Mountains NRA by boat. Floaters begin their trip

at a small BLM-maintained staging area just past the Ophir Creek Campground, located along Nome Creek Road. From there, visitors can float on Nome Creek for approximately 2.5 miles to the confluence of Beaver Creek. Visitors can then float for approximately 107 miles to a common fly-out point, located just past Victoria Creek, or continue another 170 miles to the Yukon River bridge. The average float-time to Victoria Creek is approximately six days, and an additional 8 to 10 days to float to the Yukon River bridge and the Dalton Highway.

Victoria Creek is a common location for air taxi services to pick up floaters, as there is no road access to the Beaver Creek WSR past the put-in at Nome Creek. Floaters can also choose to continue down Beaver Creek, out of the White Mountains NRA, for another 170 miles to the Yukon River, then another 84 miles on the Yukon River, eventually taking out at the Dalton Highway bridge. The trip to the Yukon River bridge on the Dalton Highway can require an additional 10 or more days of float-time. Boaters continuing on to the Yukon River bridge usually prefer to use canoes, while boaters opting for air taxi returns usually use rafts or other inflatable boats that can be broken down, deflated and transported in small aircraft.

Throughout the year, non-motorized trails in the White Mountains NRA provide access to public lands for a wide variety of additional activities. During the summer months, some BLM trails are managed for hikers, bikers, horseback riders, and other non-motorized trail users who like to get away from it all. During the winter months, these trails are also employed for the activities of cross-country skiing, skijoring, and dog-sledding.

There is also high potential for additional non-motorized access, such as hiking trails, in the Wickersham Dome area. With its excellent views, generally good soils, and close proximity to Fairbanks, the Wickersham Dome area offers a logical location for the addition of new sustainable hiking trails to accommodate the regions growing population.

### **3.3.7.4.2. Forecast or Anticipated Demand for Use**

Trends and field observations show increasing use and demand for travel-related activities and access in the White Mountains NRA, given its close proximity to Fairbanks. Popularity of the White Mountains NRA cabins and trails, local population numbers, and OHV ownership are all currently on the rise. Increasing demand will likely be amplified by continued high gasoline prices, as visitors look for locations to recreate closer to home. The increased demand for non-motorized modes of travel including recreational boating, hiking, horseback riding, dog-sledding, and skijoring, is also forecasted by recent trends.

## **3.3.8. Withdrawals**

### **3.3.8.1. ANCSA and ANILCA Withdrawals**

Virtually all of BLM-managed lands within the planning area are under some type of withdrawal pursuant to ANCSA 17(d)(1), ANILCA, the Wild and Scenic Rivers Act, or some other federal law (Table 3.35, "Existing BLM Withdrawals in the Planning Area"). Some areas are covered by multiple withdrawals.

The White Mountains NRA and the Steese National Conservation Area are withdrawn by both Public Land Order (PLO) 5180 and ANILCA. Subject to valid existing rights, under PLO 5180 these lands are withdrawn from all forms of appropriation under the public land laws, including

selection by the State of Alaska and from location and entry under the mining laws (except for metalliferous minerals) and from leasing under the Mineral Leasing Act of February 25, 1920, as amended. They are further withdrawn from mineral location by ANILCA. Additionally, lands within one-half mile of Birch Creek and Beaver Creek are withdrawn by the Wild and Scenic Rivers Act pursuant to ANILCA.

The ANILCA withdrawals on the Steese National Conservation Area and White Mountains NRA (Map 90) do not withdraw the lands from the mineral leasing laws or the Mineral Materials Act. However, PLO 5180 closes these areas to mineral leasing. The 1986 RMPs for both the White Mountains NRA and the Steese National Conservation Area provide for the disposal of sand, gravel, rock and other salable minerals under 43 CFR 3600, if such disposals are compatible with other provisions of each respective plan.

Subject to valid existing rights, Section 402(b) of ANILCA withdraws the Steese National Conservation Area from location, entry, and patent under United States mining laws. However, it further provides that where consistent with the land use plan for the area, the Secretary may classify lands within the National Conservation Area as suitable for locatable mineral exploration and development and open such lands to entry, location, and patent under United States mining laws. Lands within one-half mile of Birch Creek WSR are also withdrawn under the Wild and Scenic Rivers Act, pursuant to ANILCA. The BLM could recommend opening of the Steese National Conservation Area (outside of the Birch Creek withdrawal) to locatable mineral entry through this RMP.

The current RMP for the Steese National Conservation Area (BLM 1986a) recommends that new mineral development in certain areas outside of the Primitive and Semi-Primitive Motorized Restricted Management Units can be allowed as long as it does not significantly impair recreational values or use. However, an opening order was never issued and both PLO 5180 and withdrawal under Section 402(b) of ANILCA are still in effect. Currently, the Steese National Conservation Area is closed to both locatable and leasable minerals.

In sum, the BLM could recommend opening the Steese National Conservation Area to both locatable and leasable minerals through this RMP. To open the area to leasable minerals, the Secretary would need to modify or partially revoke PLO 5180 and the RMP would need to include a decision stating that the area was open mineral leasing. To open all or parts of the National Conservation Area to all locatable minerals, the Secretary would need to modify or partially revoke the PLO 5180 and issue an order opening the lands in the National Conservation Area to mineral entry and location under the United States mining laws. To open the National Conservation Area just to metalliferous entry, the Secretary would only need to issue an opening order, as PLO 5180 does not close the area to metalliferous minerals.

Subject to valid existing rights, ANILCA Section 1312(b) withdraws the White Mountains NRA from location, entry, and patent under United States mining laws. Lands within one-half mile of Beaver Creek WSR are withdrawn under the Wild and Scenic Rivers Act, pursuant to ANILCA. There are no longer any valid mining claims in the NRA. Unlike the Steese National Conservation Area, ANILCA does not contain a provision allowing the Secretary to open the NRA to mineral entry and location.

In sum, the BLM could recommend partial revocation or modification of PLO 5180 in the White Mountains NRA through this RMP. If the Secretary acted on this recommendation, the NRA would still remain closed to mineral entry and location under ANILCA. However, mineral leasing

could occur if PLO 5180 were modified or revoked and if the RMP included a decision to open lands to the mineral leasing laws.

Only ANCSA withdrawals apply in the Upper Black River Subunit. Lands in this subunit are withdrawn from all forms of appropriation under the public land laws by PLO 5173 and made available for selection by Alaska Native village and regional corporations. Although the withdrawal closed these lands to location and entry under the mining laws and to leasing under the Mineral Leasing Act of February 25, 1920 as amended; valid existing rights at the time of withdrawal were protected. However, there are no existing federal mining claims in the Upper Black River Subunit. The BLM could recommend opening the Upper Black River Subunit to mineral entry and leasing through this RMP. If the Secretary acted on this recommendation by modifying or revoking PLO 5173, the area would be opened to locatable minerals. Mineral leasing could occur if PLO 5173 was modified or revoked and if the RMP included a decision to open lands to the mineral leasing laws.

The vast majority of BLM-managed lands in the Fortymile Subunit are withdrawn under PLOs 5173, 5179 (as amended by 5250), 5184 or amendments to these PLOs. These PLOs close the lands to mineral entry, location, and leasing. Additionally, lands within one-half mile of the banks of the “wild” segments of the Fortymile Wild and Scenic River are withdrawn under the Wild and Scenic Rivers Act pursuant to ANILCA. The “recreational” and “scenic” segments are not withdrawn by ANILCA.

The Fortymile MFP (BLM 1980) recognized the importance of mineral resources and recommended that steps should be taken to provide access to and encourage development of those resources. One of the objectives of the MFP was that “By 1990, all land which is public land or reverts to public land, and is closed to mineral entry by unnecessary withdrawals, should be reopened to mineral entry.” However, the PLOs are still in effect.

The BLM could recommend partial revocation of the ANCSA withdrawal(s) in the Fortymile Subunit through this RMP. If the Secretary acted on this recommendation, lands within one-half mile of the “wild” segments of the Fortymile WSR would still remain closed to mineral entry and location under ANILCA. Mineral leasing could occur outside of the “wild” segments of the Fortymile WSR if ANCSA withdrawal(s) were modified or partially revoked and if the RMP included a decision to open lands to the mineral leasing laws.

Table 3.35 lists existing PLOs, as amended, excluding withdrawals by other agencies. These withdrawals are generally for administrative use by the BLM (i.e., campground) or to classify lands for selection by either Native corporations or the State of Alaska (ANCSA 17(d)(1)).

**Table 3.35. Existing BLM Withdrawals in the Planning Area**

PLO number	PLO Type or Agency	Description
PLO 0386	BLM	Reducing withdrawal of public lands along Alaska Highway (modified by PLOs 4234 and 1613)
PLO 0399	BLM	Revocation of Executive Order (EO) 1324 1/2 withdrawing public lands containing hot springs in Alaska and amending EO 5389 to apply to hot springs in Alaska
PLO 0519	BLM	Administrative Site, Central Field Station (7 acres)
PLO 1699	BLM	Administrative Site, Chicken Field Station (11 acres)
PLO 753	BLM	Administrative Site, Eagle Field Station (12 acres)
PLO 1768	BLM	Administrative Site, Tanacross

PLO number	PLO Type or Agency	Description
PLO 3432	BLM	Withdrawal for public recreation values, Eagle Recreation Site
PLO 3943	BLM	Withdrawal for public recreation values, West Fork Campground and South Fork Wayside
PLO 4176	BLM	Withdrawal for public recreation values, Steese Highway
PLO 5150	BLM	Withdrawal for Trans-Alaska Pipeline Corridor
PLO 5182	BLM	Amended PLO 5150 (outer corridor)
PLO 5190	BLM	Modification and correction of PLO 5150, Trans-Alaska Pipeline Corridor
PLO 5173	ANCSA 17(d)(1)	Withdrawal for selection by Regional Corporation (Tanana); amended by PLOs 5252, 5321, and 5391
PLO 5178	ANCSA 17(d)(1)	Withdrawal for selection by Regional Corporation (Copper River); amended by PLOs 5213, 5214, 5252, and 5257.
PLO 5179	ANCSA 17(d)(1)	Withdrawal of Lands in Aid of Legislation concerning addition to or creation of conservation units; modified by PLOs 5192, 5250, 5251, 5257, and 5254
PLO 5180	ANCSA 17(d)(1)	Withdrawal for Classification and for Protection of Public Interest in lands; amended by PLOs 5193, 5242, 5250, 5251, 5254, 5257, 5321, 5391, and 5418.
PLO 5184	ANCSA 17(d)(1)	Withdrawal for Classification or Reclassification of some areas withdrawn by Section 11 of ANCSA
PLO 5186	ANCSA 17(d)(1)	Withdrawal for Classification and Protection of Public Interest in Lands Not Selected by State. Amended by PLO 5254 and 5242
PLO 5187	ANCSA 17(d)(1)	Withdrawal for classification and Protection Public Interest in lands for Army
PLO 5563	BLM	Amend EO 5389 to permit withdrawal of land under Section 11 of ANCSA
PLO 5657	BLM	Classification of Lands for State Selection, amends existing PLOs
PLO 6092	BLM	Classification and Open to Entry for State Selection, amends existing PLOs
PLO 6533	BLM	Classification and Open to Entry for State Selection; partial revocation 5150

### 3.3.8.2. Other Withdrawals

There are other types of withdrawals besides those which were authorized by ANCSA or ANILCA. These include BLM withdrawals for administrative sites and withdrawals by other agencies (Table 3.35, "Existing BLM Withdrawals in the Planning Area" and Table 3.36, "Existing Withdrawals to Other Agencies in the Planning Area"). All of the withdrawals which are reserved for or managed by the BLM will be reviewed to determine if they should be retained, relinquished, or whether some other action should be taken. Those withdrawals for the use of other agencies and purposes will be reviewed for status and will continue to be in effect until a change is required or warranted.

Recreation withdrawal in Eagle (PLO 3432): On August 13, 1964, 816 acres, located next to the City of Eagle Alaska, were withdrawn from all forms of appropriation under the public land laws and reserved under the jurisdiction of the BLM for public recreation purposes. The BLM currently maintains a campground on the property. Historic Fort Egbert is located nearby.

Eagle Administrative Site (PLO 753): On September 15, 1951, 12.23 acres of land were withdrawn from all forms of appropriation under the public land laws and reserved for use of the BLM as an administrative site. This site is located in the City of Eagle and is used by the National Park Service as headquarters for the Yukon-Charley Rivers National Preserve. Management and use of this site is controlled by a Memorandum of Understanding between the BLM and the NPS.

Chicken Administrative Site (PLO 1699): On July 30, 1958, 11.35 acres were withdrawn from all forms of appropriation under the public land laws and reserved for use of the BLM as an administrative site near Chicken, Alaska. The site provides housing and storage facilities.

South Fork Wayside and West Fork Campground (PLO 3943): On March 2, 1966, a 40 acre site where the South Fork Wayside is located and an 80 acre site where the West Fork Campground is located were withdrawn and reserved for protection of public recreation values.

Tanacross Administrative Site (PLO 1768): On December 15, 1958, 108 acres of land was withdrawn from all forms of appropriation under the public land laws and reserved for use of the BLM as an administrative site near Tanacross, Alaska. The BLM maintained a Fire Guard Station on the site. The station was closed in the mid 1980s. Since then 77.62 acres have been conveyed to Native corporations and 24.70 acres of the original site remain under BLM's management. This land is selected by the State.

Central Administrative Site (PLO 519): On August 30, 1948, 7.11 acres were withdrawn from all forms of appropriation under the public land laws and reserved for the use of BLM as an administrative site in Central, Alaska. Originally used as a Fire Guard Station, it is now a BLM field station. The site provides housing and storage facilities.

Steese Highway Recreational Withdrawal (PLO 4176): Issued on March 9, 1967, five tracts of land along the Steese Highway were withdrawn for protection of recreational values. The two of the tracts were conveyed to the State in 1991 (patent #50-91-0224). The remaining tracts under PLO 4176 include:

1. Cripple Creek: Mile 60 Steese Highway and the site of the Cripple Creek Campground.
2. US Creek: Mile 56 Steese Highway and the site of the US Creek Wayside.
3. Perhaps Creek: Mile 53 Steese Highway, this site is currently undeveloped.

**Table 3.36. Existing Withdrawals to Other Agencies in the Planning Area**

PLO number	Agency	Description (general location)
EO 7596	War Department	Withdrawn for Military (Fort Wainwright)
EO 8020	War Department	Withdrawn for Military - Flood Control (North Pole)
EO 8847	War Department	Withdrawn for aerial bombing range (Tanana Flats)
PLO 0684	Air Force	Withdrawn for Military (Eielson)
PLO 0690	Air Force	Withdrawn for Military (Fort Wainwright)
PLO 0748	Air Force	Correction to PLO 690
PLO 0794	Air Force	Withdrawn for Military (Eielson)
PLO 0818	Air Force	Withdrawn for Military (Fort Wainwright)
PLO 0854	Air Force	Withdrawn for Military (Fort Wainwright)
PLO 0910	Army	Withdrawn for Military (Gerstle River)
PLO 1153	Army	Withdrawn for Military (Big Delta)
PLO 1203	Air Force	Withdrawn for Military (Eielson)
PLO 1205	Air Force	Withdrawn for Military use - Air Force (Eielson), amended by PLO 2768 and PLO 6453
PLO 1345	Air Force	Withdrawn for Military (Eielson)
PLO 1444	Air Force	Withdrawn for Military (Northway)
PLO 1521	Army	Withdrawn for Military (Eielson)
PLO 1523	Army	Withdrawn for Military (Eielson) and correction to PLO 1345
PLO 1574	Air Force	Withdrawn for Air Force Recreation Site (Birch Lake)
PLO 1640	Army	Withdrawn for Military
PLO 1760	Air Force	Withdrawn for Military (Fairbanks and Fort Wainwright)
PLO 1887	Army	Withdrawn for Military (Haines-Fairbanks Products Pipeline System)
PLO 1917	Army	Withdrawn for Military (Eielson)
PLO 2948	Army	Withdrawn for military purposes, Dept. of Army (Donnelly Flats)
PLO 3013	Army	Withdrawn for cold weather experimental purposes (Permafrost Station, Fairbanks); revoked PLO 533

PLO number	Agency	Description (general location)
PLO 6677	Air Force	Beaver Creek Radio Relay Site (near Northway)
PLO 6705	Air Force	Beaver Creek Research Site (near Northway)
PLO 1613	Bureau of Public Roads	Withdrawn for an easement for highway purposes
PLO 1980	Forest Service	Withdrawn for research site (Shaw Creek Experimental Station)
PLO 2550	FAA <sup>a</sup>	Withdrawn for airport - vacating Air Navigation Site #186
PLO 4349	FAA	Withdrawn for FAA Administrative Site (Northway)
PLO 3708	NASA	Withdrawn for National Aeronautics and Space Administration (NASA) Facilities (Gilmore Creek Tracking Station)
PLO 6709	NOAA	Modify PLO 3708 - transfer administration from NASA to National Oceanic and Atmospheric Administration (NOAA)
PLO 4234	GSA	Withdrawn for General Services Administration (GSA) Site
PLO 5645	GSA	Withdrawn for Customs and Immigration Station (Alaska-Canada border)
PLO 7336	GSA	Withdrawn Extension, Poker Creek Border Station.
PLO 4508	Department of Commerce	Withdrawn for Geophysical Observation

<sup>a</sup>Federal Aviation Administration

## 3.4. Special Designations

The following sections describe existing special designations in the planning area.

### 3.4.1. Areas of Critical Environmental Concern and Research Natural Areas

#### 3.4.1.1. Areas of Critical Environmental Concern

Areas of Critical Environmental Concern (ACECs) are a designation unique to the BLM. BLM regulations (43 CFR Part 1610) define an ACEC as an area "...within the public lands where special management attention is required (when such areas are developed or used or where no development is required) 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." While an ACEC may emphasize one or more unique resources, other existing multiple-use management can continue within an ACEC as long as the uses do not impair the values for which the ACEC was designated. Section 202 (c)(3) of FLPMA mandates the BLM to give priority to the designation and protection of ACECs in the development and revision of land use plans. BLM Manual 1613 describes the process followed to nominate ACECs and screen areas for their suitability for ACEC designation. This process is described in more detail in Appendix C, *Evaluation of ACEC Nominations*.

Currently, there are no designated ACECs within the planning area.

##### 3.4.1.1.1. Nominated Areas

During scoping for the Eastern Interior RMP, the Eastern Interior Field Office actively solicited nominations and comments from the public on areas that should receive consideration as ACECs. One area was nominated for ACEC designation by the public during the scoping process. Another ACEC was nominated during the public comment period on the Draft RMP/EIS. In addition to

areas nominated by the public, BLM may internally nominate areas as ACECs. These areas must meet the same criteria as externally nominated areas. During development of the Draft Eastern Interior RMP/EIS, the planning team nominated caribou calving habitat and Dall sheep habitat as ACECs. These areas were split into three distinct ACEC proposals by planning subunit.

**Table 3.37. ACEC Nominations**

Area Nominated	Nominated by	Values cited in nomination
Upper Black River and Salmon Fork of the Black River watersheds (Map 59))	Alaska Wilderness League, Chalkyitsik Village, and one individual	Historic, cultural, and scenic values; anadromous and resident fish habitat; subsistence resources; municipal water supply; contribution to Yukon River fishery.
Fortymile Subunit: Fortymile caribou herd current calving/postcalving habitat; Dall sheep habitat	BLM Planning Team	Caribou calving/postcalving habitat, Dall sheep habitat, ungulate mineral licks
Steese National Conservation Area: Fortymile caribou herd current and recent calving/postcalving habitat; Dall sheep habitat.	BLM Planning Team	Caribou calving/postcalving habitat, Dall sheep habitat, ungulate mineral licks
White Mountains NRA: Fortymile caribou herd historic calving habitat and White Mountains caribou herd habitat; Dall sheep habitat.	BLM Planning Team	Caribou calving/postcalving habitat, Dall sheep habitat, ungulate mineral licks
Mosquito Flats	Two individuals	Wetlands and moose calving

### 3.4.1.1.2. Potential ACECs

Based on interdisciplinary review, the following areas met both the relevance and importance criteria and will move forward for additional consideration as ACECs under various alternatives within this Environmental Impact Statement. Appendix C, *Evaluation of ACEC Nominations* summarizes the review process followed for evaluation of nominated ACECs.

**Table 3.38. Potential Areas of Critical Environmental Concern**

Potential ACEC Name	Acres	Map Reference
Salmon Fork ACEC	621,000	Map Map 59 and 69
Fortymile ACEC	546,000 - 732,000	Maps 60, 61, 62, and 63
Steese ACEC	193,000 - 927,000	Maps Map 64, 65 and 66
White Mountains ACEC	589,000	Map 64
Mosquito Flats ACEC	37,000	Map 63

### 3.4.1.2. Research Natural Areas

A Research Natural Area (RNA), according to 43 CFR Subpart 8223, is “an area that is established and maintained for the primary purpose of research and education.” The land must have at least one of the following characteristics:

- A typical representation of a common plant or animal association,
- An unusual plant or animal association,
- A threatened or endangered plant or animal species,
- A typical representation of common geologic, soil, or water features, outstanding or unusual geologic oil, or water features, or
- The area must be of sufficient number and size to adequately provide for scientific study, research, and demonstration purposes.

According to 43 CFR subpart 8223.1, no person shall use, occupy, construct, or maintain facilities in a research natural area except as permitted by law, other federal regulations, or authorized under provisions of subpart 8233. In addition, no person shall use, occupy, construct, or maintain facilities in a manner inconsistent with the purpose of the research natural area. Scientists and educators shall use the area in a manner that is non destructive and consistent with the purpose of the area. RNAs are a type of ACEC (BLM 2005a).

### 3.4.1.2.1. Existing Research Natural Areas

There are four existing Research Natural Areas (RNAs) within the planning area (Map 48). These RNAs were established by the Steese RMP and the White Mountains RMP (BLM 1986a and BLM 1986b). The identification of these areas as RNAs was based on natural features of scientific interest (Juday et al. 1982) including ecologically valuable and/or scientifically interesting plant species, geologic features, and wildlife habitats. These features were called “type needs” (Juday 1983).

**Table 3.39. Existing Research Natural Areas within the Planning Area**

Name	General Location	Legal Location	Size (acres)
Big Windy Hot Springs	Steese South Unit	FM <sup>a</sup> , T. 4N., R. 16E., Secs. 29 and 32	160
Limestone Jags	White Mountains NRA	FM, T. 8N., R. 1E.	5,170
Mount Prindle	White Mountains/Steese	FM, T. 8N., R. 6E.	5,950
Serpentine Slide	White Mountains NRA	FM, T. 10N., R. 1W.	4,270

<sup>a</sup>Fairbanks Meridian

**Big Windy Hot Springs:** The Big Windy Hot Springs RNA is located on Big Windy Creek, a tributary of South Fork Birch Creek, about 18 miles south of Circle Hot Springs. The RNA contains several undisturbed, medium-grade hot geothermal seeps and pools. Most other hot springs in central Alaska have been modified in ways that have substantially disturbed natural geologic features and vegetation. Big Windy Hot Springs is essentially undisturbed.

At Big Windy Hot Springs, precipitation of dissolved minerals from spring water have formed travertine structures and pools, and altered granite into an uncommon mineral form. Thermophytic bacteria and algae thrive in water up to 142 degrees F. are present. The hot springs provides an important mineral lick for Dall sheep. Northern water shrew (*Sorex palustris*) has been found in the RNA, the furthest north documented occurrence of water shrew in North America (Cook et al. 1997). Big Windy Hot Springs also supports several vascular plant taxa that have widely fragmented distributions, are widely disjunct from their contiguous distribution, or represent steppe and meadow vegetation types (Parker et al. 2003).

**Limestone Jags RNA:** Limestone Jags RNA is located north and east of Beaver Creek, within the White Mountains NRA. The main features of geologic interest are karst (limestone dissolution) features in a subarctic setting (Juday 1989). These include caves, a natural bridge, disappearing streams, and cold springs. Karst features are rare at high latitudes because the slow chemical reaction rates of dry subarctic soils restrict the rate at which they form. In many areas such features were later destroyed by glaciation. One of the largest limestone dissolution cave reported in high latitudes of North America is found in the RNA. Unlike many mountains in the Yukon-Tanana Uplands, the central and southern portions of Fossil Creek Ridge do not appear to have been glaciated during the Pleistocene. As a result, the landforms of the RNA have been shaped over long periods (Juday 1989).

More than 300 species of vascular plants have been collected in the RNA and surrounding area (Juday 1989). The 1982 collection of a moss species, *Andreaeobryum macrosporum*, in the RNA represents the first collection of the species outside of the Brooks Range in Alaska. The cliffs and pinnacles of the RNA provide important escape terrain for Dall sheep. The RNA includes alpine habitat for the White Mountain caribou herd and was part of the Fortymile caribou herd calving area until the late 1960s. Limestone cliffs provide perching and nesting sites for raptors. Rock ledges and talus slopes provide habitat for hoary marmot and collared pika.

**Mount Prindle RNA:** Mount Prindle RNA is located on the boundary between the White Mountains NRA and the Steese National Conservation Area. About 60 percent of the RNA is within the White Mountains and 40 percent is in the Steese. The RNA contains examples of both glaciated landforms and periglacial (unglaciated) features in proximity, illustrating how different cold-climate processes produce different landscapes. At least four glacial advances, spanning several hundred thousand years are evident (Juday 1988), making the area useful in the study of past climates. The periglacial landscape processes have produced remnant features such as granite tors, cryoplanation terraces, and well developed solifluction lobes.

Mount Prindle is one of the highest elevations in the Yukon-Tanana Uplands and provides habitat for *Draba paysonii*, a mustard common in the Rocky Mountains but not in Alaska (Juday 1988). Alpine areas provide nesting habitat for northern wheatear. Cliffs provide perching and nesting sites for raptors. The cliffs and monoliths provide important escape terrain for Dall sheep during the spring and early summer. The RNA was part of the Fortymile caribou herd calving area until the late 1960s and provides summer habitat for caribou from the White Mountain herd.

**Serpentine Slide RNA:** Serpentine Slide RNA is located west of Beaver Creek, within the White Mountains NRA. The name Serpentine Slide comes from the presence of serpentine rocks and a large earthslide above Beaver Creek (Juday 1992). Serpentine is a iron- and magnesium-rich rock of ecological interest. Serpentine exposures are often relatively small because they are fragments of deep-ocean crustal material transported to the surface. The RNA contains one of the largest surface exposures of serpentine in Alaska. Serpentine forms under very specific conditions, making it useful in understanding the origin and history of continental landscapes. The earthslide is an unusual feature in Interior Alaska.

A total of 124 vascular plant species have been collected in or near the RNA (Juday 1992). Three plants collected in the RNA represent range extensions from that described in Hulten (1968). Serpentine soils often support unusual flora that includes species locally adapted to grow under the conditions these rocks produce. Plant species richness is very low on serpentine outcrops in the RNA. Harsh climactic conditions in the region 12,000–14,000 years ago may have caused extinction of locally adapted species and not enough time has elapsed to allow new species to adapt (Juday 1992). There are a few species in the RNA that appear to be relatively tolerant of serpentine conditions.

### 3.4.1.2.2. Nominated Areas

Although there were no nominations for new RNAs, the Alaska Wilderness League recommended that the BLM review and consider expanding the boundaries of three existing RNAs listed in Table 3.40, “Research Natural Area Expansion Nominations” to ensure that they are an adequate size to protect the integrity of the natural systems. During development of the Steese and White Mountains RMPs in the 1980s, larger areas than those ultimately designated as RNAs were evaluated. The Alaska Wilderness League recommended that the success of management related

to the size of these areas be reviewed to determine if the originally proposed larger area is necessary.

Proposed RNA expansions were evaluated under the same criteria used to evaluate ACECs. No maps were submitted detailing areas to be considered for RNA expansion. The area evaluated for Big Windy Hot Springs was the area identified in Alternatives B and C of the Steese National Conservation Area Proposed RMP/Final EIS (BLM 1984). Maps from the *Proposed Geological and Ecological Natural Landmarks in Interior and Western Alaska: Volume 2* (Young and Walters 1982), which evaluated these areas for inclusion in the National Natural Landmarks (NNL) program were used to define the area of consideration for Mount Prindle and Limestone Jags.

**Table 3.40. Research Natural Area Expansion Nominations**

RNA Name	Nominated by	Acres	Reasons cited in nomination
Big Windy Hot Springs RNA	Alaska Wilderness League	12,700	It is very small and susceptible to disturbances; consider expansion to ensure that values are not degraded; a much larger area was considered in the Steese Proposed RMP (BLM 1984).
Mount Prindle RNA	Alaska Wilderness League	47,000	Much larger area reviewed for inclusion in the NNL program; consider expansion to ensure proper protection of values including caribou and Dall sheep habitat, uncommon birds and vegetation, and geological features; area at risk due to accessibility and future mineral development.
Limestone Jags RNA	Alaska Wilderness League	190,000	180,000 acres that includes the Limestone Jags RNA, were nominated for inclusion in the NNL program; values include rare geological features, Dall sheep and caribou habitat.

Based on interdisciplinary review, it was determined that there was no need to expand these RNAs. Most of the lands evaluated were also included in internal ACEC nominations. For more detailed analysis, see Appendix C, *Evaluation of ACEC Nominations*.

### 3.4.1.2.3. National Natural Landmark Program

The National Natural Landmark program (NNLP) recognizes and encourages the conservation of outstanding examples of the United States' natural history (49 Stat. 666, 16 U.S.C. 641). The designation is made by the Secretary of the Interior. The selection process is rigorous; to be considered, a site must be one of the best examples of a region's characteristic biotic or geologic features.

There are no designated national natural landmarks in the planning area. Mount Prindle and surrounding lands (47,000 acres) were reviewed in the late 1970s for inclusion in the program. (Young and Walters 1982). The Alaska Wilderness League recommended that a new review be conducted to determine the potential inclusion of the Mount Prindle area into the NNLP.

In the Young and Walters study (1982), each site evaluated for inclusion in the NNLP was rated with respect to its significance and vulnerability to disturbance (protection priority). The report assigned the Mount Prindle site a significance priority of 4 (lowest) and a protection priority of B. A significance priority of 4 was defined as "Not recommended at the national level; may nonetheless be significant at a more local level." A protection priority of B was defined as "site is in some danger." The report concluded that Mount Prindle was an interesting and scenic site that was of local rather than national significance. Proximity to roads and the presence of placer gold in creeks draining Mount Prindle were the reasons cited for the protection priority ranking of B.

Given Young and Walters' finding of only local significance and the 1980 Congressional designation of the White Mountains NRA and the Steese National Conservation Area, which include Mount Prindle, BLM's designation of this area as a RNA remains appropriate. Current management and existing designations are sufficient to protect the values of the area. No additional studies for inclusion in the NNLP program will be conducted as part of this planning process.

### **3.4.2. Pinnell Mountain National Recreation Trail**

The Pinnell Mountain Trail was constructed in 1970 for non-motorized use and was designated as a National Recreation Trail in 1971 under the National Trails System Act of 1968. It was the first designated trail in Alaska. Located 100 miles northeast of Fairbanks, this 27 mile trail traverses a series of alpine ridgetops entirely above timberline. The trail crosses open tundra with views north to the Yukon River and south to the Alaska Range.

The trail is one of the few maintained primitive hiking trails in Interior Alaska. It is currently managed for a Primitive recreation experience and is closed to all motorized vehicles. The trail closely parallels the south boundary of the North Unit of the Steese National Conservation Area and some sections of the trail are outside the National Conservation Area. Those sections of trail outside the National Conservation Area are on State land and BLM has obtained a 100 foot wide right-of-way from the State of Alaska.

### **3.4.3. Steese National Conservation Area**

The Steese National Conservation Area was established in 1980 by Section 401 of ANILCA and is located 70 miles north of Fairbanks, Alaska (Maps 1 and 3). Congress identified caribou range and Birch Creek WSR as special values to be considered in planning and management of the area (ANILCA Section 401(b)). The Steese National Conservation Area encompasses approximately 1.2 million acres, and is divided into two units separated by State of Alaska lands and the Steese Highway.

The Steese National Conservation Area is a component of the BLM's National Landscape Conservation System (NLCS). The mission of the NLCS is to conserve, protect and restore nationally significant landscapes recognized for their outstanding cultural, ecological and scientific values. Special values in the Steese National Conservation Area include Birch Creek Wild and Scenic River, caribou calving grounds and home range, and Dall sheep habitat. While various land uses are allowed in the National Conservation Area, the area is managed so that its scenic, scientific, cultural and other resources are protected.

### **3.4.4. White Mountains National Recreation Area**

The one-million-acres White Mountains NRA was established by Congress in 1980 by Section 403 of ANILCA. The specific language of this Act directs that the NRA shall be administered to provide for public outdoor recreational use; for the conservation of scenic, historic, cultural and wildlife values; and for other uses, if they are compatible or do not significantly impair the previously mentioned values. Part of Beaver Creek Wild and Scenic River is within the NRA. ANILCA also withdraws the NRA from locatable mineral location and entry.

## 3.4.5. Wild and Scenic Rivers

### 3.4.5.1. Designated Rivers

ANILCA (P.L. 96-487 as amended) added segments of Beaver Creek, Birch Creek and the Fortymile River to the National Wild and Scenic River System (NWSR), pursuant to the Wild and Scenic Act (P.L. 90-542 as amended). Additionally, ANILCA amended the Wild and Scenic Rivers Act (P.L. 90-542) to withdrawn areas within one-half mile of the banks of “wild” river segments from locatable mineral location and entry. ANILCA did not identify Outstandingly Remarkable Values (ORV) for any of these rivers; thus these ORVs are being identified as part of this planning process. See Appendix E, *Wild and Scenic Rivers Inventory*.

#### 3.4.5.1.1. Fortymile Wild and Scenic River

ANILCA Sec. 603 paragraph (48) identifies the Fortymile Wild and Scenic River (WSR) as “The main stem within the State of Alaska: O'Brien Creek; South Fork; Napoleon Creek; Franklin Creek; Uhler Creek; Walker Fork downstream from the confluence of Liberty Creek; Wade Creek; Mosquito Fork downstream from the vicinity of Kechumstuk; West Fork Dennison Fork downstream from the confluence of Logging Cabin Creek; Dennison Fork downstream from the confluence of West Fork Dennison Fork; Logging Cabin Creek; North Fork; Hutchison Creek; Champion Creek; the Middle Fork downstream from the confluence of Joseph Creek; and Joseph Creek; to be administered by the Secretary of the Interior,” and designates segments as “wild” in Sec. 605(b) and segments as “scenic” and “recreational” in Sec. 605(c) (Map 102). “Wild” segments include Mosquito Fork, North Fork, Middle Fork, Champion Creek, and Joseph Creek.

The Fortymile WSR is being managed according to the River Management Plan for the Fortymile River (1983) and BLM Manual 8351 – Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, and Management (1993).

Current management objectives for the Fortymile WSR in its entirety are to:

- Preserve the free-flowing conditions of the waters;
- Prevent degradation of water quality;
- Provide high quality recreational opportunities associated with a free-flowing river for present and future generations;
- Provide recreational use of fish and wildlife resources, including hunting and fishing within the framework of appropriate federal and state laws;
- Provide for a level of utilization of land and water resources which will leave the existing environment unimpaired for the use and enjoyment of future generations;
- Provide a variety of opportunities for interpretive, scientific, educational, and wildlands oriented uses;
- Assure preservation of historic values;
- Assure preservation of archaeological values;
- Protect valid existing rights and future rights granted pursuant to appropriate federal and state laws; and,
- Maintain and improve fish and wildlife habitat.

### 3.4.5.1.2. Birch Creek Wild and Scenic River

ANILCA Sec. 603 paragraph (46) identifies Birch Creek Wild and Scenic River as “The segment of the mainstem from the south side of Steese Highway in township 7 north, range 10 east, Fairbanks Meridian, downstream to the south side of the Steese Highway in township 10 north, range 16 east; to be administered by the Secretary of the Interior,” and designates it as “wild” in Sec. 605(b).

Birch Creek WSR is being managed according to the Steese RMP (BLM 1986a), the River Management Plan for the Birch Creek WSR (BLM 1983b) and BLM Manual 8351 (1993), Special Rules and Regulations for the Steese National Conservation Area et al. (FR 1988a), and Designation of Off-Road Vehicle (ORV) Use Areas for the Steese National Conservation Area (FR 1988b).

Current management objectives for Birch Creek WSR in its entirety are to:

- Protect valid existing rights and future rights granted pursuant to appropriate federal and state laws;
- Preserve the river and its immediate environment in its natural, primitive condition;
- Preserve the free-flowing conditions of the waters;
- Protect water quality and quantity;
- Provide high quality primitive recreational opportunities for present and future generations;
- Provide a variety of opportunities for interpretive, scientific, educational, and wildlands oriented uses;
- Assure protection of significant historic and archaeological values; and,
- Maintain and improve fish and wildlife habitat.

### 3.4.5.1.3. Beaver Creek Wild and Scenic River

Section 603 of ANILCA, paragraph (45) identifies Beaver Creek Wild and Scenic River as “The segment of the mainstem from the vicinity of the confluence of the Bear and Champion Creeks, downstream to its exit from the northeast corner of township 12 north, range 6 east, Fairbanks Meridian within the White Mountains National Recreation Area, and the Yukon Flats National Wildlife Refuge, to be administered by the Secretary of the Interior,” and designates it as “wild” in Sec. 605(b).

Beaver Creek WSR is being managed according to the White Mountains RMP (BLM 1986b), the River Management Plan for the Beaver Creek WSR (BLM 1983b), BLM Manual 8351 (1993), Notice of Special Rules and Regulations for the White Mountains National Recreation Area (White Mountains NRA) and Associated Recreation Facilities (FR 1997), and Designation of Off-Road Vehicle (ORV) Use Areas for the White Mountains National Recreation Area (White Mountains NRA) and Associated Lands (FR 1988c).

Current management objectives for Beaver Creek WSR in its entirety are to:

- Protect valid existing rights and future rights granted pursuant to appropriate federal and state laws;
- Preserve the river and its immediate environment in its natural, primitive condition;
- Preserve the free-flowing conditions of the waters;
- Protect water quality and quantity;
- Provide high quality primitive recreational opportunities for present and future generations;

- Provide a variety of opportunities for interpretive, scientific, educational, and wildlands oriented uses;
- Assure protection of significant historic and archaeological values; and,
- Maintain and improve fish and wildlife habitat.

### 3.4.5.2. Eligible and Suitable Rivers

The first phase of the wild and scenic river review is to inventory all potentially eligible rivers to determine which of those rivers are eligible for consideration in the National Wild and Scenic Rivers System (NWSR). In order to be eligible, rivers must be free-flowing and possess at least one Outstandingly Remarkable Value (ORV). Free-flowing is defined as existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. ORVs may include scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. The ORVs are evaluated in the context of regional and/or national significance, and must be river-related. A tentative classification of wild, scenic or recreational for each river/segment found eligible is then made based on the current level of naturalness and development associated with that river/segment. Eligibility is, in legal terms, a fact-based determination and not a planning decision.

The second phase of the review occurs as all eligible rivers are taken through the land use planning process to determine their "suitability" for designation into the NWSR. One RMP alternative (Alternative B) will consider all eligible river(s)/segments as suitable for purposes of analysis. "Suitability" determinations will be made in the record of decision for the RMP. Those river(s)/segments found suitable are then managed under specified guidelines to protect the free-flowing nature of the river(s)/segment, and to protect the identified ORVs and tentative classification.

Finally, the "suitable" river/segment determinations are reported to Congress. There is no specific time requirement for the completion of this phase; however, reporting will be done some time following approval of the record of decision. Only the U.S. Congress or the Secretary of the Interior, upon request by the State, can designate a river into the NWSR.

During the inventory phase, the BLM compiled a list of 40 potential rivers in the planning area (Table E.1, "List of Potential Rivers in the Planning Area"). Five of these rivers were not under BLM management and were excluded from further consideration. The remaining 35 river segments, totaling approximately 650 miles, were evaluated for eligibility (Map 101). All of the rivers were determined to be free-flowing. However, only five were found to have ORVs and determined to be eligible (Table 3.41, "Eligible Rivers in Planning Area" and Maps 70, 74, and 78). A full description of the inventory process is in Appendix E, *Wild and Scenic Rivers Inventory*.

While the spectrum of attributes that may be considered is broad, ORVs are directly river-related (Interagency Wild and Scenic Rivers Coordination Council 1999). These features should:

- be located in the river or on its immediate shore lands (generally within one-quarter mile of the river);
- contribute substantially to the functioning of the river ecosystem; and/or,
- owe their location or existence to the presence of the river.

A tentative classification of “wild”, “scenic”, or “recreational” was determined for each eligible river/segment based on the level of naturalness, development and access associated with each river/segment.

- A “wild” river is free of impoundments, with shorelines or watersheds essentially primitive, and with unpolluted waters.
- A “scenic” river may have some development, and may be accessible in places by roads.
- A “recreational” river is considered as a river or segment of river accessible by road, may have more extensive development along its shoreline, and may have undergone some impoundment or diversion in the past.

The five river segments listed below were found to be eligible as they are free-flowing and possess at least one ORV. A full description of the ORVs for each can be found in Appendix E, *Wild and Scenic Rivers Inventory*.

**Table 3.41. Eligible Rivers in Planning Area**

Subunit	Segment Name	Outstandingly Remarkable Values	Tentative Classification	Miles
Fortymile	Dome Creek	historic	“recreational”	5
	Gold Run	historic	“wild”	4
Steese	Big Windy Creek	scenic, geologic, wildlife	“wild”	14
Upper Black River	Salmon Fork Black River	wildlife	“wild”	52
White Mountains	Fossil Creek	scenic, geologic	“scenic”	23

## 3.5. Social and Economic

### 3.5.1. Public Safety

#### 3.5.1.1. Abandoned Mines

The planning area has numerous areas of concern generated by historic mining activities and current placer mining. A list of known Abandoned Mine Land (AML) sites has been compiled and continues to grow as rural areas are developed or mined. These sites consist of current claims on BLM lands and historic sites of concern. In order to minimize the possibility of contamination in the future, BLM takes steps to educate permittee’s regarding current ADEC and EPA regulations. Stipulations are annotated in all permits and tailored to the type and size of the operation. The Hazard Management and Resource Restoration program and the AML program within BLM have commonalities with regards to protecting human health, the environment, and wildlife.

Past mining operations included the use of numerous hazardous substances with little to no regard for the environment. A variety of petroleum, oil and lubricants (POLs), waste drums, explosive materials, acids, caustics, equipment parts, possible military surplus items and household trash can be found on some of the known sites. Chemical hazards are not the only concern with AML sites; physical hazards can also pose life threatening injuries.

Upon discovery of physical or environmental hazards at mine sites, temporary safety measures are implemented to warn the public of the risks associated with the site. A site assessment is performed to determine the extent of the hazards and the remediation required. Hazardous Management Resource and Restoration program and the AML program work together to

remediate sites of concern. The Hazmat program covers the cleanup of hazardous materials and the AML program covers the remaining site cleanup.

### 3.5.1.2. Hazardous Materials

BLM's Hazard Management and Resource Restoration program provides a framework for hazardous materials management. Federal and state environmental laws and regulations govern the storage, handling, disposal and release of hazardous materials. Numerous regulations and laws govern environmental protection, including but not limited to: Occupational Health and Safety Administration (OSHA, 29 CFR), Department of Transportation (DOT, 49 CFR), Resource Conservation and Recovery Act (RCRA, 42U.S.C. 6901 et seq. 1976), Toxic Substances Control Act (TSCA), National Contingency Plan (NCP), and Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 which was amended by the Superfund Amendments and Reauthorization Act (SARA) in 1986.

The goals of BLM's Hazard Management and Resource Restoration program are:

- To protect public health, safety and environmental resources by minimizing environmental contamination and hazards on public land and BLM facilities.
- To comply with federal and state hazardous materials management laws and regulations.
- To maintain the health of ecosystems through assessment, cleanup, correction, and restoration of contaminated sites and other hazards.
- To manage hazards and hazardous materials-related risks, costs and liabilities.
- To integrate environmental protection and compliance with all environmental statutes into all BLM activities.

#### 3.5.1.2.1. Contaminated Sites of Concern

A database of known contaminated sites of concern is maintained. Sites include active placer mines, abandoned mine lands, unauthorized use and numerous other activities. Known sites of concern as of January 2009 are identified in Table 3.42, "Contaminated sites of Concern Within the Planning Area".

**Fortymile Subunit:** Numerous areas within the Fortymile Subunit are sites of concern, regarding the release of hazardous substances and petroleum, oils and lubricants (POLs). AMLs, active mining claims, camping activities and unauthorized uses of public land are sources of contamination within the subunit. This subunit is relatively accessible, with two state maintained highways, increasing the potential for future environmental contamination.

As of 2009, two sites of concern, the Fort Egbert dump in Eagle, Alaska and the Tanacross Airfield/Administrative site, are in varying stages of remediation. These areas have been identified as a priority in accordance with State and federal regulations governing the cleanup of contaminated sites. The Fort Egbert dump is in the final stages of remediation. The Tanacross Airfield/Administrative site has had extensive environmental clean up over the last few years, including removal of underground storage tanks, drum removal, solid waste cleanup, contaminated soil disposal and building demolition/removal. Monitoring wells located on the administrative site are being reviewed and steps are being taken for decommissioning.

The Fort Egbert dump is located immediately adjacent to the City of Eagle within the Fort Egbert grounds, a National Historic Landmark. The area of concern within the dump is modern (since the 1940s), although the general locale had been used as a refuse disposal area since historic times.

The historical dump was started about 1899 when Fort Egbert was established and then used by the Army until about 1925. Historical refuse is found along an approximately 0.5 mile stretch of bluff between the fort buildings and the Yukon River. The dump was unauthorized and was closed by BLM and the Alaska Department of Environmental Conservation (ADEC) in 1989. There has been no evidence of public use since the closure. The dump is believed to contain household wastes, batteries, old appliances, vehicle parts and a variety of other known source contaminants.

Tanacross complex is comprised of two locations, one on either side of the Alaska Highway. Tanacross Airfield Site (TAS) is 11 miles northwest of Tok, Alaska and occupies 3,400 acres north of the highway. Tanacross Administrative Buildings site is located south of the Alaska Highway and occupies 102 acres. The TAS has been utilized by numerous entities since the early 1900s and became the responsibility of BLM in the 1960s. The land is prioritized for conveyance to Tanacross Village Corporation.

In the late 1980s, ADEC and the EPA requested the investigation of environmental contamination at the TAS. Soil sampling has been completed throughout the site. Seven monitoring wells were drilled on BLM property after a site assessment identified the flow of ground water and possible routes contaminants could be carried to the water table. As additional hazards are identified, they are assessed and remediated as necessary. The airfield currently occupies Stateselected lands. Conveyance of the Tanacross complex could be delayed by remediation activities.

The Tanana Administrative Building was once a BLM administrative site supporting wildland fire operations at the TAS. In the 1980s, the main building caught fire and burned to the ground. Remediation of the burn site was completed in 2006. In 1997, two leaking underground storage tanks were removed. Groundwater was believed to be impacted and seven monitoring wells were installed. BLM plans to continue monitoring and remediation in accordance with ADEC and EPA guidance.

**Steese Subunit:** This subunit has a limited potential for sites of concern. Waysides, river and highway access are the main points of entry to the Steese National Conservation Area. Outdoor activities within readily accessible areas could lead to the accumulation of solid waste. Lack of trails within this subunit reduces the potential for release of POLs and minimizes the damage to the environment. If lands within the subunit are opened to mineral entry, the potential for hazmat sites will increase.

**Upper Black River Subunit:** The remote location of the Upper Black River Subunit makes identifying sites of concern extremely difficult, but also makes the creation of new sites less likely compared to the more accessible subunits. As human uses increases, the potential for the accumulation of solid waste and the release of hazardous substances to the environment will increase. One site of concern has been identified at this point, but more are anticipated as BLM visitation to the area increases.

**White Mountains Subunit:** The White Mountains Subunit has the potential for sites of concern, due to its status as a NRA with an extensive trail system and available cabin rentals. Waysides, river, and highway access are the main points of entry the White Mountains. The use of off-highway vehicles and camping equipment increases the potential for release of POLs to the environment during cooking, refueling and maintenance operations. Implementing good OHV maintenance and organized camping practices as promoted by Leave No Trace will reduce the potential for new sites.

### 3.5.1.2.2. Remediation of Contaminated Sites

BLM's policy regarding remediation of contaminated sites begins with identifying potentially responsible parties (PRPs) who may be liable for hazardous substance releases affecting BLM lands and resources. If PRPs have not been identified, or are unable to assist with remediation, BLM evaluates the effects to the environment and creates a priority list for remediation. The nature and amount of suspected contamination determines the regulatory requirements, involvement of federal and/or State regulatory agencies, and other requirements for the site investigation, and potential clean up actions.

1. Preliminary Analysis is the basic level of review when the likelihood of human intrusion is very low.
2. Initial Assessment is used when the likelihood of contamination is low, but the potential that human intrusion may lead to the identification of a Recognized Environmental Condition.
3. Phase I Environmental Site Assessment is used when there are known or suspected Recognized Environmental Conditions or involves Termination of Federal Government Operations.
4. Phase II Site Investigation identifies the nature and extent of contamination.
5. Phase III Clean up includes site characterization and cleanup.

Table 3.42 includes known sites of concern within the planning area as of January 2009. These sites include hazardous material concerns, trespass structures, unauthorized solid waste disposal and sites currently under remediation.

**Table 3.42. Contaminated sites of Concern Within the Planning Area**

Site Name	Location	Site Activity
Alder Creek	CRM <sup>a</sup> , T. 27N., R. 19E., Sec. 7	Unauthorized occupancy
American Creek	FM <sup>b</sup> , T. 3S., R. 32E., Sec. 7	Active Mine with hazmat concerns
Fort Egbert	CRM, T. 1S., R. 33E., Sec. 7	Closed landfill (unauthorized)
Fortyfive Pup	FM, T. 8S., R. 29E., Secs. 29-30	Active mines
Fortymile River	FM, T. 8S., R. 33E., Sec. 2	Unauthorized occupancy
Fortymile River/Smith Bench	FM, T. 8S., R. 33E., Secs. 31-32	Active and old mine with hazmat concerns
Franklin Creek Mine	CRM, T. 28N., R. 18E., Sec. 34	Active mine
Little Miller Creek Mine	FM, T. 6S., R. 33E., Sec. 16	Active mine
Moose Creek	FM, T. 7S., R. 34E., Sec. 20	Unauthorized occupancy
Mosquito Creek	CRM, T. 27N., R. 17E., Sec. 35	Active and old mine, reclamation in progress
Mosquito Fork bridge	CRM, T. 26N., R. 17E., Sec. 35	Active and old mine
Napoleon Creek	CRM, T. 27N., R. 19E., Sec. 20	Active mine
O'Brien Creek	FM, T. 6S., R. 32E., Secs. 33-34	Active mine
Preacher Creek	FM, T. 10N., R. 9E., Sec. 31	Suspect AML, unauthorized occupancy
Steele Creek	FM, T. 7S., R. 33E., Sec. 31	Physical Hazards
Tanacross Airfield and Administrative Site	CRM, T. 18N., R. 11E., Secs. 4-5; CRM, T. 19N., R. 11E., Secs. 32-33	Reclamation in progress from prior land use
Uhler Creek	FM, T. 8S., R. 31E., Sec. 20	Active mine
Wade Creek (couch)	CRM, T. 27N., R. 19E., Sec. 24	Solid waste

<sup>a</sup>CRM = Copper River Meridian

<sup>b</sup>FM = Fairbanks Meridian

## 3.5.2. Social and Economic Conditions

This section summarizes demographic and economic trend information, and describes key industries in the planning area that could be affected by BLM management actions. Local industries most likely affected by BLM land management policies and programs are travel, tourism and recreation, and mining.

### 3.5.2.1. Economics

#### 3.5.2.1.1. Regional Overview

The planning area includes the Fairbanks North Star Borough, the Southeast Fairbanks Census Area, and a portion of the Yukon-Koyukuk Census Area. There is no census-area-level of local government. The Southeast Fairbanks Census Area is one of the least populated census areas in the state. It is home to 1 percent of the Alaska population at a density of 0.2 persons/square mile (Alaska average is 1.2 persons/square mile).

Fairbanks has the largest population, and is a “gateway community,” trade and transportation center for the region. Fort Wainwright personnel are included in Fairbanks' population. Fairbanks has commercial airline service connecting cities outside the region. Regional or charter air service provides the only year-round access to other communities in the planning area. Delta Junction and Tok are also gateway communities, due to their location on the Alaska Highway. The Fairbanks North Star Borough includes communities along the Richardson Highway, or adjacent to the city of Fairbanks, such as Moose Creek, a census community with a population of 731 in 2012 (ADLWD 2013a).

Two other military reservations are partially within the planning area. These are Fort Greeley near Delta Junction with a population of 529, and Eielson Air Force Base east of Fairbanks with a population of 2,793 in 2012.

Deltana, estimated population 2,313, is the largest community outside the Fairbanks North Star Borough. The “community” is a 562 square mile unincorporated area, without a developed community business center. It consists of a collection of farms and residences generally east of Delta Junction.

There are 35 communities within the planning area (Map 1). Tok is one of the larger, with a population of 1,287 (ADLWD 2013a). The smallest communities range in population from Chicken (7) to Livengood (12), Healy Lake (13), and Dot Lake (17).

Five villages within the planning area have no road access to state highways. These are Beaver, Birch Creek, Chalkyitsik, Stevens Village, and Fort Yukon. All but Birch Creek are located along the Yukon River. The village of Circle is also located on the bank of the Yukon River, but is connected to the Alaska Highway System.

Few communities are incorporated. Property taxes are collected in North Pole and Fairbanks. Fairbanks also taxes hotel beds, tobacco, liquor, and real property. Fort Yukon and North Pole have a sales tax.

Fairbanks and adjacent communities are market economies. The remainder of the planning area is a mixed subsistence-market economy. Villages such as Beaver, Birch Creek, Chalkyitsik, Fort

Yukon, and Stevens Village are most dependent upon natural resources for subsistence. Nearly all other communities have road access and participate to a higher degree in the market economy.

Economic change agents in the planning area include the opening and operation of the Pogo Mine, the passage of ANCSA and ANILCA. In addition, operation of the TAPS, military reservations near Fairbanks and Delta Junction, the Alaska Fire Service, and tourism provide employment and income. With the growth of major population centers (Southcentral Alaska and Fairbanks), visitation and use of area resources has increased dramatically in the last 20-30 years. Population in the area has grown over the last three decades, although migration from the area has also increased.

Market basket surveys conducted by the UAF Cooperative Extension Service in 2011 reported food costs for families of four (UAF 2011). The market basket for a family of four in Delta Junction cost over 33 percent more than Anchorage and 37 percent more than the same basket in Fairbanks. Cost of living surveys are not conducted in rural villages, but their costs are higher than communities along the highway system.

Energy is very expensive in the region. Bradley Lake hydroelectric, Cook Inlet natural gas, fuel oil, and coal fired generation provide electricity along the Richardson Highway at a cost about two-thirds higher in Fairbanks and Delta Junction than in Anchorage (GVEA 2009). Diesel generation provides electricity in remote areas, as well as to communities along the Elliott, Taylor, Dalton, Steese and Alaska Highways, resulting in even higher cost. The Alaska Power Cost Equalization Program provides some relief rural users, for example, in Fort Yukon the equalization factor mitigates the cost from \$0.63 per KWH to \$0.13 per KWH. Rural communities rely on fuel that must be barged, flown, or trucked (in winter) to villages for power generation and supplemental heat (Alaska Energy Authority 2013).

Community profiles for all villages, towns, and cities in the State are available at the Alaska Department of Commerce and Community Development, Community Database Online at <http://commerce.alaska.gov/cra/DCRAExternal>.

### **3.5.2.1.2. Demographic Overview**

The population of the planning area is approximately 110,000, including rural residents living outside communities. According to the Alaska Department of Community and Regional Affairs, the Alaska Native population varies widely between communities in this region. All of the smaller non-traditional Native communities have Alaska Native populations. Alaska Native residents comprise 0 and 12 percent of the Alcan Boundary and Tok populations, respectively. Traditional Native communities are 50 to 100 percent Alaska Native. The remaining communities have Alaska Native populations of less than 10 percent Table 3.46, "Minority Populations in the Planning Area". In comparison, Alaska Natives comprised nearly 15 percent of the state's population (U.S. Census 2010, U.S. Census 2013), a larger percentage of Native Americans than in any other state. (Hunsinger and Sandberg of the Alaska Department of Labor and Workforce development reported the native population as 17 percent of the Alaskan population in their article in the April, 2013 Alaska Economic Trends Magazine.) The balance of the race distribution in the planning area and the state is primarily white, comprising as much as 70 percent of the state population. The Alaska Native population has doubled in the last 40 years.

**Table 3.43. Growth of the Alaska Native Population, 1990–2010**

Location	Population by Year <sup>a</sup>			Current Population 2012	Percent Growth
	1990	2000	2010		
Alaska	85,698	98,043	104,871	108,249	27.4
Anchorage Municipality	14,569	18,941	23,130	24,300	66.8
Fairbanks	5,330	5,714	6,879	7,206	35.2
Matanuska-Susitna Borough	1,939	3,264	4,901	5,485	183.9
Southeast Fairbanks Census Area	770	785	808	814	5.7

<sup>a</sup>U.S. Census Bureau, Census 1990, 2000, 2010.

Overall, the population growth in the three boroughs and census areas touching the planning area is lower than the growth rate for the state, and far below the growth rate of southcentral Alaska. Between 1990 and 2010, Alaska population grew by 29 percent, while Fairbanks Star Borough grew by 18 percent, and the Southeast Fairbanks Census Area fell by almost 2 percent. The median age of the population in these census subdivisions in 2010 ranged from 31.7 years to 35.9 years, close to the state median of 33.8 years (ADLWD 2011).

Out migration is evident in the Yukon-Koyukuk Census Area. The Fairbanks Northstar Borough and Southeast Fairbanks Census Area are some of the seven locales in Alaska showing net in-migration during the period 1990-2010. Immigration from Russia as well as new employment at the Pogo Mine contributes to this change (ISER 2008).

**Table 3.44. Population Growth of Communities within the Planning Area**

Community	Population <sup>a</sup>					
	(2010)	(2000)	(1990)	(1980)	(1970)	(1960)
Alaska	710,231	626,932	550,043	419,800	308,500	230,400
Fairbanks North Star Borough	97,581	82,840	77,720	53,983	45,864	43,412
Southeast Fairbanks Census Area	7,029	6,174	5,913	5,676	4,308	2,926
Yukon-Koyukuk Census Area	5,588	6,510	6,714	7,873	7,045	6,599
Big Delta	591	749	400	285	0	0
Delta Junction	958	885	652	945	703	0
Deltana	2,251	1,570	na	na	na	na
Dry Creek	94	128	106	0	0	0
Fort Greely	539	461	1,299	1,635	1,820	0
<b>Delta Area</b>	<b>4,433</b>					
Eilson AFB	2,647	5,400	5,251	5,232	6,149	0
Ester	2,422	1,680	147	149	264	81
Fairbanks	31,535	30,224	30,843	22,645	14,771	13,311
Fox	417	300	275	123	0	0
Harding/Birch Lakes	299	216	27	na	na	na
Livengood	13	29	na	na	na	na
Moose Creek	747	542	610	510	0	0
North Pole	2,117	1,570	1,456	724	265	358
Pleasant Valley	725	623	401	0	0	0
Salcha	1,095	854	354	319	0	0
Two Rivers	719	482	453	359	0	0
<b>Fairbanks Area</b>	<b>42,736</b>					
Tanacross	136	140	106	117	84	102
Tetlin	127	117	87	107	114	122
Tok	1,258	1,393	935	589	214	129

Community	Population <sup>a</sup>					
	(2010)	(2000)	(1990)	(1980)	(1970)	(1960)
Northway	71	95	123	73	40	196
Northway Junction	54	72	88	0	0	0
Northway Village	98	107	113	112	0	0
Healy Lake	13	37	47	33	0	0
Dot Lake	13	19	70	67	42	56
Dot Lake Village	62	38	na	na	na	na
<b>Tok area</b>	<b>1,832</b>					
Alcan Border (Boundary)	33	21	27	0	0	0
Central	96	134	52	36	26	28
Chicken	7	17	0	0	0	0
Eagle	86	129	168	110	36	92
Eagle Village	67	68	35	54	0	0
<b>Eagle Area</b>	<b>289</b>					
Beaver	84	84	103	66	101	101
Birch Creek	33	28	42	32	45	32
Chalkyitsik	69	83	90	100	130	57
Circle	104	100	73	81	54	41
Fort Yukon	583	595	580	619	448	701
Stevens Village	78	87	102	96	74	102
<b>Yukon River</b>	<b>951</b>					

<sup>a</sup>Source ADLWD 2103a

### 3.5.2.1.3. Employment and Income

As elsewhere in Alaska, public employment is very important to the economy of the planning area. The largest employers are the Fairbanks North Star Borough School District, the University of Alaska Fairbanks, the Federal Department of Defense and three military bases.

Banner Health, the operator of Fairbanks Memorial Hospital and Medical Center, is the largest private source of employment in the planning area. Tanana Chiefs Conference, providing social and health services, is the second largest. The Fort Knox Mine, owned and operated by Fairbanks Gold Mining, Inc., a subsidiary of Kinross Gold Corporation, is the third largest employer in the planning area and in the state as well. Another private employer with a large payroll is Pogo Mine, a joint venture with Sumitomo Metal Mining Co. Ltd. and Sumitomo Corporation of Japan. Teck Cominco has a 40 percent interest in the mine and is the operator. In an effort to bolster the local economy the Pogo Mine developers entered into a Payment in Lieu of Taxes Agreement with the community of Delta Junction. Under the agreement, payments of 1.25 million dollars were paid to the town annually from 2005 to 2007. As of March 2013, 310 people were employed (ADNR 2013). Fairbanks has an estimated 1,300 mining-related jobs in September 2011 (ADLWD 2011). Fort Greely is located just south of Delta Junction, and provides substantial employment in the area.

ANCSA corporations, subsidiaries, and non-profits, and various tribal organizations have invested in services and provide employment for local residents and shareholders. Doyon, Limited, the ANCSA regional corporation in the planning area, provides diverse employment including oil field services and construction. Tanana Chiefs Conference and the Council of Athabascan Tribal Governments are also important employers.

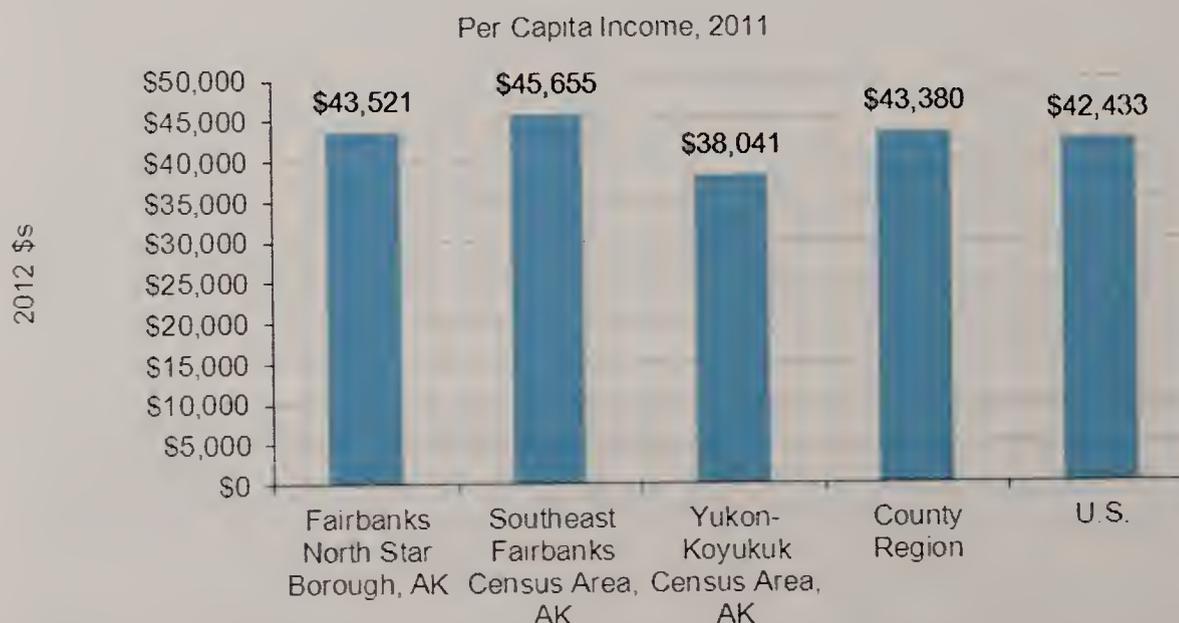
Non-resident employment in the planning area is similar to that in other areas of the state, except for the North Slope Borough and in areas of heavy seafood processing, where the

percentage of non-local and non-Alaskan residents is very high. Private sector non-local resident employment ranges from a low of 24.3 percent in Fairbanks North Star Borough, to 54.1 percent in the Southeast Fairbanks Census Area, to 54 percent in the Yukon-Kuskokwim Census Area. Non-Alaska residents also comprise a significant portion of the workforce: 17.7 percent in Fairbanks North Star Borough, to 21.4 percent in the Southeast Fairbanks Census Area, to 23 percent in the Yukon-Kuskokwim Census Area (Hadland 2011). Alaska statewide has 20.1 percent non-resident employment. The two largest metal mines in the Planning area Fort Knox and Pogo employ 9.8 percent and 36.8 percent non-resident employees.

Unemployment in the planning area is considerably higher than in urban centers in Alaska, and higher than the state average. According to State of Alaska data for September 2011, unemployment ranged from a low of 5.9 percent in the Fairbanks Area to 11.2 percent in Southeast Fairbanks Census Area, and 14.7 percent in the Yukon-Kuskokwim Census Area, while the state average at that time was 6.6 percent (ADLWD 2013b).

Labor force participation rates are low in Bush Alaska and higher along road systems. Census data shows Northway, and Birch Creek, for example, with lower participation rates. This underscores the relative scarcity of jobs and emphasizes the role and importance of subsistence activities.

Per capita income in the planning area is generally lower than the Alaska average. Figure 3.4 shows per capita income for Fairbanks North Star Borough, Southeast Fairbanks Census Area, Yukon/Kuskokwim Census Area, "County Region" an aggregate of all three, compared with the United States. The Per Capita income in Alaska in 2011 was \$46,624. Villages off the road system report the lowest income. In the Fairbanks North Star Borough 7.8 percent of individuals were below poverty level in 2011 (US Census Bureau 2013). In the Southeast Fairbanks Census Area 10.4 percent of families were below poverty level in 2011. In the Yukon-Koyukuk Census Area, 23 percent of the population was below poverty level in 2011. In comparison, 9.5 percent of families in Alaska were below the poverty level in 2011 (from U.S. Census, State and County QuickFacts 2012 online at <http://quickfacts.census.gov/qfd/states/02000.html>). In 2013, the individual poverty level income in Alaska was \$14,350, while for a family of four the guideline was \$29,440. More information on low income populations can be found in section 3.5.2.2.3.



**Figure 3.4. Comparison of Per Capita Income 2012 (EPS)**

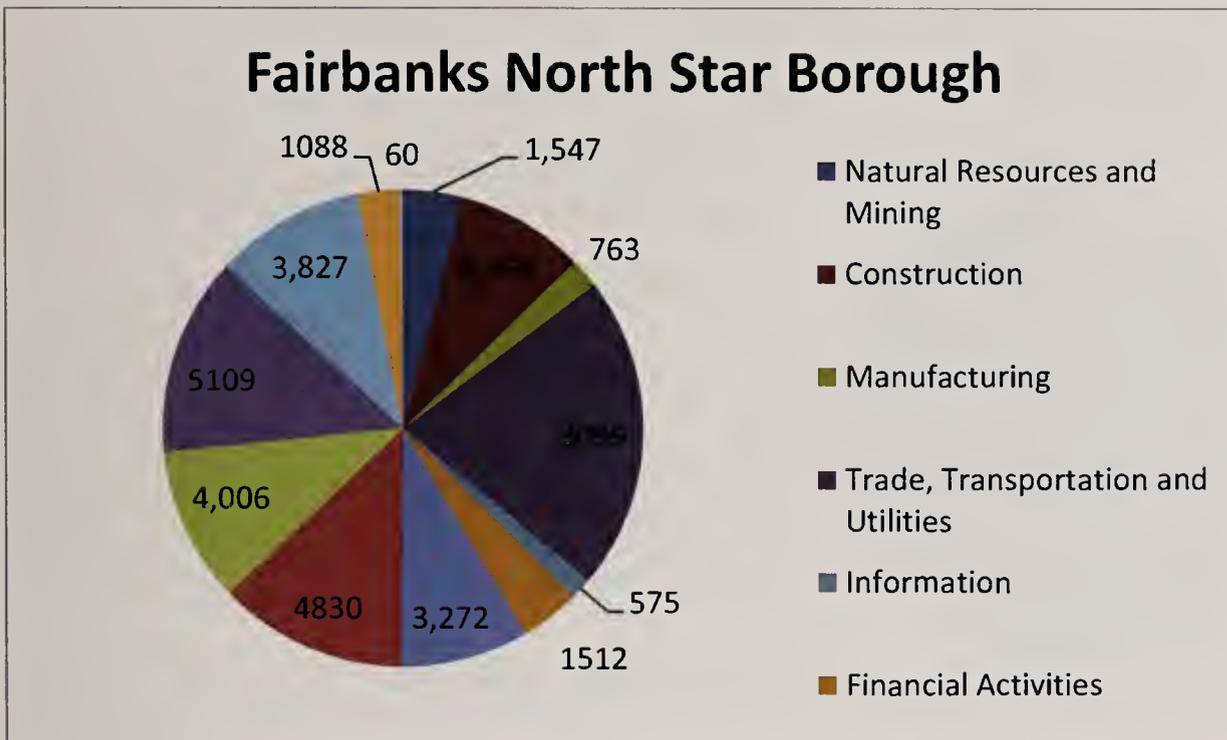


Figure 3.5. Employment by Industry Fairbanks North Star Borough (ADLWD 2011)

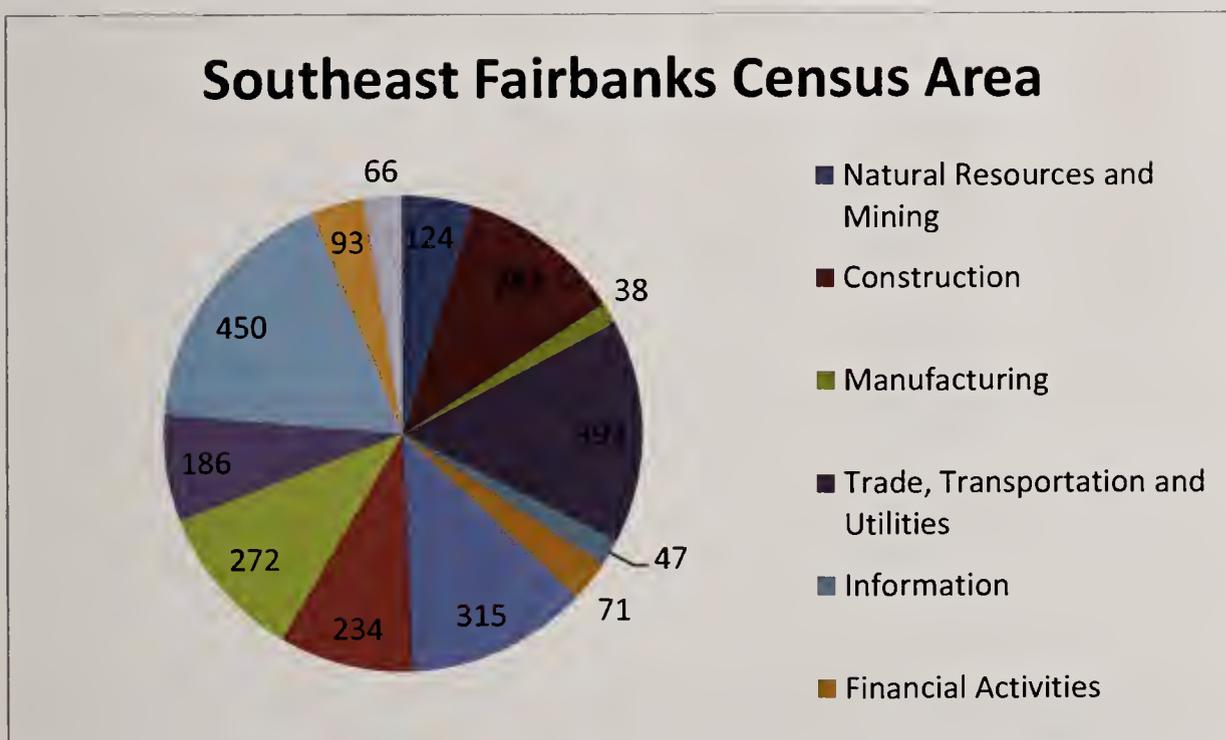
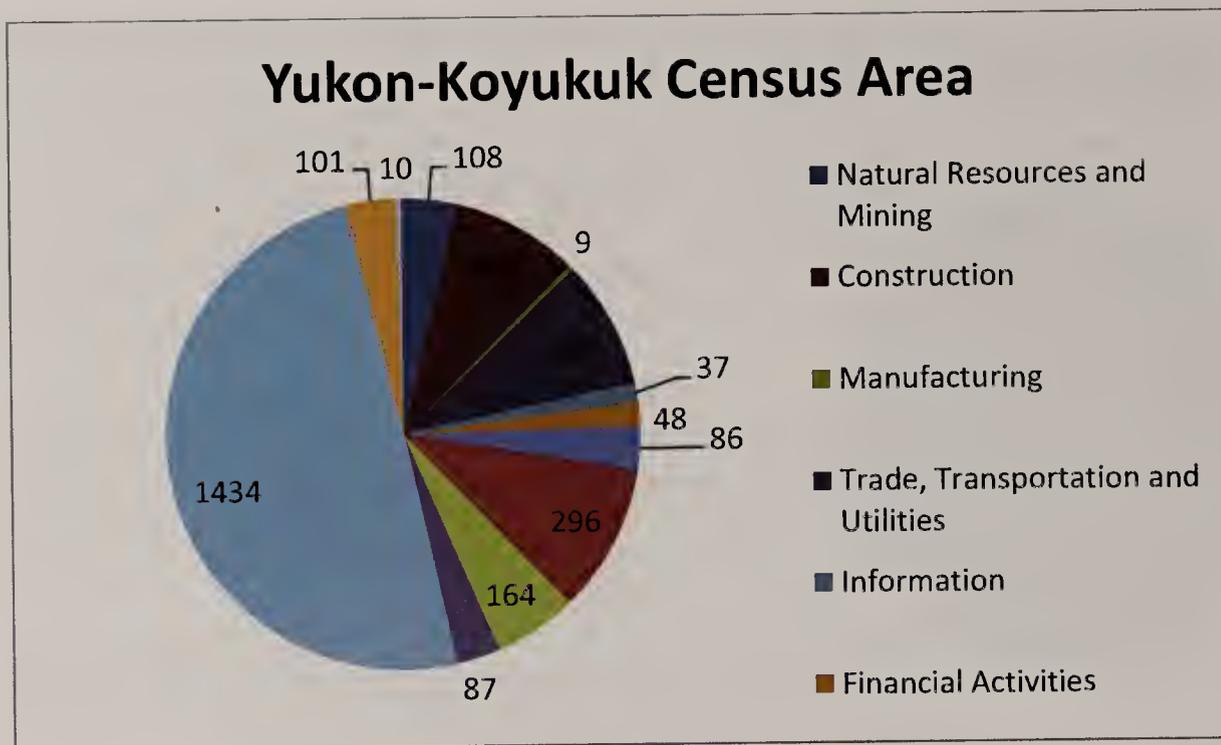
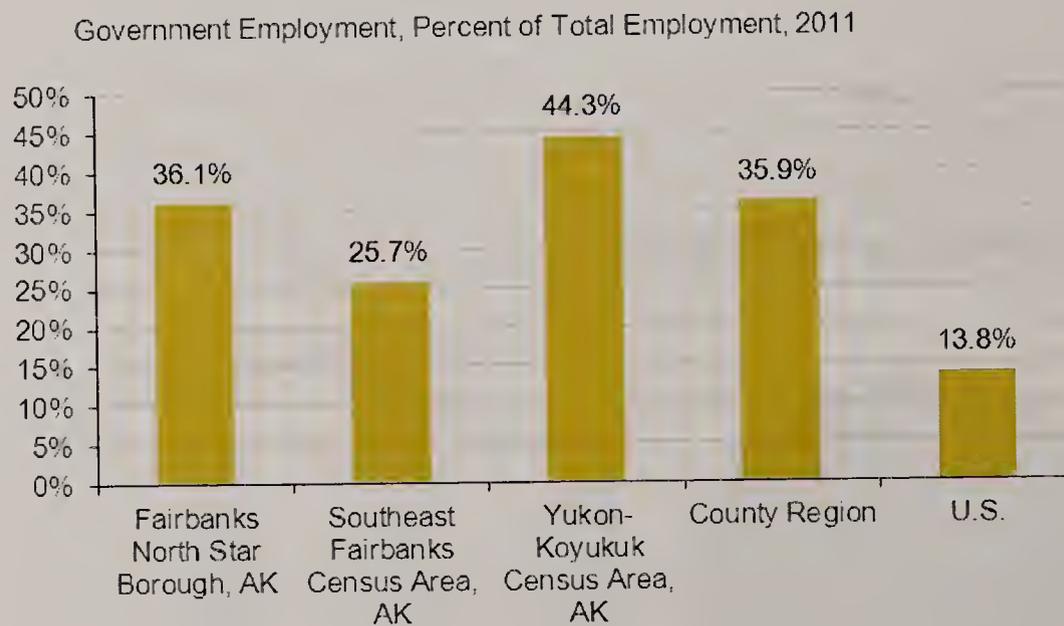


Figure 3.6. Employment by Industry Southeast Fairbanks Census Area



**Figure 3.7. Employment by Industry Yukon-Koyukuk Census Area**

Government jobs provide a disproportionate employment particularly in rural areas. See Figure 3.7 for a comparison of government employment in the planning area to the rest of the United States.



**Figure 3.8. Government Employment**

### 3.5.2.1.4. Revenue

Local government revenue in the planning area is influenced by the exemption of ANCSA village corporations and regional corporations from certain forms of property taxation. Communities and boroughs are empowered to levy and collect tax revenues if they are incorporated political subdivisions. Several villages or towns, and the Borough levy sales taxes and specific use or

product taxes. The Fairbanks North Star Borough collects, property, bed, alcohol, tobacco, and oil and gas tax; the city of Fairbanks collects property, bed, alcohol, and tobacco tax; North Pole collects property and sales tax, and Fort Yukon collects sales tax. The city of Delta Junction collected a payment in lieu of property tax by agreement with Pogo Mine owners from 2005–2007.

**Table 3.45. Per Capita Tax Revenues in Dollars**

Municipality or Community <sup>a</sup>	Property Tax	Sales Tax	Other Taxes	Total Taxes Reported	Per Capita Revenue
Anchorage	\$486,105,549	0	\$45,714,068	\$531,819,617	\$1,654
Fairbanks North Star Borough	\$96,567,220	0	\$3,871,559	\$100,438,779	\$1088
North Pole	\$959,554	\$2,452,041	0	\$3,411,595	\$454
Fairbanks	\$13,932,572		\$5,530,914	\$19,463,486	\$258
Fort Yukon	0	\$154,028	0	\$154,028	\$258

<sup>a</sup>Source: ADCCE 2013

Table 3.45 lists collections by cities and boroughs that levy taxes. The column labeled “Other Tax” aggregates collections for items such as liquor, tobacco, and bed use. Anchorage is listed for comparison.

### 3.5.2.2. Environmental Justice

Executive Order (EO) 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” requires that each federal agency consider environmental justice to be part of its mission. Its intent is to promote fair treatment of people of all races, so no person or group of people bears a disproportionate share of the negative effects from the country’s domestic and foreign programs. Specific to this planning process, the EO and BLM policy requires the BLM is to identify and address as appropriate all actions that cause disproportionately high and adverse impacts to federally recognized tribes, and minority and low-income populations.

#### 3.5.2.2.1. Federally Recognized Tribes

In Alaska, the villages recognized under ANCSA were designated as tribes by the Department of the Interior in 1993, and were confirmed by Congress pursuant to the Federally Recognized Indian Tribe List Act of 1994 (P.L. 103–454; 108 Stat. 4791, 4792). The planning area includes 12 federally recognized tribes:

- Beaver Village
- Birch Creek Tribe
- Chalkyitsik Village
- Circle Native Community
- Village of Dot Lake
- Native Village of Eagle
- Native Village of Fort Yukon
- Healy Lake Village
- Northway Village
- Native Village of Stevens
- Native Village of Tanacross
- Native Village of Tetlin

In addition, EO 13175, "Consultation and Coordination with Indian Tribal Governments," requires the BLM to consult with tribal governments on federal matters that significantly or uniquely affect their communities. The BLM initiated consultation with the federally recognized tribes in the planning area by certified mail at the beginning of the planning process. Only two tribes have responded, stating that they wished to participate in consultation. Although the remaining tribes did not respond to the request for consultation, the BLM has continued to send them information on the RMP and EIS, including a copy of this Draft RMP/EIS for review.

### 3.5.2.2.2. Minority Populations

U.S. Council on Environmental Quality (CEQ) guidelines for evaluating the potential environmental effects of projects require specific identification of minority populations 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 (CEQ 1997). Table 3.46 lists all of the communities within the planning area by municipality type, population, and percentage of the population that is a recognized minority (U.S. Census Bureau 2011).

**Table 3.46. Minority Populations in the Planning Area**

Borough/Community	Government Type	2010 Population	Percent Minority
Fairbanks North Star Borough	Second Class Borough	97,581	17.3
Beaver	Unincorporated	84	98.8
Big Delta	Unincorporated	591	3.9
Birch Creek	Unincorporated	33	100.0
Boundary (Alcan Border)	Unincorporated	33	3.2
Central	Unincorporated	96	4.3
Chalkyitsik	Unincorporated	69	85.5
Chicken	Unincorporated	7	0.0
Circle	Unincorporated	104	89.8
Delta Junction	Second Class City	958	8.6
Deltana	Unincorporated	2,251	5.1
Dot Lake	Unincorporated	13	25.0
Dot Lake Village	Unincorporated	62	91.1
Eagle	Second Class City	86	8.2
Eagle Village	Unincorporated	67	43.1
Fort Yukon	Second Class City	583	92.1
Healy Lake	Unincorporated	13	84.6
Livengood	Unincorporated	13	25.0
Northway	Unincorporated	71	87.7
Northway Junction	Unincorporated	54	75.0
Northway Village	Unincorporated	98	97.5
Stevens Village	Unincorporated	78	93.2
Tanacross	Unincorporated	136	88.6
Tetlin	Unincorporated	127	93.4
Tok	Unincorporated	1,258	14.9

Based on the census data, numerous minority populations within the planning area are well above the 50 percent threshold specified in the EPA guidelines. In most communities, where the minority population is greater than 50 percent, it is primarily composed of Alaska Native or American Indians, with few to no other minority groups represented.

### 3.5.2.2.3. Low Income Populations in the Planning Area

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 12.4 percent of the population lives below the poverty level. For the Eastern Interior RMP, any community that is greater than the national average of 12.4 percent in terms of poverty rate will be considered a low-income community, given the relatively small populations of the individual communities within the planning area. As a result, 12 communities within the planning area are considered low-income (Table 3.47). None of the individual communities which comprise the Fairbanks North Star Borough fall below the low-income threshold, and are not considered low-income environmental justice populations.

**Table 3.47. Low Income Communities In the Planning Area**

Community	Percent Individuals below Poverty Level <sup>a</sup>
Beaver	36.6
Birch Creek	43.8
Chalkyitsik	32.0
Circle	60.7
Dot Lake Village	53.6
Eagle	16.9
Eagle Village	39.0
Fort Yukon	17.7
Northway	51.9
Northway Junction	44.8
Northway Village	72.0
Stevens Village	47.4

<sup>a</sup>Source ADLWD

### 3.5.2.2.4. Outreach and Potential Environmental Justice Issue Identification

The BLM issued a NOI in the *Federal Register* February 29, 2008 initiating the scoping period for the Eastern Interior RMP. Scoping meetings were held in several communities. Environmental justice considerations for the RMP were gathered through: 1) requests for comments via certified letter to all federally recognized tribes; 2) “interested party” letters that were sent to communities within the planning area, as well as individual stakeholders and stakeholder groups; and 3) notices in local newspapers requesting comments and announcing scoping meeting locations and times.

Major concerns expressed at these meetings and in responses to BLM's request for information include:

- The need for additional research in the Black River region regarding subsistence use, hunting, and fishing, and including the use of Traditional Ecological Knowledge—a recommendation was made to look at the Council of Athabascan Tribal Governments land use documents for the planning area;
- Mineral entry—opening new areas to mining; also keeping areas closed to mining;
- Access, including creating transportation routes or corridors, and limiting access to OHVs;
- Fire protection, maintaining a natural fire regime, problems as a result of erosion after wildland fires;
- Water quality issues, especially with regard to the headwaters of the Black River, which is the primary water supply for the community of Chalkyitsik;
- Protection for historic hunting and trapping trails;

- Allowing new trapping cabins to be constructed, and allowing for the reconstruction of trapping cabins that have burned down due to wildland fires;
- Continued trail improvement throughout the planning area;
- The protection of subsistence resources, including the Fortymile caribou, moose, salmon, whitefish and pike.

The EPA issued a Notice of Availability in the *Federal Register* March 2, 2012 initiating the public comment period on the Draft RMP/EIS. Public meetings were held in communities throughout the planning area. A supplement to the Draft RMP/EIS was released for public comment on January 11, 2013. Another series of public meetings were held in the planning area. The public comment period for both the Draft RMP/EIS and supplement closed on April 11, 2013. The BLM received comments in writing, at public meetings, and through government-to-government consultation. Major concerns expressed at these meetings repeated many of those heard during scoping, particularly in regard to the Upper Black River Subunit. Comments are discussed in more detail in Chapter 5.

### 3.5.2.3. Sociocultural Systems

This section focuses on the cultural differences that exist in the planning area. A socio-cultural system is a complex cultural structure consisting of a definable population within a determinable territory, characterized by shared and interrelated ways of life including beliefs, norms, values, and technologies, which are shared within the population and passed on from generation to generation. This system comprises the fundamental traditions, ideas, behavioral patterns, and tools that humans use to adapt to their surroundings, and form the basis of each unique way of life and culture.

Background awareness of certain traditional and historical aspects is important to understand the effects of more recent events and trends on local inhabitants and use of public lands in the region, and the effects of future actions. Relevant history of the area is compiled in the BLM report "Alaska's Upper Yukon Region: a History" (Ducker 1982), and is summarized here.

Humans have lived in the area for more than 11,000 years. In the eighteenth century, the population was estimated at 6,000 to 7,000 Athabascan Indians. The nomadic existence of bands limited "settlements" to seasonally-occupied fish camps and winter villages at certain river valleys or confluences. For most of the year, small family groups traveled through regions procuring food from seasonal sources. When the initial fur-trading post was established in the upper Yukon basin in 1846, locals began trading for Euroamerican goods, including firearms, foodstuffs, and cloth. As these goods became more necessity than luxury, and firearms made hunting less of a group activity, the traditional lifestyle changed to the extent that a village was established near the post with nearly year-round habitation. This semi-nomadic pattern remained until the various gold stampedes began in 1886 and the US Army established Fort Egbert. The number of Euroamericans was previously limited to a few at fur-trading posts and occasional travelers. With the gold miners and military came the first non-native communities, some reaching populations in the hundreds as long as the promise of gold held. These communities required firewood, cabin timbers, fish, and meat from the surrounding environment. It was expedient to acquire these from Native sources, and more villages were established near the non-native communities to take advantage of available jobs. In addition, the newly-arrived boats transporting goods and people on the Yukon River needed locally-experienced pilots for navigation and large quantities of wood for fuel, so the Alaska Natives found additional sources of income. As the gold rushes faded, many miners moved away, but some stayed and competed not just for town and river jobs, but

also in fur trapping. Knowledge of English and the American legal system gave the non-natives advantages over their Native competitors.

By 1915, Alaska's non-voting delegate to the U.S. House of Representatives, James Wickersham, urged the chiefs of seven Tanana Valley villages to take title to a small amount of land in anticipation of the Alaska Railroad completion and waves of white settlers taking whatever land they chose. The chiefs could pursue individual allotments under the 1906 Alaska Native Allotment Act or could seek reservations for villages. The seven Tanana chiefs rejected those options in favor of continuing the status quo, but asked that their people be educated so that they could better compete for contracts and jobs. Missionaries had been in the area, but had not opened schools. The council's decision was echoed through Alaska over most of the next fifty years and left most Natives without reserved lands, but brought educational opportunities to Native children. As schools were established, families began to settle nearby to stay together through the year. This reinforced the villages while the non-Native villages and posts along and near the Yukon River were largely emptied and many abandoned. Non-Natives moving to the area homesteaded or continued to operate dispersed mining claims and fur trap lines, particularly away from the Alaska Highway.

Some reservations were established in Alaska despite the 1915 meeting noted above. Metlakatla, on Annette Island in Southeast Alaska, is the only Congressionally designated reservation, and the only designated reservation remaining after ANCSA. All others were created by Executive or Secretarial Order, including those in the areas of Arctic Village/Venetie and Tetlin for those villages. Unfortunately, reservation status was used to disenfranchise residents and did not always protect subsistence and other resources for the benefit of Alaska Natives. For these reasons, reservations were rarely sought and occasionally rejected by villages.

This status was maintained until TAPS easements were complicated by Native ownership claims and ANCSA was passed by Congress. In 1971, ANCSA 17(d)(1) withdrawals prevented homesteading and mineral entry in anticipation of settling Native land claims. The Act terminated reservations (other than Metlakatla) and allowed Native village and regional corporations to select defined amounts of land for transfer to the benefit of Alaska Natives. As the result of ANILCA in 1980, large tracts of lands previously managed for multiple uses by the BLM transferred from general management to limited use. These included the Yukon-Charley Rivers National Preserve, the Tetlin and Yukon Flats NWRs, the Steese National Conservation Area, and the White Mountains NRA.

### **3.5.2.3.1. Occupational and Interest Groups**

Discussions of groups and individuals are included to facilitate the assessment of social effects. Concerns of the following groups in relation to the managed lands will be assessed: rural subsistence users, Alaska Natives, recreationists, miners, and those who prioritize resource protection. It should be noted that these groups are not mutually exclusive and examples of individuals and households that fit into many categories are likely to be present.

#### **Rural Subsistence**

Subsistence is an important part of the prehistory, history, culture, and economy of the study area. ANILCA established a preference for rural residents hunting on all federally managed land in Alaska and a similar preference for fishing in ANILCA-created conservation units (See

Subsistence section). . Subsistence is separate from sport hunting and fishing, where the products supplement a diet based on non-local foods. Fairbanks has been identified as non-rural.

There are many challenges facing the rural population that relies on subsistence food sources today. Challenges include competition with other users, high fuel costs, changes in seasonal migrations, and changes in climate affecting subsistence resources. Increasing transportation fuel costs may shift consumption to heavier reliance on subsistence foods, but more importantly increases the cost of subsistence tools and equipment. This is particularly true in Alaska, where transportation can account for more than half of the delivered cost of a product. Increasing heating fuel costs result in greater use of local firewood sources. Changes in land ownership restrict access to public land used for subsistence activities, particularly where BLM is transferring title from the system of public lands.

### **Alaska Natives**

The planning area is the traditional homeland of five groups of Athabascan Indians: the Gwich'in, Han, Tanana, Tanacross and Upper Tanana. Each of these groups represents a distinctive culture characterized by different languages, territories, and unique adaptations to the natural environment. As a whole, the groups are referred to generally as Athabascan Indians due to similarities in the individual languages that represent an overarching shared language phylum (VanStone 1974) and common ancestral group in the long-distant past.

Given their location in Interior Alaska, many of the Athabascan groups in the planning area were the last to be contacted by Euroamerican explorers, trappers, and goldseekers. As a result, many of the communities retain a very traditional lifestyle, preserving their cultural values, beliefs, and practices by maintaining a close relationship with the land, placing great value on subsistence use and local resources. The following description of each Athabascan group in the planning area highlights the major differences between the cultures, focusing on those aspects that are relevant to the current planning effort.

#### **Gwich'in**

Referred to as Kutchin in the past, the Gwich'in occupy the northern portion of the planning area. Their traditional territory is generally bounded by the Brooks Range in the west, the arctic coastal plain to the north, the Yukon River to the south, and extends eastward into Canada to the Peel and Mackenzie Rivers (Slobodin 1981). Current communities within the planning area correspond to the remaining bands: Chalkyitsik (Draanjik Gwich'in or Black River Band), Fort Yukon and Circle (Kutchin Gwich'in or Yukon Flats Band), and Birch Creek (Tennuth Gwich'in or Birch Creek Band). Beaver, established during the Chandalar gold rush, has a mixed population of Gwich'in and Koyukon Athabascans, and Inupiat Eskimo (ADCRA 2008). Steven's Village was founded by three Koyukon Athabascan brothers at the turn of the century, but the majority of the current population is Gwich'in (ADCRA 2008).

The Gwich'in are "people of the deer," (Slobodin 1981) in that they have a heavy reliance, both in terms of subsistence and ideologically, on caribou. Other important resources include: moose, Dall sheep, black bear, salmon, whitefish, lake trout, pike, burbot, geese, ducks, swans, beaver, hare, muskrat, tree squirrel, ground squirrel and porcupine. In addition to those furbearers listed above, fur from weasels, wolves, wolverine, and lynx are also utilized for both personal use and trade. The Gwich'in, like the neighboring Han and Koyukon Athabascan Indians, are organized within a clan system comprised of three matrilineal clans (Slobodin 1981).

## Hän

The Hän occupy the mid-eastern portion of the planning area, located along the upper Yukon River in both Alaska and Canada, including the Fortymile River area. Currently, the only two communities within the planning area that have a Hän population are Eagle and Eagle Village. The Hän in Alaska maintain close ties with their kin in Canada, most of who live in or near Dawson, Yukon Territory (Crow and Obley 1981). The Hän have been and are more reliant on fish, especially king, coho, and chum salmon, than they are on meat as the basis of their food supply (Osgood 1971; Crow and Obley 1981). However, caribou, moose, hare and other small game, fresh water fish, migratory waterfowl and eggs, berries and ptarmigan were also important subsistence resources (Simeone 1982).

## Tanana

The traditional territory of the Tanana encompasses the western portion of the planning area, located along either side of the Tanana River. The current communities of Fairbanks, North Pole, Salcha, and Delta Junction all fall within this territory. Today, while there are numerous Athabascan Indians living within these communities, there are no recognized Tanana villages within the planning area.

## Tanacross

Tanacross is the ancestral language of the Mansfield-Ketchumstuk and Healy Lake-Joseph Village bands of Athabascan Indians (Simeone 1982). The ancestral territory of the Tanacross encompassed an area bounded by the Goodpaster River to the west, the Alaska Range to the south, the Fortymile and Tok Rivers to the east, and the Yukon Uplands to the north. Within the planning area, the communities of Healy Lake, Dot Lake, and Tanacross are predominantly populated by Tanacross people. Caribou are of primary importance to the Tanacross, as are moose, ducks, Dall sheep, marmot, ground squirrel, and whitefish (McKenna 1981). Salmon do not range this far up the Tanana River, and are not a reliably utilized resource by the Tanacross.

## Upper Tanana

The traditional area of the Upper Tanana is comprised of the remainder of the Tanana River, with the boundary at Tetlin to the west, the Wrangell Mountains to the south, the East Fork of the Fortymile River to the north, and the White River (in Canada) to the east (McKenna 1981). Historically, the Upper Tanana were divided into four bands, two of which are located within the planning area: the Lower Nabesna band and the Tetlin-Last Tetlin band (Simeone 1982). The contemporary communities of Tetlin, Northway, Northway Village, and Northway Junction are all Upper Tanana. Like the Tanacross, caribou are a highly utilized resource by the Upper Tanana, as are hare, moose, Dall sheep, ducks, muskrat, geese, swans, cranes and whitefish (Simeone 1982).

## Recreationists

Recreation is a component of many lifestyles in the planning area and is an important element of the overall quality of life for residents. Recreational activities on the public lands include camping, hiking, biking, boating, non-subsistence hunting and fishing, skiing, birding, OHV, and other activities. In addition to local recreation use, tourists from all over the world come to this area, with outdoor recreation as an important component of their travel.

Recreationists represent diverse groups of people, and changes in recreation management affects participants in various activities differently. An example of this is the interaction of motorized and

non-motorized activities. While snowmobile riders seek open access to all public lands, skiers and dog team drivers may seek access to areas free from snowmobile use. On the water, canoeists and rafters may seek areas free from motorized boats. Non-hunting recreationists may be hesitant to use areas during hunting seasons. Common concerns raised during scoping included restricted access to public lands resulting from changing land ownership patterns and sustainability of trails.

Hunting and fishing may be undertaken for one of several purposes (sport, personal use, or subsistence), and results in serious competition for declining wildlife in some parts of the planning area. Increased recreational hunting has had an impact on subsistence users. Local residents indicated that caribou harvest quotas on the Taylor Highway were met after only a couple of days, due to the large number of hunters from Anchorage and Fairbanks. Special hunts were required for subsistence.

### **Miners**

Mining is a historic and current use of some of the public lands within the planning area. More detailed information is provided in the Mineral Occurrence and Development Potential Reports (BLM 2009a,b). Most of BLM lands in the planning area is closed to mineral entry (other than the navigable river bottoms open to state claims). The harsh climate of Interior Alaska creates difficulties with year-round operations. Changes in land ownership may affect access to mining claims. In areas open to mining, it is a popular activity as evidenced by claims and participation.

During scoping, the Fortymile Mining Association identified concerns about access, the ANCSA 17(d)(1) withdrawals, navigability determinations on the Fortymile River, and the need for long-term camping permits for those working state mining claims. The Alaska Miners Association is an additional occupational organization representing mining interests beyond those of the Fortymile Mining District. The Alaska Miners Association has identified access and opening the Steese National Conservation Area to mineral entry as issues or concerns to be addressed in the Eastern Interior RMP.

### **Groups and Individuals who Prioritize Resource Protection**

People living both within and outside the planning area, along with a variety of local and national organizations, have shown interest in this plan regarding protection of natural resources. Interested groups include: the Alaska Wilderness League, Alaska Chapter of Wilderness Watch, Alaska Quiet Rights Coalition, Northern Alaska Environmental Center, Defenders of Wildlife, The Wilderness Society, Alaska Center for the Environment, and many others. These groups and their members generally advocate for the protection of natural resources, scenic quality, and a Primitive recreational experience on public lands. These groups generally support designation of special areas such as wild and scenic rivers, areas of critical environmental concern, or wilderness areas.

#### **3.5.2.3.2. Attitudes and Beliefs**

Since ANILCA was enacted, the BLM has conveyed millions of acres of lands to the State of Alaska and Native corporations. This land conveyance has reduced the amount of BLM lands available for multiple-use purposes. In 1986, all public lands in Alaska were permanently closed to homesteading. These events have affected the local social patterns and activities and brought new users to the region.

It is at the community level that the disparity of income and ethnicity result in differing uses of (and relationship to) public lands in the planning area. Alaska Natives comprise more than

90 percent of the population of Beaver, Birch Creek, Chalkyitsik, Stevens Village, Tanacross, and Tetlin. While these villages are comparatively new, the inhabitants are on ancestral lands reaching back thousands of years. Alaska Natives represent less than 10 percent of the population of Central, Delta Junction, Dot Lake, and Eagle (ADCRA 2008 Community Database Online). People brought to the area by prospects of fur, gold, and other resources, established these communities less than 150 years ago. These resources were sold for money, so brought a greater reliance on market economies than subsistence, although subsistence hunting, fishing, and trapping are still hallmarks of most rural communities in Alaska.

Subsistence, in fact, defines a key set of attitudes mentioned in scoping meetings and elsewhere. For Alaska Natives, subsistence encompasses lifestyle, culture, and heritage. It is the traditional way, a choice made to stay close to the land and close to community. Other rural non-native residents living in the villages or in a remote cabin setting can experience a similar subsistence lifestyle with mutual support of surrounding subsistence users. The land and its resources can define the social relationships between communities, villages, tribes, and remote subsistence families. The community of Eagle has summertime access to Chicken by road, yet Chicken has no year-round residents, so there is limited social connection, and negligible economic interaction. Before the road was finished (1953), Eagle was a commercial center on the Yukon River, supplying the miners and others in the Fortymile region, including Chicken. While commercial river traffic has dropped, the Yukon River is still a primary transportation corridor for recreation and subsistence users.

Other than in Fairbanks, there was concern expressed during scoping that visitors and newcomers do not understand or appreciate the area. Newcomers are reported to bring city attitudes, failing to understand or respect local customs and traditions of others living in the area. Visitors using motorized transport (boats and OHVs) may not respect others hunting or fishing in an area and trespass on Native Allotments and private lands. Others leave wasted meat at small airstrips, rather than pay to fly it out. Visitors and newcomers use other people's trapping cabins, but do not take care of them or replenish stores of food and firewood. Someone from outside the area may buy a mining claim and clear the land before they have done any exploration to know where to dig; then run out of money and leave an eyesore for everyone and a bad name for mining. There are also reports that users unfamiliar with the area tear up trails using inappropriate motorized transport, use the trails in the wrong season, or through carelessness. Yet some scoping comments from Anchorage and Fairbanks indicate the attitude in urban areas, possibly including areas outside of Alaska, is that public lands in the planning area currently lack sufficient access, and this reduces their access to recreation, mining, fishing, and hunting opportunities.

#### **3.5.2.3.3. Quality of Life**

In many cases, social effects of land management decisions are described in terms of effects to quality of life; these effects could include the amount and quality of available resources such as recreation opportunities; or resolution of problems related to resource activities, such as population growth.

#### **3.5.2.3.4. Socially Significant Places**

The planning area has many socially significant places. Larger scale socially significant places in the planning area include the Black River, the Fortymile, and the White Mountains.

During scoping, the Black River and the Salmon Fork were identified as an important subsistence area for Chalkyitsik and other Yukon Flats communities. During scoping, these areas are described as “crucial to the livelihoods of the people who live there now, as it has been for thousands of years.”

History is a significant component to the Fortymile River drainage. The first large mining stampede in Alaska occurred in the Fortymile River. “The miners were there before the BLM got there” was one comment received during scoping. The Fort Egbert Historical Society has worked with the BLM in maintaining and sharing the history of the Fort Egbert, established in 1899, which is adjacent to the first incorporated town in Interior Alaska.

The White Mountain NRA provides a sense of place to the more urban Fairbanks area. “The White Mountains is in Fairbanks backyard” and “Its probably one of the most visible things around Fairbanks that people participate in...” were two comments received during scoping.

### **3.5.3. Subsistence**

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. Subsistence resources are the fish, wildlife and plant species used by Alaskans to provide food, clothing, shelter, and fuel, and for producing artwork and other customary uses. A subsistence lifestyle is the harvest of wild resources in a traditional way that includes seasonal timing, use areas and processing, distribution and consumption of the harvests. The core of many Alaska Native cultures within the Eastern Interior is the inseparable elements of land, environment, people and resources. Subsistence is an integral part of the rural mixed economic system. The combination of subsistence and commercial wage activities provides the economic basis for rural community life. Analysis conducted by Wolfe and Walker (1987) indicates that subsistence harvests are a prominent part of the economy and social welfare of most rural Alaska regions. Subsistence, as discussed in this chapter, refers to the use of fish, wildlife, forest and woodland products and other vegetative resources, by federally qualified subsistence users. Federally qualified subsistence users are residents of the State of Alaska, as defined in 50 CFR Part 100 § 100.4, and whose primary, permanent home is within an area determined to be rural by the Federal Subsistence Board through the process in 50 CFR Part 100 § 100.15.

#### **3.5.3.1. Federal Subsistence Management Program**

ANILCA Title VIII establishes a priority for the "customary and traditional uses" of these subsistence resources by all rural residents of Alaska on federal public lands. The law provides the opportunity for rural residents to continue to engage in a subsistence way of life. State of Alaska law recognizes a subsistence preference for all residents of Alaska (Alaska Statute 16, Title 16 and Alaska Administrative Code, Title 5).

A dual fish and wildlife management system was created when it was determined that the State of Alaska Constitution did not allow for a rural preference for harvest of fish and wildlife. The Secretaries of Interior and Agriculture assumed management of the ANILCA subsistence mandate on federal public lands. The resulting dual system resulted in overlap between the State of Alaska and the federal government management of subsistence uses. The Alaska Board of Fish and the Alaska Board of Game pass regulations that are enforced by the State for resident and non-resident trapping, hunting and fishing on all Alaska lands and waters. The Federal

Subsistence Board passes hunting, fishing, and trapping regulations that are enforced by the federal government on federal public lands and waters in Alaska.

Opportunities for the harvest of subsistence resources are often the same in a given area for all residents of the state. This occurs when seasons and bag limits in federal and state harvest regulations align. Federal harvest seasons for some species are more liberal to coincide with traditional harvesting patterns and when the resource allows for extended opportunity. These seasons apply only on federal public land and to qualified rural residents.

Subsistence use of renewable resources on federal public lands is the priority consumptive use (ANILCA Title VIII §802(2) and may be restricted in order to assure the continued viability of a fish or wildlife population or the continuation of subsistence use of that population. In some cases the Federal Subsistence Board will determine which fish stocks and wildlife populations have been customarily and traditionally used by specific communities or areas for subsistence purposes. The determination process identifies the communities or areas that meet the eight factors for customary and tradition use (50 CFR Chapter 1 Subchapter H Part 100 § 100.16 Customary and traditional use determination process).

ANILCA Title VIII § 802(2) includes criteria to allow further limits on the subsistence harvest of fish and wildlife when it is necessary to restrict taking to assure the continued viability of a fish or wildlife population or the continuation of subsistence uses of such populations. Where allocation on an area or community basis is not achievable subsistence opportunity may be limited on an individual basis through action by the Federal Subsistence Board (50 CFR Chapter 1 Subchapter H Part 100 § 100.17).

### **3.5.3.2. Subsistence Harvest Levels**

Eighteen recognized villages are within or immediately adjacent to the planning areas and qualify as rural for subsistence use: Chalkyitsik, Fort Yukon, Birch Creek, Beaver, Stevens Village, Livengood, Circle, Central, Healy Lake, Delta Junction, Dot Lake, Tanacross, Tok, Tetlin, Northway, Eagle, Village of Eagle, and Chicken. Residents of many other rural areas and villages also have preference for subsistence uses in the planning area. Section 804 of ANILCA further defines priority criteria when it is "necessary to restrict" the subsistence harvest of certain populations of fish and wildlife in order to protect their viability or to continue uses. This customary and traditional use determination process has been applied to identify specific communities' and area's use of specific populations within the Eastern Interior (Section 3.5.3.1 Federal Subsistence Management Program). These determinations have been passed into regulation and are codified in the Code of Federal Regulations(36 CFR Part 242 and 50 CFR Part 100).

Customary and traditional use determinations are summarized in the annually published *Subsistence Management Regulations for the Harvest of Wildlife on Federal Public Lands in Alaska and Subsistence Management Regulations for the Harvest of Fish on Federal Public Lands in Alaska* booklet. Under these determinations, rural residents of areas or villages, other than those listed as within or immediately adjacent to the planning areas, may participate in hunts as federally qualified subsistence users. Residents of the Fairbanks North Star Borough are not considered rural residents under ANILCA, and therefore do not qualify as federal subsistence users.

Resource harvest data is available from the ADF&G Community Profile Database. Table 3.48, "Subsistence Harvest Data for Eastern Interior Communities." lists the most current and complete

harvest information by community available for the planning area. Representative years were used for the data in the table.

**Table 3.48. Subsistence Harvest Data for Eastern Interior Communities.**

Community <sup>a</sup>	Pounds of Resources Harvested by Village <sup>b</sup>				
	Birds and Eggs	Non-Salmon Fish	Salmon	Land Mammals	Vegetation
Beaver Creek	4, 058 (48.87)	6,580 (79.25)	34,406 (414.37)	15,504 (186.72)	219 (2.64)
Birch Creek	128	1,838	626	2,955	ND <sup>c</sup>
Chalkyitsik	546	75	ND	5072	ND
Central	ND	ND	ND	ND	ND
Circle	350	272	12,167	8,043	ND
Chicken	ND	ND	ND	ND	ND
Delta Junction	ND	ND	ND	ND	ND
Dot Lake	148 (2.27)	2,094 (32.05)	1,329 (20.34)	3,485 (53.34)	499 (7.64)
Eagle	ND	ND	ND	ND	ND
Fort Yukon	20,906 (33.37)	75,965 (121.26)	380,744 (607.77)	145,955 (232.98)	2,156 (3.44)
Healy Lake	ND	ND	ND	ND	ND
Livengood	ND	ND	ND	ND	ND
Stevens Village	1,761 (19.57)	9,155 (101.72)	82,949 (921.66)	8,456 (93.96)	164 (1.82)
Tanacross	498 (5.34)	8,231 (88.33)	3,598 (38.61)	10,252 (110.02)	709 (7.61)
Tetlin	668 (5.77)	14,354 (123.96)	287 (2.48)	9,000 (77.72)	462 (3.99)
Tok	5,363 (4.96)	37,352 (34.55)	38,147 (35.28)	76,827 (71.05)	3,582 (3.31)
Northway	3,136 (9.68)	41,873 (129.24)	4,684 (14.46)	38,309 (118.24)	2,088 (6.44)
Village of Eagle	ND	ND	ND	ND	ND

<sup>a</sup>Source: ADF&G, Community Profile Database—most representative year. Version 3.11, March 2001. (Magdanz et al. 2004.)

<sup>b</sup>Per capita data, shown in parenthesis, given where available

<sup>c</sup>ND = No data

Harvest data for Fortymile caribou and moose in Unit 20(E) are available by village. Table 3.49, “Harvest by Village for Fortymile Caribou” summarizes data from registration permit hunts for Fortymile caribou by villages within the planning area. All villages outside the planning area are lumped under “other.” Fall and winter hunting seasons are lumped by year.

**Table 3.49. Harvest by Village for Fortymile Caribou**

Community	2008	2007	2006	2005	2004
Central	6	6	12	0	6
Chicken	2	0	1	1	2
Delta Junction	2	12	7	11	4
Eagle	11	26	19	19	3
Northway	0	1	0	1	0
Tok	64	80	100	103	85
Other	53	25	22	25	10
<b>TOTAL</b>	<b>117</b>	<b>150</b>	<b>161</b>	<b>160</b>	<b>110</b>

### 3.5.3.3. Subsistence Use Patterns

Subsistence use patterns vary widely throughout the four subunits. Patterns of use have changed over time as the use of seasonally occupied camps has diminished. During the mid-20th century centralization of communities began to occur with advances in transportation technology (USFWS 2010a), economic advantages of access to new roads, and compulsory school attendance

(Martin 1983, Caulfield 1983, Marcotte 1991, Halpin 1987, Haynes et al. 1984). State and federal hunting regulations have contributed to further changes in seasonal rounds by creating open and closed seasons for harvest of fish and wildlife resources. Rural residents continue to harvest fish, wildlife, and vegetation resources as a major part of their diet.

Seasonal rounds are affected by weather, regulations, condition of animals, and resource availability. For example, residents of the village of Dot Lake historically harvested moose in July, which provided the best timing for drying meat (Martin, 1983). Subsistence hunters from Dot Lake also prefer the meat at this time of year, citing that the layer of fat is thicker and greasier and the meat is more tender. Winter hunting for moose was also important. Regulations now allow moose hunting primarily in the fall, which for many villages is outside the traditional seasonal harvest round.

Traditionally, people of the upper Yukon River move to fish camps in July when salmon begin running up rivers and streams. A second pulse of activity at fish camps begins during mid-August for communities that harvest fall runs of chum salmon (Andrews 1986). Fall chum salmon is the major fish species used by residents of the upper Yukon River (Andrews 1986). Fishing for whitefish and pike begins after break-up of waterbodies (Case 1986). People of the Upper Tanana (Tanacross, Northway, Tetlin, and Tok) moved to the Copper River in June and July to harvest from the runs of sockeye and Chinook salmon (Haynes et. al. 1984). Sharing and trade of salmon from Copper River Basin residents to Upper Tanana communities persists. The use of Copper River salmon continues to have an important cultural and social meaning to families of the Upper Tanana and is considered an "important dimension of their ongoing relationship with neighbors to the south" (Haynes et. al. 1984).

### **3.5.3.3.1. Subsistence Use Areas**

Little data is available on places or areas significant to and for subsistence use. ADF&G's, Division of Subsistence has conducted studies investigating patterns of use; such as seasonal cycles, use areas, and resources harvested. Other agencies and organizations have collected similar data or developed maps of subsistence use areas for specific areas or purposes. Many of these maps were developed during preparation of technical reports by ADF&G's, Division of Subsistence and represent a snapshot of use areas during a specific time or may represent historic use areas (Maps 94, 95, 96, 97 and 98). Resource distribution and subsistence use areas change over time and these maps are viewed as the minimum use areas. Important use areas may be outside the areas captured on the maps. Information on subsistence use areas gathered during the scoping period is important for this reason.

This section discusses subsistence use areas for the following villages: Beaver Creek, Birch Creek, Chalkyitsik, Circle, Dot Lake, Eagle, Eagle Village, Fort Yukon, Northway, Stevens Village, Tanacross, Tetlin, and Tok. Information on use areas of other villages in or adjacent to the planning area is not available. Use of place names and band names are those used by the authors of the cited studies and may not be consistent. Data on subsistence use areas are not available for Central, Chicken, Delta Junction, Healy Lake, or Livengood.

Data on use areas for Circle, Eagle and Eagle Village are from Caulfield (1979). Use areas for Beaver are from Sumida and Alexander (1985, 1989). Data on use areas for Birch Creek, Chalkyitsik and Fort Yukon are primarily from Caulfield (1983), but also Sumida and Alexander (1985) and Sumida and Anderson (1990). Use areas for Dot Lake, Tanacross, Tok, Tetlin and

Northway are primarily from Marcotte (1991) but also Case (1986), Halpin (1987) and Martin (1983).

### **Birch Creek, Chalkyitsik, and Fort Yukon**

#### Birch Creek

Birch Creek village is situated on Birch Creek, the headwaters of which are within the south unit of the Steese National Conservation Area. Historically, people in this area moved seasonally into the White Mountains to harvest caribou and sheep and to the Birch Creek, the Yukon River, and many lakes and creeks to harvest fish, moose, waterfowl and other resources. People of this area continued to live a mobile life until the early 1950s when Birch Creek Village became a more permanent residence for area people. Birch Creek and the Yukon River continued to be important use areas during 1970 through 1982, the years of the Caulfield study (1983).

#### Chalkyitsik

The Black River, including those portions surrounded by BLM-managed lands, is the focus of much of the resource harvest activities of Chalkyitsik residents (Caulfield 1983). During the scoping period for this plan, residents of the village of Chalkyitsik (Dr' aanjik Gwich'in ) indicated that the Black River and Salmon Fork areas are important subsistence use areas for them. Like most communities in the planning area, life for the Dr' aanjik Gwich'in was highly mobile. From autumn until spring the people lived in the headwaters of the Black River, trapping furbearers and harvesting moose, caribou, sheep, and whitefish. After break-up, they floated downriver to fish for the summer. The current village site of Chalkyitsik was a traditional fishing camp. Nelson (1973) documented that by 1969-70 most Dr' aanjik Gwich'in had moved from seasonal camps to the present village of Chalkyitsik.

#### Fort Yukon

Fort Yukon is located at the convergence of the Porcupine and Yukon rivers and has been a gathering place for the Gwichyaa Gwich'in since aboriginal times. Fort Yukon became a center of commerce in the region during the 1870s when gold was discovered throughout the Klondike, Fortymile and Birch Creek drainages. It remains a center of commerce and transportation in contemporary times, and has a more mixed economic base of employment and subsistence than other communities in the region (Caulfield 1983).

The subsistence use area for this community includes portions of the Steese and the Upper Black River subunits. The use areas documented by Caulfield (1983) overlap with BLM-managed lands for bear and moose hunting on the scattered lands around Circle and trapping around the confluence of Grayling Creek with the Black River, which is primarily refuge and Doyon, Limited, lands.

### **Eagle Village, Eagle, and Circle**

Caulfield (1979) describes subsistence use areas both historically (1847 to 1970) and from 1970 to 1977 for Circle, Eagle, Eagle Village and Yukon River residents. Lands immediately adjacent to the villages are primarily Native corporation or village-selected lands, except for Circle, where low priority selections will probably be relinquished to BLM. Yukon Charley Rivers National Preserve and Yukon Flats NWR are major blocks of federal land surrounding these communities (Map 1).

Eagle is located on the Yukon River, 12 miles downstream from the Alaska border with Yukon Territory, Canada. Eagle Village is on a bluff three miles upriver from the larger town of Eagle. Eagle and Eagle Village are largely surrounded by Native corporation and State land. The Eagle/Eagle Village School is located in Eagle Village. Caribou, moose and salmon have been documented as the major subsistence resources for these villages (Maps 94 and 95).

### Eagle Village

In 1977 when Caulfield (1979) collected subsistence use data for Eagle Village, residents were predominantly Han Athabascan with kin ties to Peel River Kutchin. Elders said that the village was established there because of nearby fishing eddies and access to abundant caribou. As early as the 20th century, the Han spent winters trapping in the Fortymile River, as well as other areas. The American Summit area has been and continues to be a significant area for harvest of caribou from the Fortymile herd by residents of Eagle and Eagle Village. Caulfield (1979) documents the importance of the Taylor Highway for gaining access to caribou hunting along American Summit. The BLM manages little land in the American Summit area and is unlikely to retain any selected lands in this area. Sheep hunting by villages in the Glacier Peaks area west of Eagle has been documented by Caulfield (1979). This area is currently state-selected or state-managed. High priority areas selected by the state will likely be conveyed to the State of Alaska during the life of the plan.

### Eagle

Eagle was established in the late 1800s to support gold rush activities in the area (<http://www.eagleak.org/>). Eagle became a judicial, commercial, mining, and military center for the Upper Yukon River area. Caulfield (1979) reports that about half the residents in Eagle participated in subsistence use activities. Most subsistence resource use consisted of cutting firewood, fishing for salmon, hunting moose, bear or sheep and running traplines in the winter. Use areas identified by residents of Eagle are similar to those used by Eagle Village, where there are few BLM-managed lands. During public comment meetings, residents of Eagle added that an area of BLM-managed lands north of the Seventymile River are high value for trapping and are consistently used for this subsistence activity.

### Circle

The village of Circle is located on the Yukon River at the terminus of the Steese Highway. Based on census statistics from 2000, the village continues to be predominantly Native Alaskan. Caulfield (1979) reports that use of subsistence harvest remains high in Circle. Data from the ADF&G Community Profile Database for 1993 to 1997 (Table 3.48, "Subsistence Harvest Data for Eastern Interior Communities.") documents continuing high levels of dependence on subsistence resources by residents of the village. Fishing for salmon adjacent to and below the current village was described by Caulfield (1979) as a major focus of summer. Moose and bear use areas were accessed by riverboat along the Yukon River, upriver as far as the Kandik River and down river as far as Birch Creek. Fortymile caribou were an important subsistence resource and were frequently harvested around Medicine Lake and along the Steese Highway near Central. During the mid-1960s the Fortymile caribou population declined enough that the herd stopped using this part of their range. As the herd size has slowly increased over the past decade, they are occupying more of their historic range, but still do not reliably use the Medicine Lake area. Based on registration permit data, no Fortymile caribou have been harvested by residents of Circle in the past six years (prior data was not reviewed).

## **Upper Yukon River**

Caulfield also documents the nearly complete dependence on subsistence resources by families scattered along the Yukon River between Eagle and Circle. Many of these families were in trespass on federal lands and most have left the area over the past 15 years.

### Beaver

Beaver is on the Yukon River and was established in 1910 by a diverse population that included Eskimo families from the arctic coastal plain and the Kobuk River, Koyukon and Gwich'in Athabaskan Indians, Japanese- and Euro-Americans. The village is located within the boundaries of the Yukon Flats NWR. Salmon and moose are important subsistence resources to residents of the community. Sumida (1989) documents subsistence uses for the community. No subsistence uses of specific resources on BLM-managed lands within the planning area has been documented, however, the Beaver Tribal Council includes the Mount Schwatka area and a portion of the Victoria Creek drainage within the White Mountains NRA, as designated subsistence areas for Beaver (Sumida 1989) (Map 96).

### Stevens Village

By 1900 the present location of Stevens Village was documented as a settlement (Sumida 1988). The village is located near the Dall River 27 miles upstream from the Yukon River bridge on the Dalton Highway. In 1939, a tribal government with a constitution and by-laws was formed by the village under the Indian Reorganization Act of 1936. By the 1930s, resources important to the village were reported to be in drastic decline and the timber supply was nearly depleted from years of harvest for steamboat traffic.

The village is within the Yukon Flats NWR and the White Mountains Subunit. Much of the traditional harvest areas for the village are within the NWR boundaries, not on BLM-managed lands in the planning area. Salmon, freshwater fish, and moose are important resources for the community (Maps 94 and 95).

## **Upper Tanana Region**

### Dot Lake

Dot Lake is located off the Alaska Highway 60 miles southeast of Delta Junction and 48 miles northwest of Tok. The site of the current community was originally used as a winter trapping camp by Upper Tanana region Athabascans. A construction camp for crews constructing the Alaska Highway was built at Dot Lake during the early 1940s. The first permanent settling was in 1946, followed by other Athabaskan families from around the area. Abundant local resources, the church and school, and economic advantages of being located on the highway were reported as the draw to settle at Dot Lake (Martin 1983). It is likely that residents of Dot Lake currently participate in harvest of Fortymile caribou and other subsistence resources on BLM-managed lands in the Fortymile Subunit (Maps 94 and 95).

### Tanacross

Tanacross is located 12 miles northwest of Tok and is surrounded by state and Native corporation land. Residents of the area of present-day Tanacross began settling seasonally at the original site (Tanana Crossing) in 1902 when the military telegraph line from Fort Egbert (Eagle) to Fort Liscum (Valdez) was built and a maintenance station was established at Tanana Crossing

(Marcotte 1991). By 1939, Alaska Natives from the Mansfield and Ketchumstuk area permanently settled at the Tanana Crossing site. In 1943, the village formed a tribal council under the Indian Reorganization Act of 1936. Due to periodic flooding of the river on the north bank and the better access to the highway on the south bank, the village was relocated directly across the Tanana River in the early 1970s. BLM-managed lands in the Fortymile Subunit, including both remote lands and those accessible from the Taylor Highway, are important to residents of Tanacross for the harvest of moose, caribou, waterfowl, bear, and berry picking and trapping.

### Tok

Tok is located on the Alaska Highway, 92 miles from the Alaska border with Yukon Territory, Canada. Tok originated as a camp for crews constructing the Alaska and Glenn Highways in 1942. It was established as a townsite in 1946. Tok became a transportation hub and regional center. BLM-managed lands in the Fortymile Subunit are important to for subsistence use by residents of the community. Residents harvest bear, caribou small game, and moose and many operate extensive trap lines in the Fortymile area (Marcotte 1991).

### Tetlin

The current site of Tetlin became a settlement for the Tetlin and Last Tetlin Band in the late 1920s (Marcotte 1991). The village is located along the Tetlin River between Tetlin Lake and the Tanana River and is connected by road to the Alaska Highway. Unpublished data from the ADF&G indicates that the Tetlin subsistence use area includes large portions of the area accessible from the Taylor Highway and the Mosquito Flats, which includes BLM-managed lands.

### Northway

Northway is located on the Nabesna River 55 miles south east of Tok. Access to the community is off the Alaska Highway by the seven-mile long Northway Road. People of the Nabesna and Chisana river areas began settling in the area in the 1940s when a post office, state school and a Federal Aviation Administration and airport station were established at the current town site. BLM-managed lands in the Fortymile Subunit are within the contemporary subsistence use area for residents of the Northway community. Case (1986) documents that residents harvest caribou, moose, vegetation and timber resources, and trap in this area.

## **3.5.3.3.2. Subsistence Activities**

Wage employment opportunities are very limited in most villages (Caulfield 1983, Martin 1983). Dependence on wild resources for food, shelter, and clothing is extremely high. Use includes the harvest of moose, caribou, sheep, black and brown bear, grouse, ptarmigan, hare, porcupine, squirrels, Chinook and chum salmon, other freshwater fish, and waterfowl for meat; trapping of furbearers for pelts; and collecting of berries, roots, mushrooms, edible greens, birch bark, spruce root, firewood and house logs. Furs, fish, and some vegetation are also harvested commercially providing limited income. Craft items are made from skin, hides, pelts, bone, teeth, and antler and provide some income to villagers. Customary sharing and barter are recognized by ANILCA and provided for in federal regulations.

Resources are not equally available to all rural residents in and adjacent to the planning area. For example, communities along the Yukon River have more access to salmon than do communities along the upper Tanana. Some upper Tanana residents travel to the Copper River to harvest

sockeye salmon (Haynes et al. 1984, Case 1986, Marcotte 1991). Residents of Dot Lake have limited access to caribou, as caribou do not normally migrate near the village (Martin 1983).

Fuel prices in villages are higher than in hub communities. For the villages that are on main highways, such as the Alaska Highway, fuel prices are closer to those of Fairbanks. During June 2007 gasoline in Delta Junction was \$0.12 higher than Fairbanks (Grewe and Caldwell 2008). Communities on less traveled roads, such as the Steese and Taylor Highways experience higher fuel prices. Villages accessible only by air experienced prices over twice the per gallon cost in Fairbanks. Prices for gasoline in Arctic Village were \$4.11 per gallon higher than in Fairbanks. As early as March 2007, at meetings of the Eastern Interior RAC in Arctic Village, federal subsistence RAC members and villagers were reporting that due to the price of gasoline they were not able to travel to distant resources as they had in the past and harvest success was declining (USFWS 2007b). Cost of gasoline has become a major factor in how far subsistence hunters can travel to catch animals and gather resources.

In some areas, there is little federal land around or within reasonable hunting, trapping or fishing distance of some communities. For example, Dot Lake, Tok, Tanacross, and Delta Junction residents must travel up to 100 miles to reach areas where Federal Subsistence Management Regulations apply. Rural residents can harvest fish and wildlife under state hunting and fishing regulations, but are not allowed a preference for these over other residents of the state.

#### **3.5.3.4. Non-Market Values of Subsistence Resources and Activities**

Hunting and gathering of fish, wildlife, and vegetative resources have values that extends beyond economic worth. For many communities, hunting and gathering have shaped the culture and tradition of the people and the customs have been shared 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).

The customs and traditions within and between the planning subunits is rich and varied. These customs and traditions have been passed from generation to generation, yet they continue to change in response to technology, resource availability, and regulations.

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